

Ohio's State Medicaid Health Information Technology Plan

Ohio Health Plans
Ohio Department of Job & Family Services



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INTRODUCTION

This document is Ohio's State Medicaid Health Information Technology Plan (SMHP). This plan supports an evolution in the delivery of health care: the integration of clinical decision support knowledge, digital capture and interoperability/transfer of personal health care information with the purely human practice of the art of medicine. This plan captures benchmarks necessary to achieve the objective of providing incentives to certain Medicaid providers to adopt and implement certified electronic health record (EHR) technology. It is said that a rising tide lifts all boats. The Ohio Department of Job and Family Services (ODJFS) through the Office of Ohio Health Plans (OHP), also often referred to as Ohio Medicaid, supports 2,151,297 covered lives. Ohio Medicaid contracts with approximately 92,000 providers to serve its consumers. In ODJFS' early estimates of those providers, we anticipated that 3000-4000 providers may qualify for the incentive payments in this program over the course of the next several years. It is impossible to know if this volume of providers creates a tipping point for EHR adoption by health care providers generally in Ohio.

Purpose

The purpose of this document is to comply with federal provisions that states develop and submit for federal approval a State Medicaid Health Information Technology Plan (SMHP) that outlines the required aspects of the state's Medicaid EHR incentive payment program. The Medicaid Provider Incentive Program in Ohio is known as MPIP. The SMHP serves as Ohio Medicaid's planning document. Ohio Medicaid expects that health care delivery system advances, HITECH innovation, patient preferences, and other forces will continue to shape the future of MPIP and EHR implementation and use in Ohio.

Section 4201 of the Health Information Technology for Economic and Clinical Health Act (HITECH) of the American Recovery and Reinvestment Act of 2009 (ARRA), established both Medicare and Medicaid EHR incentive programs to incentivize the meaningful use of EHRs to improve health care quality, patient safety and cost efficiency. The Centers for Medicare and Medicaid Services (CMS) and State Medicaid Agencies (SMAs) that choose to implement incentive programs are responsible for the administration of these programs. State Medicaid Agencies that choose to implement incentive programs must use federal rules,¹ and guidance² to create Medicaid EHR incentive payment programs. Before creating programs, States must develop SMHPs³ that detail activities that implement their incentive programs.

¹ 42 CFR Parts 412, 413, 422 et al. Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule, July 28, 2010. Accessed at: <http://edocket.access.gpo.gov/2010/pdf/2010-17207.pdf>.

² CMS State Medicaid Directors Letter, *Federal Funding for Medicaid HIT Activities*, SMD#10-016, August 17, 2010. Accessed at: <https://www.cms.gov/smdl/downloads/SMD10016.pdf>. CMS SMD, Health Information Technology, SMD#09-006, September 1, 2009. Accessed at: <https://www.cms.gov/smdl/downloads/SMD090109.pdf>

³ Section 495.332, Public Health Services Act.

It is critical to note that the EHR Incentive Program was established in the American Recovery and Reinvestment Act (ARRA) as an incentive program, not a reimbursement program. It is not meant to be federal or state reimbursement for provider procurement of EHR technology. It is meant to incentivize the meaningful use of this technology, not just the procurement and limited use of the broad functionality afforded by certified EHRs. To ensure this result, 'meaningful use' (MU) measures are specifically defined federally for Stage one, with new and increasingly comprehensive targeted measures anticipated for Stage two, expected to be released for 2013.

As opposed to Medicare, where meeting MU criteria is required for first payment year participation, Medicaid initial payment year criteria can be met either through MU or by meeting criteria for the adoption, implementation or upgrading (AIU) of EHR. This standard is thought to be less onerous for payment year one participation. OHP will require that Medicaid payment year one applicants to apply utilizing the AIU eligibility criteria.

ODJFS is committed to operating a Medicaid Provider Incentive Payment program that supports the evolution in the delivery of healthcare described above, is operationally and fiscally efficient, and is compliant with all applicable federal and state requirements.

Approach to Developing the SMHP

The Ohio Department of Job and Family Services is the Single State Medicaid Agency in Ohio and through its Office of Ohio Health Plans is responsible for the administration of the Ohio Medicaid program. Ohio Medicaid provides health care coverage for families and children, pregnant women, people over the age of 65 and people with disabilities. Ohio Medicaid, which is overseen by the Medicaid Director and responsible for administering the Medicaid program, has primary responsibility for the development of the SMHP and MPIP. Various government and non-governmental stakeholders provided input into the Plan. We will continue to work with various stakeholders, particularly as MPIP implementation nears. For consistency, in this document we refer to the Ohio Medicaid Agency as either ODJFS, OHP or Ohio Medicaid. A HIT functional Table of Organization is included in this SMHP in Appendix E.

OHP developed this SMHP to describe activities underway and those that will be undertaken over the next five years to implement, oversee and monitor the Ohio MPIP program, pursuant to Section 4201 of HITECH. The SMHP addresses the following five areas:

1. **"AS IS" LANDSCAPE** – *the current state of Ohio's Health Information Technology (HIT), Health Information Exchange (HIE) and EHRs adoption and use to improve quality and cost effectiveness,*
2. **"TO BE" LANDSCAPE** – *the "envisioned future" of how Ohio will meaningfully use EHR Incentives to:*
 - 2.1. *Improve Quality, Safety, Efficiency, and Reduce Health Disparities*
 - 2.2. *Engage Patients and Families*
 - 2.3. *Improve Care Coordination*
 - 2.4. *Improve Population and Public Health*

2.5. *Ensure Adequate Privacy and Security Protection for Personal Health Information*

3. **MPIP PROGRAM** – *the plan for program administration,*
4. **AUDIT STRATEGY** – *the plan for program integrity activities and controls, and;*
5. **HIT ROADMAP** – *the pathway, expectations, and benchmarks for adoption and meaningful use over the next five years.*

Ohio Medicaid's Priority Focus

Ohio Medicaid's primary efforts have focused on two key activities: gaining the input and guidance of Medicaid providers, particularly potential EPs and EHs, and evaluating all aspects necessary to put up the Medicaid incentive payment program.

Ohio Medicaid highly values the insight and guidance of potential EPs and EHs and of those Medicaid providers who will not directly benefit from the EHR incentive payment program in the short run. Regardless of the incentive program, it will be the choices practitioners and health care organizations and facilities make that will bring the practice of medicine more fully into the digital age. For this reason, staff from Ohio Medicaid spent a significant amount of the four months following federal approval of Ohio's HIT Planning - Advanced Planning Document (P-APD) working with providers of ambulatory care and hospitals and their associations, as well as some consumer groups. Even providers precluded from directly benefiting from the program, for example long term care facilities and non-physician behavioral health providers, have been helpful to the construction of this document.

Ohio views the incentive payment program as the fulcrum to more fully institutionalizing the meaningful use of certified EHR, as such, Ohio has been squarely focused on the priority of bringing up the incentive payment program. In agreement with CMS' position, Ohio Medicaid also understands that not every element of the SMHP is of equal weight and of the priority necessary to implement MPIP. First and foremost, Ohio Medicaid's priority is to bring up the operation of the MPIP program. Ohio Medicaid will update the SMHP annually or as needed to update CMS particularly as regards implementation about initiatives to encourage the adoption and meaningful use of certified EHR technology.

ODJFS constructed, negotiated and obtained federal approval of its HIT P-APD in the spring and early summer of 2010. Once federal financing of planning was secured, July through September activities predominately focused on obtaining Stakeholder feedback on the potential and challenge of EHR technology, the changing nature of the health care delivery system and questions, concerns and operational strategies relevant to the MPIP program.

October and November activities focused on developing draft submission documents, document review and sharing for input. Preliminary discussions with CMS about program specifications of particular importance to Ohio also began in October. Initial discussions with CMS have focused on

patient volume approaches, particularly because Ohio does not utilize a separate 'stand alone SCHIP program'. Ohio's SCHIP program is fully integrated into Medicaid. Approved Title XIX and Title XXI State Plan Amendments lay parallel to provide the foundation of coverage for more than 1,200,000 Medicaid covered children in Ohio as of September 2010. Other issues for early discussion included the need for a clear understanding of Medicare's Incentive Payment Program rules and workflow for dually eligible hospitals, net average allowable cost calculations and substantiation of EP expenditures of 15% of average allowable cost.

November and December activities continue SMHP document refinement and negotiation with CMS. When the SMHP is approved, Ohio Medicaid will make the initial submission of the draft Implementation - Advanced Planning Document (I-APD) to CMS. Ohio Medicaid is currently included in CMS Group 2 National Level Repository (NLR) testing, slated for February 2011. Once CMS has approved Ohio's I-APD, Ohio will initiate the MPIP system build and/or procurement activities.

To simplify review and negotiation, Ohio Medicaid constructed the SMHP in conformance with the federally issued SMHP Template. Questions from the template are reflected as designated in the Template (including Section C questions 6, 7, 20, 21 which appear in the template with erroneously repeated numbering) and Ohio's answers follow.

SECTION A: The State's As Is Landscape

1. What is the current extent of EHR adoption by practitioners and by hospitals? How recent is this data? Does it provide specificity about the types of EHRs in use by the State's providers? Is it specific to just Medicaid or an assessment of overall statewide use of EHRs? Does the SMA have data or estimates on eligible providers broken out by types of provider? Does the SMA have data on EHR adoption by types of provider (e.g. children's hospitals, acute care hospitals, pediatricians, nurse practitioners, etc.)?

Data Sources

Ohio's As-Is HIT landscape is informed through environmental scans and assessments:

- 1) "Ohio Medicaid Electronic Health Records Survey for Eligible Practitioners Ohio," September 2010. This survey targeted potentially eligible practitioners for the Medicaid providers to quantify estimates for the EHR provider incentive payment. See Appendix F.
- 2) Key Informant Interviews, August 2010 through October 2010
Interviews with provider organizations were conducted by Ohio Medicaid to better assess current EHR adoption, barriers, and lessons learned. See Appendix A and B.

EHR Adoption – Eligible Hospitals & Eligible Professionals

Key informant interviews conducted August 2010, through October 2010, suggest that some hospitals (estimated to be fewer than half) currently have EHRs and share information internally. Other hospitals are considering EHR adoption, while primarily small and rural hospitals report significant challenges to EHR/HIT adoption. Physicians with hospital affiliations have a greater likelihood of having an EHR system than independent practice physicians and those in major metropolitan areas are increasingly likely to have a hospital affiliation. However, eligible providers in general expressed concern about their ability to meet timetables for meaningful use and feel the pace of change is daunting. Further, some pediatricians and Children's Hospitals voiced concern that certified EHRs may not align with the clinical needs of their patient population.

The Ohio Medicaid Electronic Health Records Survey for Eligible Practitioners was conducted to assess the health information technology (HIT) and health information exchange (HIE) status of medical practitioners in Ohio who serve Medicaid consumers. The survey targeted primary care physicians, specialist physicians, pediatricians, dentists and nurse practitioners/midwives with a Medicaid patient population of at least 200 in a 12 month period. The survey found the following:

- There is a gap between the types of medical practices which have and which are without EHRs. Dentists and specialists rank lowest for EHR use and for future intentions to employ an EHR system in their practice.

- There is a gap in EHR adoption for practices according to practice size, with medium to large practices reporting substantial rates of EHR adoption (the 6 practices noted above 200 practitioners have universal adoption) and small and independent practices having much lower rates of EHR adoption. Referring to literature, the reasons for this gap may be geographical location, limited practice financial resources, availability of practice support personnel, initial loss of productivity, and time constraints that may inhibit EHR implementation.
- The main functional uses of EHR reported are primarily for patient demographics, medication tracking, vital records review, clinical summaries for office visits, patient health information security, clinical visit summaries, electronic prescribing, and administrative functions. Surprisingly, quality control functions and clinical decision functions ranked low for the EHRS respondents – this varies from national findings.
- The main barriers reported to implementing EHR were that systems are too expensive, security and privacy concerns for the practice and patient information, staff being satisfied with paper records processes, and the fear of a lack of interoperability with current computerized systems. Although a major barrier in the EHR literature is productivity decline and time demands for EHR, these reasons were only of moderate concern for the EHRS respondents.

2. To what extent does broadband internet access pose a challenge to HIT/HIE in the State's rural areas? Did the State receive any broadband grants?

Broadband access today, especially in rural counties, remains a challenge to HIT and HIE in Ohio. Ohio's broadband capacity was initiated in 1987 with the Ohio Academic Resources Network (OARnet), a primarily academic-based network which established a fiber optic cable backbone. The challenge remains creating local connectivity from this backbone that will reach providers and households in communities across the state.

In 2007 Governor Strickland issued an executive order that created the Ohio Broadband Council (OBC) to research the overall challenge of broadband capacity for health and other economic development needs. The OBC serves as the coordinating body for Broadband Ohio and has oversight of the network from a policy, procedure, process and development standpoint. The council is led by the Ohio Office of Information Technology (OIT) and OARnet.

In June 2008, Connect Ohio, in partnership with the OBC, was established to deliver on Ohio's digital inclusion goals, one of which is the development of e-health solutions. In December 2009 the Connect Ohio Program Office, under direction of OIT, was awarded \$1.8 million National Telecommunications and Information Administration (NTIA). This project was originally funded for broadband planning activities and two years of data collection. In September of 2010, this project was amended to extend data collection activities for an additional three years and to identify and implement best practices. The amendment was awarded an additional \$5.3 million from ARRA

funding for the Connect Ohio initiative to continue its work through the State Broadband Data and Development (SBDD) program.

With the infusion of new federal broadband dollars into Ohio's Appalachian region in 2010, the access to broadband has been improved. Among hospitals and professional offices in these underserved counties, there now appears to be either good access to broadband or an organized plan to implement. The question becomes one not so much of access now but one of affordability. The broadband dollars have created the network, but the lack of competition for broadband providers leads to expensive utilization, an issue with some of the smaller and more rural practices that do not have alternative options.

The Ohio Middle Mile Consortium (OMMC) formed in February 2010 to integrate three comprehensive community infrastructure applications (Horizon Telcom in southeastern Ohio, GigEPAC Com Net, Inc. in western Ohio, and OneCommunity in northeastern Ohio) for federal stimulus funding under ARRA. These three NTIA-funded projects, coordinated through OARnet are expected to extend the reach of broadband into the currently underserved rural areas of Ohio.

3. Does the State have Federally-Qualified Health Center networks that have received or are receiving HIT/HIEHR funding from the Health Resources Services Administration (HRSA)? Please describe.

Federal grants are assisting in the expansion of new Federally Qualified Health Center (FQHC) clinic sites and improvement of existing clinics sites. \$15M was awarded October 8, 2010 to three Ohio community health centers through PPACA funding. In 2009, ARRA provided Ohio FQHCs more than \$60 million (New Access Points, Increased Demand for Services, Capital Improvement Program and Facilities Investment Program). Specifically, 12 Ohio FQHCs used their Capital Improvement Program (CIP) funding towards a Certified EHR-related purchase. An additional 9 Ohio FQHCs used the CIP funding towards IT/equipment-only purchase (single site or multi-site) with another four using CIP funding for HIT-only purchase (non-EHR equipment). In 2008, approximately \$45 million in federal grant money was distributed to 27 of Ohio's Health Center Networks.

Currently, eight of Ohio's 36 FQHCs have fully implemented CCHIT certified EHRs, with ten additional EHRs planned for adoption and implementation by the end of 2010. The remaining FQHCs anticipate full EHR implementation by 2013. One approach to increase EHR adoption is the Ohio Association of Community Health Center's strategic approach through a health care controlled network, Ohio Shared Information Services (OSIS), that provides centralized IT support on a common, certified platform available to all Ohio FQHC locations. Some FQHCs are pursuing other approaches to implementing their EHRs. This includes several FQHCs in Northeast Ohio that are implementing a hosted EHR system from Oregon Community Health Information Network (O-CHIN).

4. Does the State have Veterans Administration or Indian Health Service clinical facilities that are operating EHRs? Please describe.

Ohio has an extensive Veteran's Administration (VA) health care system that includes 5 VA Medical Centers and numerous outpatient facilities. As with VA facilities nationwide, Ohio's system uses the Veterans Health Information Systems and Technology Architecture (Vista) system for health information exchange. Vista is an integrated system of software applications that directly supports patient care at Veterans Health Administration (VHA) healthcare facilities. It connects VHA facilities' workstations and PCs with nationally mandated and locally adapted software applications that are accessed by end users through a graphical user interface known as the Computerized Patient Record System (CPRS).

There are no Indian Health Service clinical facilities in Ohio.

5. What stakeholders are engaged in any existing HIT/HIE activities and how would the extent of their involvement be characterized?

Ohio Medicaid engaged stakeholders from many areas as soon as the P-APD was approved by CMS. Stakeholders included legislators, other state agencies and entities, providers, provider groups, provider associations, consumer associations and consumer advocates. Ohio Medicaid representatives traveled to Ohio's major cities over the months of August and September meeting with stakeholders. Stakeholders were generous with their time and insight. They also suggested input for consideration. Ohio Medicaid determined the priority of these meetings by focusing on potential EPs and EHs as well as FQHCs. Those groups are vital to leveraging the widespread implementation and to the meaningful use of certified EHR as well as the provision of medical services to individuals expected to be newly eligible under the Patient Protection and Affordable Care Act (PPACA). For more information on the stakeholders and their views please see Appendices B & C.

Also, one of the major partners Ohio Medicaid has for the development and implementation of electronic health records is the Ohio Health Information Partnership (OHIP), a public/private not-for-profit collaborative. OHIP is both the state-designate entity (SDE) for the development of the statewide Health Information Exchange and is the Regional Extension Center (REC) grantee for 77 of Ohio's 88 counties.

Ohio Medicaid also conducted the Ohio Medicaid Electronic Health Records Survey (EHRS) which is presented in full in Appendix F. The survey targeted Medicaid providers that served 200 or more non-duplicative Medicaid patients in 2009, a universe of 8,007 practices, representing an estimated 10,496 practitioners. The survey sampled 4,843 of these provider practices. 937 practices completed the survey, a response rate of 19.4%. The survey's sampling design, with this level of response, allows for the creation of stable estimates of provider practices current EHR status and anticipated actions related to adoption of EHRs and application for Medicaid or Medicare provider incentive payments. The survey took place during a six week period between August 2010 and October 2010

Overall results include:

- (1) The rate of EHR adoption and use is higher for large practices and lower for small and independent practices;
- (2) Functional use of EHR is primarily for billing, patient records, electronic prescriptions, and patient diagnoses assistance;
- (3) The main barriers to implementing EHR are related to financial costs, security concerns, a lack of interoperability with other computer systems, and belief that EHR is unnecessary
- (4) The expansion of EHR among small and independent practices will take thorough outreach – expected to primarily to be in Ohio’s rural areas.

For those providers who reported having EHR, most are located in and around Ohio’s metropolitan areas. Future research will examine the variations for how EHRs are being used throughout Ohio’s geographic regions.

The survey indicates that of the predicted 10,496 medical practitioners who have 200 or more Medicaid patients within their practices, approximately 5,667 or 54% are eligible for the Ohio Medicaid Provider Incentive Program.

The survey details a comparison between the likelihood of applying for either the Medicare and Medicaid incentive programs and reports that a significant amount of practices are uncertain about applying for the Ohio Medicaid Provider Incentive Program (most of these practices being small or independent practices).

Examining eligibility for the Ohio Medicaid Provider Incentive Program by practice type, pediatricians are expected to have the highest eligibility (53.59%), followed by dentists (32.63%), physician specialists (31.30%), nurse practitioners/nurse midwives (25.64%), and primary care physicians (14.75%), respectively.

The total weighted number of practitioners expecting to apply for the Medicaid Provider Incentive Program is 1,708. This number does not count those practices that reported being unsure if they would apply. The survey indicates pediatric practices reported the strongest interest in the Ohio Medicaid Provider Incentive Program for those who meet the patient volume threshold. They were the only provider category where more than 50% of the practices reported planning to apply for the incentive. Just over 30% of specialist and dental practices reported plans to apply, compared to 26% for nurse practitioner/nurse midwife practices and only 15% for primary care practices.

The survey details what types of practices have installed EHRs. Less than half of practices in each category reported an installed EHR. Dental practices reported the lowest rate of EHR installation, 16.84%), with primary care practices reported having the highest proportion (47.54%).

The survey shows the types of automated systems that eligible practices report using. Most practices use office management systems (61.64%). “Point of sale” systems are the least used, usually to implement electronic transfer of funds for services rendered. Literature suggest that

online scheduling options are increasing, but the EHRs respondents are lower for online scheduling than the national average of 31% (National Institutes of Health, 2009).

Literature suggests that the main reasons EHRs are not implemented are EHRs: (1) are too expensive to buy and maintain, (2) raise health record security concerns, (3) are time intensive, and (4) support staff has insufficient knowledge to capability operate EHRs (Bramble et al., 2010; Terry et al., 2009). The Ohio responses roughly follow the literature, but rank the top reasons for not having an EHR as expense, security/privacy concerns, staff satisfaction with a paper-based system, and a lack of computer system interoperability. Given the large amount of independent and small practices in our sample, these reasons might be understandable, as small practices have less resource reserves.

Survey respondents varied in how their practices tend to prescribe medications. Eighty percent did not use any automated system to order medication; while 27.9% use an isolated e-prescribing system, 4.8% use a local computer, and 4.8% use a web-based application. Eighty-seven percent without an EHR system do not use electronic transmission for prescribing pharmaceuticals. On the other hand, 81% of practices with an EHR reported generating and transmitting prescriptions electronically.

Most practices utilize multiple functions of their EHR. The survey identifies the 15 mandatory categories of meaningful use for Stage 1 of the EHR incentive program. The top 6 rankings of meeting meaningful use are patient demographics (100%), safe medication tracking (e.g., keeping aware of allergic reactions) (97.95%), active medication tracking (97.95%), vital record signs and charts (95.10%), clinical summaries for office visits (89.56%), and patient privacy for medical records (89.13%). The categories reflecting the lowest number of providers reporting meeting meaningful use are implementation of one clinical decision (e.g., unified electronic diagnoses) (49.41%), and reporting of clinical quality measures to outside entities (57.55%). All meaningful use categories have relatively high use, except for one of the clinical decision functions. Overall, 27.9% of the Medicaid providers reported with EHRs are using their EHR to meet ALL of the mandatory meaningful use criteria.

Practices report a large variety of EHR vendor systems installed, with no vendor serving a large proportion of the providers. The top five vendors in the market are reported to collectively have a market share of 24.89%.

Almost two-thirds of practices with EHRs (65%) reported not participating with HIEs. For those participating, they were more likely to have a service agreement with an institutional provider (21.38%) or a vendor or intermediary to an exchange service (20.95%). Only 4% reported having an HIE agreement with a non-profit HIO.

The survey compares practices having or not having an EHR by practice types. Overall, most practitioners have either an EHR or are planning to obtain one. For primary care practitioners, 91.5% either have an EHR or are planning to obtain one in the near future. Comparative percentages are 90.1% for pediatricians, 90.2% for nurse practitioners / nurse midwives, 84.9% for specialists, and 45.1% for dentists

According to the survey, a large percentage of practitioners who meet the volume threshold requirements and who have or plan to get an EHR remain unsure if they will apply for the Medicaid provider incentive payment – 54% for those planning to obtain an EHR and 48% for those who already have an EHR. Another 6% of these practitioners who have an EHR report planning not to apply for an incentive payment. These two groups of practitioners appear to be high priority for outreach and education on the incentive payment opportunity.

The survey indicates that there are also practitioners who reported not meeting the patient volume threshold who intend to apply for the Medicaid incentive payment program. These practitioners also appear to be a priority for targeted communication and education on the incentive payment programs, particularly if they would qualify for Medicare.

The survey explores whether the plan to apply for the Medicaid incentive payment varies by practice size. It compares individual and small practices with the other group practices and shows that a higher percent of the individual/small group practices plan to apply for the Medicaid incentive payment and a larger percent of the middle/large group practice are unsure what they will do. A sizeable percent of the individual/small group practice report being unsure what they will do.

6. Does the SMA have HIT/HIE relationships with other entities? If so, what is the nature (governance, fiscal, geographic scope, etc.) of these activities?

The State Medicaid agency is an active participant in the state level health reform and HIT / HIE activities as a member of existing HIT / HIE workgroups sponsored by the Executive Medicaid Management Administration (EMMA). Partners in this effort are:

- Ohio Department of Aging
- Ohio Department of Alcohol and Drug Addiction Services
- Ohio Office of Budget and Management
- Ohio Department of Education
- Ohio Department of Health
- Ohio Department of Job and Family Services
- Ohio Department of Mental Health
- Ohio Department of Developmental Disabilities
- Ohio Department of Insurance

The nature of these efforts is to reduce duplicative efforts and inform other state stakeholders of new initiatives.

More information about EMMA can be found at: <http://emma.ohio.gov/>

7. Specifically, if there are health information exchange organizations in the State, what is their governance structure and is the SMA involved? How extensive is their geographic reach and scope of participation?

Ohio has several primary HIE networks. Most of these networks are hospital-based systems sharing information within their own hospital system. Ohio has four active HIEs: HealthBridge, HealthLink, Collaborating Communities Health Information Exchange (CCHIE), and Appalachian Health Information Exchange (AHIE). These HIEs do not cover the majority of Ohio's providers. According to OHIP, only 48% of hospitals, 23% physician offices and 5% of behavioral health entities are using a primary HIE network in Ohio to facilitate data exchange.

- HealthBridge [<http://www.healthbridge.org/>] is Ohio's most developed and active Regional Health Information Organization (RHIO). Formed in 1997, HealthBridge is a non-profit community-based organization that provides services in southwest Ohio, northwest Kentucky, and southeast Indiana. According to HealthBridge, it provides connectivity to more than 28 hospitals, 5,500 physician users, 17 local health departments, 700 physician offices and clinics, as well as nursing homes, independent labs, and radiology centers. Its clinical messaging system delivers around 3 million clinical messages to 5,500 physicians each month.
- HealthLink Miami Valley at Wright State University (<http://www.med.wright.edu/healthlink/>) is a community-based exchange that promotes universal access and care coordination to the uninsured and marginally insured in the Greater Dayton Region to value-driven health care, including the enhancement of a community-wide information network.
- The Clark/Champaign counties' Collaborating Communities Health Information Exchange (CCHIE) is a community-based exchange formed in 2008 to serve the Springfield Ohio area. Currently over 50% of the Springfield area physicians participate in CCHIE. CCHIE sends over 60,000 laboratory and radiology results per month. CCHIE works through a collaboration agreement with HealthBridge.
- The Appalachian Health Information Exchange at Ohio University (AHIE) [<http://www.rhiohio.org/>] is a voluntary association of health care providers in Southeastern Ohio that seeks to develop an advanced integrated health information technology system to improve the wellness of individuals, families and communities. AHIE formed in January 2008. Twenty organizations, mostly area hospitals, are involved in the voluntary association.

Ohio Medicaid is not formally involved in any of these local HIE activities. Ohio Medicaid has maintained active dialogue with HealthBridge and is engaging in dialogue with the other Ohio HIEs.

8. Please describe the role of the MMIS in the SMA's current HIT/HIE environment. Has the State coordinated their HIT Plan with their MITA transition plans and if so, briefly describe how.

Ohio is currently transitioning its legacy Medicaid Management Information System (MMIS) into a new Medicaid Information Technology Architecture (MITA) compliant system. Ohio's Medicaid Information Technology System (MITS) is scheduled to "go live" soon. It features an environment that is flexible and has reusable components. The MITS system is designed to integrate with the current ODJFS data warehouse and Decision Support System. Ohio Medicaid contracts for CyberAccess, which is a HIPAA-compliant Internet portal for providers to access pharmacy information regarding their patients.

Ohio Medicaid will gain experience with MITS which is intended to take the Agency to MITA Maturity level 3. We are planning to coordinate the HIT system with the MITS/MMIS effort after the stabilization and certification periods are complete for the new MMIS.

9. What State activities are currently underway or in the planning phase to facilitate HIE and EHR adoption? What role does the SMA play? Who else is currently involved? For example, how are the regional extension centers (RECs) assisting Medicaid eligible providers to implement EHR systems and achieve meaningful use?

Ohio has two federal REC grantees, OHIP and HealthBridge. Medicaid works closely with both to coordinate efforts to educate health care providers.

The Ohio Health Information Partnership (OHIP) is a public/private not-for-profit collaborative formed in 2009 as a partnership among the state of Ohio, BioOhio (Ohio's high tech state development entity), the Ohio State Medical Association (OSMA), the Ohio Hospital Association (OHA), and the Ohio Osteopathic Association (OOA). The purpose of OHIP is to advance health information technology within Ohio's hospitals and health care providers. OHIP is both the state-designate entity (SDE) for the development of the statewide Health information Exchange and is the Regional Extension Center (REC) grantee for 77 of Ohio's 88 counties. OHIP's structure has the REC services being delivered through regional partners in seven geographic regions around the state. These collaboratives—joining hospital, physician groups and universities—allows OHIP to do outreach to many physicians and hospitals around the state. OHIP's regional partners have held dozens of information outreach sessions since June, 2010, educating health care providers not only to the Medicare and Medicaid EHR incentive programs, but also to the development of health information exchanges in their regions, in the state and nationally. Medicaid has presented at two statewide information sessions sponsored by OHIP to discuss the development of the Medicaid EHR incentive program in Ohio. It is anticipated that Medicaid will participate in several more of these sessions once the final structure of the program has been established. "

HealthBridge also does outreach to physicians and hospitals in the Cincinnati community and outlying region (11 counties), as well as in parts of Indiana and Kentucky. Because of their status as an existing HIE, they can leverage their existing contacts to assist in the education and outreach to

physicians and hospitals. Medicaid has also participated in education and outreach to the HealthBridge community.

To better understand the status of HIE in Ohio, OHIP conducted a 2010 HIE survey which is more fully documented in the OHIP HIE State Plan. HIEs surveyed vary in the type of data exchanged and the extent of overall data being exchanged. Surveyed entities including Healthbridge (Cincinnati), CCHIE (Springfield), Better Health Greater Cleveland, HealthLink (Dayton) and AHIE (Southeastern Ohio).

Ohio Medicaid’s current priority activities are focused on bringing up the provider incentive payment program. Current Ohio state-level HIE and EHR adoption activities include the following:

- Constructing the federally required SMHP and I-APD to enable to establishment and implementation of the Ohio Medicaid Provider Incentive Payment program.
- Exploring targeted support activities for provider adoption of EHR in rural and urban locations. Ohio Medicaid is also exploring targeted support activities for providers who are successful in A/I/U but who do not return in subsequent years for MU.
- Exploring joint efforts with the Ohio HIE grant award winners to look at solutions like record locator, entity indexing, and provider indexing.

Summary of HIE Services by Existing HIO’s in Ohio

Service Provided	Selectively Provided	Often Provided	Always Provided
Master Patient Index (within their exchange)			X
Electronic Lab Ordering			X
Electronic Lab Resulting			X
Manual delivery of non-electronic results (via fax or print)	X		
Discrete Lab Results integration with EHR		X	
e-Prescribing		X	
Eligibility Verification		X	
Exchange of Clinical Patient Summaries	X		
Syndromic Surveillance	X		
Reportable Disease Routing	X		
Quality Reporting	X		
Personal Health Record (consumer access)	X		
Electronic Medical Record (lightweight version)	X		
Medical Evidence Transmittal (SSA data transmission via NHIN)	X		

10. Explain the SMA’s relationship to the State HIT Coordinator and how the activities planned under the ONC-funded HIE cooperative agreement and the Regional Extension Centers (and Local Extension Centers, if applicable) would help support the administration of the EHR Incentive Program.

Ohio’s State HIT Coordinator is located at the Ohio Department of Insurance which is the cabinet level lead agency for HIE. Ohio’s State HIT Coordinator has a leadership role on the Board of the

Ohio Health Information Partnership. Ohio Medicaid works closely with its two RECs, OHIP, and HealthBridge to mutually support each other's work. Ohio Medicaid is moving forward the EHR program and optimizing input through communication and outreach opportunities provided by OHIP and ODI. OHIP is allocating its REC work to seven Regional Partners (RPs).

As the Medicaid incentive program is defined for Ohio, the RECs will produce specific educational flyers about the Medicaid program and how to qualify. The RECs are providing individual outreach to the FQHCs and the local health departments to keep them apprised of Medicaid developments. Recently, OHIP and HealthBridge, in conjunction with the Ohio Department of Health, sponsored an educational webinar for the local health departments, health commissioners and RECs to establish key contacts in each of these areas. OHIP has also established a behavioral health committee to work with the behavioral health community around the state and support their needs in the adoption of EHR technology.

11. What other activities does the SMA currently have underway that will likely influence the direction of the EHR Incentive Program over the next five years?

Ohio Medicaid sees the EHR Incentive Program as a means to promote the IOM goals of developing a safe, effective, efficient, person-centered, quality, health system. The greater adoption of HIT and exchange of health information will enhance Ohio existing and anticipated efforts to achieve these outcome goals and to be a value-based purchaser of health services. Ohio Medicaid has several value-based activities already underway. These efforts include its Emergency Department Diversion project, Medicaid payment reform, Best Evidence for Advancing Childhealth in Ohio Now Council, and e-prescribing, as well as participating in the Ohio Healthcare Coverage and Quality Council's avoidable hospital readmission and multi-payer enhanced primary care home initiatives.

These activities require an enhanced decision support system at Medicaid and the exchange of relevant health information to promote value-based decisions. They will influence the type of information that Ohio Medicaid seeks through exchange and the partnerships and strategies that Ohio Medicaid pursues to promote the adoption of EHRs and the exchange of health information.

Multiple children's health initiatives are occurring under the auspices of a multi-agency and private sector collaboration Best Evidence for Advancing Childhealth in Ohio Now Council. This effort is Ohio's statewide collaboration among individuals and organizations that seek to encourage measurable improvements in children's health care and outcomes through improvement science. The focus on children's health quality, outcomes measurement and research, coupled with an existing data sharing infrastructure presents a unique opportunity to seek input/guidance related to the Medicaid HIT Plan.

12. Have there been any recent changes (of a significant degree) to State laws or regulations that might affect the implementation of the EHR Incentive Program? Please describe.

There have not been any recent changes to state law or regulation that might effect the implementation of the EHR Incentive Program.

13. Are there any HIT/HIE activities that cross state borders? Is there significant crossing of state lines for accessing health care services by Medicaid beneficiaries? Please describe.

HealthBridge provides HIE services in parts of three states: Ohio, Kentucky, and Indiana. It is the only Ohio-based HIE that crosses state borders. HealthBridge received a \$13.8 million Beacon Community cooperation agreement in September 2010 to further enhance the use of technology and collaboration among providers in the greater Cincinnati region.

Ohio has five border states; Michigan, Pennsylvania, Indiana, West Virginia, and Kentucky. Some Ohio Medicaid consumers visit providers in all of these states. Medicaid consumers from all of these states visit Ohio providers. ODJFS has information on Ohio Medicaid consumers but very little data on other states' Medicaid populations.

14. What is the current interoperability status of the State Immunization registry and Public Health Surveillance reporting database(s)?

Ohio's statewide Immunization Information System, ImpactSIIS, is a secure, web-based information system managed by the Ohio Department of Health. ImpactSIIS contains over 41 million vaccination records for nearly 9 million Ohioans. Immunization records are directly entered by participating providers via a web portal, as well as imported from other electronic sources (e.g., local immunization registries, electronic health record systems, Medicaid claims data) using HL7 v2.5.1. ImpactSIIS has many beneficial features, such as the ability to generate immunization reminder notices, forecasting when immunizations are due and managing vaccine inventory. According to ODH, using ImpactSIIS has been recognized as a key factor in making Ohio's immunization program rank 3rd in the nation. In September 2010, Ohio moved to the new ImpactSIIS 2.0 that will interface with many of the EMR solutions currently on the market.

According to ODH, Ohio has built a critical planning and response personnel infrastructure for most preparedness initiatives. A robust and redundant communication system which is interoperable with other state response partners, hospitals, and local health departments has been implemented entirely with funding from the cooperative agreement with the Centers for Disease Control and Prevention (CDC).

The Ohio Disease Reporting System (ODRS), Ohio's information system for infectious disease surveillance, was enhanced in 2007 to allow for electronic lab reports (ELR) for communicable diseases to flow seamlessly from labs into ODRS. Although several other states are receiving ELR data from labs, Ohio is one of only a handful of states that have automated this process. Approximately 40,000 ELR reports were received and directed into ODRS in 2009, with over 75,000 electronic reports estimated for 2010. Roughly 85% of these disease reports flowed directly into ODRS without manual intervention – either creating a new person and disease report, a new disease report for a person already in ODRS, or adding new information to an existing disease report already in ODRS.

Participating ELR facilities currently include several regional labs (ARUP, LabCorp, Quest Cincinnati and Mayo Clinic), several state agency affiliated labs (Corrections Medical Center and ODH), as well as many labs within the Cleveland Clinic hospital system and hospital labs at Western Reserve Care and MetroHealth.

ARRA funding will allow for extending the ELR to several additional hospital labs in the coming year, including a pilot project to accept electronic reporting of health care-associated infections. The pilot project will enable ODH to receive HL7 v.2.5.1 messages, in addition to current HL7 v.2.3.1.

Ohio has an active syndromic surveillance system for detecting, tracking and characterizing health events. The system currently includes 154 participating facilities (145 hospitals and 9 urgent care centers), which represents 84% of the hospital emergency departments in Ohio, and 94% of all emergency department visits. The system is accessible to all local health departments, with 189 local health department users, 185 hospital users, and 9 ODH users, as well as several users from Kentucky and the poison control centers.

The CDC invited ODH to establish a direct connection to the NHIN. The CDC will cover all costs for this project. Ohio would become one of only a few states to connect with NHIN and will facilitate the exchange of public health information among Ohio, CDC, other participating states (currently Indiana, Washington and New York) and other entities in a secure and standardized manner. This would assist the statewide HIE in establishing NHIN protocols and provide a more immediate pathway for providers in Ohio to meet meaningful use requirements for public health reporting.

SECTION B: The State's "To Be" Landscape

- 1. Looking forward to the next five years, what specific HIT/HIE goals and objectives does the SMA expect to achieve? Be as specific as possible (e.g. the percentage of eligible providers adopting and meaningfully using certified EHR technology, the extent of access to HIE).**

Over the next few years, Ohio Medicaid will continue its focus on cost containment, program affordability, and high quality care for covered Ohioans. Specifically this goal will be met by program objectives to:

- A. Improve Quality, Safety, Efficiency, and Reduce Health Disparities
- B. Engage Patients and Families
- C. Improve Care Coordination
- D. Ensure Adequate Privacy and Security Protection for Personal Health Information
- E. Improve Population and Public Health

To implement this vision Ohio Medicaid will assist in the development and implementation of HIE and EHR. Ohio Medicaid will modify existing support capacity and will build internal infrastructure to support HIE and EHR, including clinical quality decision support, consumer quality decision support, clinical repository, and enhanced Audit, Fraud, Waste and Abuse data support.

These goals and objectives are the product of ODJFS' commitment to improve the health of its members and the financial health and viability of the program, and to influence the overall quality of healthcare throughout the state by encouraging the adoption and meaningful use of certified EHR technologies and HIE.

To establish specific goals and objectives for HIT / HIE adoption and meaningful use, Ohio Medicaid is undertaking a range of activities including continuing Key Informant sessions, meeting so far with more than 100 professionals throughout the state of Ohio health care sector. This continuing process is aimed to gather insight from a broad range of health care professionals and consumers on topics including but not limited to:

- EHR readiness, including an identification of benefits (reducing inappropriate duplicative payments and procedures; increasing safety and quality of care, etc.)
- Awareness of incentive payment programs
- Meaningful use criteria and clinical quality measures
- Exchanging information with patients and families

- Multi-state issues
- Health care reform and related issues

Stakeholder feedback has helped us identify MPIP program structure concerns both for infrastructure and clinical quality and meaningful use reporting. The table below provides a summary of program challenges and motivators.

Summary of Program Challenges and Motivators identified by Stakeholders

Inhibitors	Enhancers
<ul style="list-style-type: none"> • Lack of information about: <ul style="list-style-type: none"> ○ Differences between the Medicare and Medicaid EHR programs, ○ Whether professionals qualify, and type of organization implications for incentive, ○ EHR cost, and incentive amount, timing and process, ○ Verifying Medicaid patient volume in and out-of-state, ○ When and how will incentives be issued, and ○ Privacy and security requirements. • Decreased productivity and revenue through the implementation and startup phases • Staged meaningful use requirements – what is required when? • Rapid change and competing demands – financing and timing 	<ul style="list-style-type: none"> ▪ Practice size – larger hospitals and ambulatory practices are more confident that they will be eligible and meet requirements ▪ Readily available web-accessible information about program ▪ Scenarios clarifying provider eligibility, and patient volume requirements incentive payment process for: <ul style="list-style-type: none"> ○ Physician practices ○ FQHCs and rural health clinic practices ○ Hospital staff relationships – employees, contractors ▪ Customer service through the entire process from qualification, help desk and incentive payment ▪ Standards for exchange of information and transparency of quality information across public and private sectors ▪ EHR adoption and use as part of a larger health care quality, program affordability and reform process – pay for value, not volume

In addition to the Key Informant Sessions, Ohio Medicaid has completed a survey of providers. See Appendix F. The survey provides data to begin to benchmark the current state of EHR adoption and allows us to glean additional insight into factors that are likely to inhibit or enhance EHR adoption and use throughout the state.

Also, based on our review of the literature, we have determined that the “Technology Adoption Curve” may provide a tool to project EHR adoption trends. Ohio Medicaid will explore the use of this tool. Please see Appendix D for more information.

2. What will the SMA's IT system architecture (potentially including the MMIS) look like in five years to support achieving the SMA's long term goals and objectives? Internet portals? Enterprise Service Bus? Master Patient Index? Record Locator Service?

Ohio Medicaid has determined the need for development of the following technological capabilities in order to support MPIP program in Year One:

- **Secure web capability** - for multiple types of exchange with the National Level Repository (NLR), and for provider attestation and incentive payment support.
- **Incentive Payment System** - a database with workflow and business rule capabilities. ODJFS is analyzing the functionality needed to support the program and then will determine whether to buy or build this functionality. In this component, Ohio Medicaid needs the capability to receive and send secure transactions, develop e-forms that can be pre-populated based on input from a variety of interfaces, extract provider and claims data, provide claims count and verification using data from multiple sources, confirm presence or absence of matching provider data within range of system extracts and databases, provide automated e-notifications and alerts, process workflow utilities, calculation payment based on data from multiple interfaces.
- **Interfaces** - ODJFS has identified the need to build interfaces with several state systems or databases, including but not limited to; provider database, the Inspector General's exclusion list, SSA death list, and the OAKS, the State's Financial Information System.

ODJFS has also determined the need for development of the following technological capabilities in order to support the Incentive program in Year Two and Three:

- **Clinical Quality Decision Support System (QDSS)** - Decision Support System with clinical focus capable of a broad range of clinical measures, supporting data from EHR, claims, encounters and other sources.
- **Clinical Data Repository** - Relational database system storing at a minimum EHR, clinical, provider, consumer, and claims data.
- **Clinical Data Portal** - Secure data portal for exchange of health record information and other clinical data.
- **Consumer Quality Decision Support** - Web enabled access for Medicaid consumers to access personal electronic health records and potentially determine the width and breadth of information to be made available.
- **Audit and Oversight Decision Support** - Decision Support System with fraud, waste and abuse focus capable of a broad range of fraud, waste and abuse detection algorithms. Relational database system storing at a minimum EHR, clinical, provider, consumer, and claims data.
- **Automated registry updating for Ohio Department of Health** - Ohio Medicaid will explore automated updates of ODH registries and other data sharing opportunities that accelerate

the adoption and meaningful use of EHR including processes that may ease the burden of manual reporting for Medicaid providers.

- Master Entity Index, Master Patient Index & Record Locator Service** – ODJFS will, with OHIP and other cabinet level health care agencies explore the opportunity to partner and build essential business functions that accelerate the adoption of EHR and the expansion of HIE such as Master Entity Index, Master Patient Index and Record Locator Service. All financing approaches would be subject to applicable OMB circulars, including OMB A87 and 133.

As described above, ODJFS is in the final stages of implementing the Medicaid Management Information System (MMIS) with a Medicaid Information Technology Architecture (MITA) aligned system called MITS. This system has been in design, development and implementation stages since 2004 and is scheduled to move into production in early 2011. To fully support a system test and transition from implementation to production and prepare for certification, ODJFS has no plans to directly interface MPIP with the MITS system during the first year of the EHR Incentive program. MITS will include portal and enterprise service bus middleware capabilities, which may be leveraged for this program in the latter phase of the system lifecycle.

Additionally, the Stage 2 Meaningful Use measures are still in development by the HIT Policy Committee, Meaningful Use Workgroup. In table B-3 below, we have listed the Stage 2 measures that we believe are currently under consideration by the workgroup.

Stage 2 Meaningful Use Measures Under Consideration

Meaningful Use Objectives	Stage 2 Measures <i>Under consideration by the HIT Policy Committee, Meaningful Use Workgroup</i>
1. Improving Quality, Safety, Efficiency & Reducing Health Disparities	1. CPOE for all orders 2. Use evidence-based order sets 3. E-prescribing discharge prescriptions (EH) 3.1. Stratified electronic CQM reporting by disparity variables 3.2. Stratified electronic CQM reporting by disparity variables 4. Use CDS at point of care (e.g., reminders, alerts) 5. Record advance directives (EP) 6. Manage chronic conditions using patient registry lists 7. Document progress note (EP) 8. Record all clinical documentation in EHR (EH) 9. Record family history 10. Use patient-specific care plans 11. Specialists report to external disease registries 12. Conduct closed loop medication management (EH)

Meaningful Use Objectives	Stage 2 Measures <i>Under consideration by the HIT Policy Committee, Meaningful Use Workgroup</i>
2. Engage Patients and Families	<ol style="list-style-type: none"> 1. Provide timely electronic access (EH) 2. Patient-specific education resources in many languages 3. Patient-provider secure messaging 4. Record patient preferences (e.g., communication media, proxies, treatment options) 5. Incorporate patient-generated data (e.g., devices)
3. Improve Care Coordination	<ol style="list-style-type: none"> 1. Perform medication reconciliation at every care transition 2. Produce & share summary care record for every care transition 3. Retrieve & act on e-Prescribing data
4. Improve Population and Public Health	<ol style="list-style-type: none"> 1. Bidirectional immunization data 2. Bidirectional surveillance and laboratory data
5. Ensure Adequate Privacy and Security Protections for Personal Health Information	<ol style="list-style-type: none"> 1. Use summarized/de-identified data for population health purposes

Finally, ODJFS participates with its sister state agency, the Ohio Department of Insurance (ODI) in the evaluation work of the PPACA Health Insurance Exchange. A Stakeholder Task Force has been established to advise on whether and how to establish a Health Care Insurance Exchange. This Task Force is a collaborative effort of ODI and OHP/ODJFS. Because of PPACA, Ohio Medicaid anticipates a substantial increase in new eligibles beginning in 2014. This influx of new Medicaid members will introduce challenges and opportunities in the current state eligibility and enrollment processes and systems. To both more fully align with the MITS member services business systems and address the business needs that are critical to health care reform, ODJFS believes there will be a need to modernize and simplify Ohio's eligibility policy framework. Ohio Medicaid currently has more than 160 eligibility categories. Current projections estimate that Ohio may have more than an additional 500,000 persons eligible for Medicaid coverage by 2014. The current system that supports Medicaid eligibility is the CRIS-e Active system, which is a nearly 20 year old, hard coded, legacy system that is difficult to configure and very complex to change and keep current.

The CRIS-e system supports a variety of Ohio's entitlement programs including but not limited to TANF and SNAP. Often changes in one program impact another program, particularly due to technology and coding restraints. Many Medicaid eligibility requirements can only be executed in the system by "fiat", or manual intervention by a case worker. Recently the CMS announced potential assistance for states to provide a seamless enrollment experience for individuals who shop for health insurance through Exchanges, including for individuals who will be determined to be eligible for Medicaid. CMS will make available new 90/10 federal funding for States to streamline and upgrade their eligibility for Medicaid systems in preparation for the changes resulting from the Affordable Care Act in 2014.

3. How will Medicaid providers interface with the SMA IT system as it relates to the EHR Incentive Program (registration, reporting of MU data)?

It is expected that Ohio Medicaid eligible providers, including eligible professionals and hospitals, will register their intent to participate in the Medicare or Medicaid EHR Incentive Program through the NLR. If the provider selects and is eligible for the Medicaid EHR Incentive Program, the NLR will electronically transmit data from the national system to the State's MPIP system. ODJFS will inform the provider of receipt of the request for incentive payment program participation and direct them to the a secure web portal to provide an attestation and more information necessary for establishing appropriate criteria for the incentive payment program. See Section C for more detail.

4. Given what is known about HIE governance structures currently in place, what should be in place by 5 years from now in order to achieve the SMA's HIT/HIE goals and objectives? While we do not expect the SMA to know the specific organizations that will be involved, etc., we would appreciate a discussion of this in the context of what is missing today that would need to be in place five years from now to ensure EHR adoption and meaningful use of EHR technologies.

As discussed in preceding sections, governance for the Ohio Medicaid EHR Incentive program will have to involve at least three components. The first involves the governance of the EHR Incentive program itself. ODJFS has primary responsibility for the administration of this program. The chief challenge here will be how to manage the program within the competing priorities for the Medicaid program and managing with their customers – eligible professionals and hospitals.

The second component will be how the technical infrastructure is designed, developed and administered within ODJFS. Ohio's Medicaid program is part of a larger human services department with responsibilities including employment and family services. The Ohio Medicaid program is a customer of the internal Office of Information Services. As with most governmental programs, these shared internal resources are, by their nature, limited and are challenged to meet the overall scope of the varying program needs. Accordingly, a governance process needs to be established to guide organizational decisions regarding the use of constrained resources in such a way that provides the greatest benefit.

Finally, the EHR Incentive program will need to continue to collaborate and communicate with the state level Health Information Exchange Cooperative Agreement program and the Regional Extension Centers (RECs). In Ohio, OHIP is facilitating communication across these organizations.

5. What specific steps is the SMA planning to take in the next 12 months to encourage provider adoption of certified EHR technology?

Specific steps Ohio Medicaid will take in the next 12 months to encourage technology including:

- All efforts required to bring up MPIP including: program design; technical infrastructure; policy/rule authority; informal/formal appeals structure; outreach; training; communication, etc.
- Continued work with outreach partners such as OHIP, their Regional Partners and statewide provider associations, to encourage MPIP program participation and the meaningful use of certified EHR systems.
- Ohio Medicaid has new and existing staff employed to implement MPIP including the promotion and adoption of certified EHR systems in the Medicaid healthcare delivery system. Staff competencies and assignments areas include:
 - IT Infrastructure
 - Medicaid Provider interface and program oversight (EP, EH, FQHC).
 - Regulatory program components (policy, rules, appeals).
 - Outreach, technical support, communications

6. If the State has FQHCs with HRSA HIT/EHR funding, how will those resources and experiences be leveraged by the SMA to encourage EHR adoption?

The Federally Qualified Health Centers (FQHCs) are well on their way to implementing EHRs in all of the FQHC sites in Ohio. The Ohio Association of Community Health Centers estimates that there are more than 500 eligible professionals who currently qualify for the EHR incentive program, and that as many as 75% of them will submit an application to the MPIP program during the first year of implementation. This volume of potential EP participation has already encouraged a significant exchange of ideas and insight that is reflected in the construction of this document.

7. How will the SMA assess and/or provide technical assistance to Medicaid providers around adoption and meaningful use of certified EHR technology?

To establish a baseline estimate of EHR adoption, ODJFS used a mixed mode (internet/paper) stratified random sample of eligible professionals who are high volume Medicaid providers. This yielded a sample of 271 respondents per strata, and a sample of 1,351 providers overall

Ohio Medicaid has a dedicated unit to manage the MPIP program. This unit will oversee the overall program and provide technical assistance to Medicaid providers. Ohio Medicaid has new and existing staff employed to implement MPIP including the promotion and adoption of certified EHR systems in the Medicaid healthcare delivery system. In addition, following program implementation, Ohio Medicaid will monitor the level of program participation by monitoring providers and the level

and extent of meaningful use including, but not limited to, meaningful use reporting and data exchange.

ODJFS works with the Ohio Department of Health, the State Board of Regents, Children's Hospitals and other entities on a variety of health quality improvement activities. Many of these providers are anticipated to be early applicants to the MPIP program and are expected to continuously leverage and advance their health quality work with their emerging EHR, MU and interoperability functionality.

8. How will the SMA assure that populations with unique needs, such as children, are appropriately addressed by the EHR Incentive Program?

Ohio Medicaid has identified that children, at a minimum, and disabled adults are populations with unique needs that must be addressed by the EHR incentive program.

In particular, the child health collaborative, Best Evidence for Advancing Childhealth in Ohio Now is a statewide collaborative of Ohio individuals and organizations seeking to encourage and support initiatives that produce measurable improvement in children's health care and outcome. The Collaborative is developing and aligning successful strategies to improve children's health care. EHR and the rapid analysis of intervention and treatment approaches are fundamental to the work of this Collaborative.

The Collaborative began through a grant from the National Academy for State Health Policy to develop outcomes for young children. The project evolved into an ongoing collaborative with series of improvement projects, and the support of a state-level governance council. The BEACON Governance Council is co-chaired by Dr. Alvin Jackson, Director of the Ohio Department of Health and Dr. Mary Applegate, Medical Director, Ohio Health Plans.

The Collaborative is comprised of a range of stakeholders, including:

- State Departments of Health, Mental Health and ODJFS' Medicaid Program.
- Ohio Chapters of the National Alliance for the Mentally Ill, Voices for Ohio's Children, the American Academy of Pediatrics,
- Ohio Children's Hospital Association, and the six children's hospitals throughout Ohio; and
- Ohio research universities including The Ohio State University, Case Western Reserve University/Rainbow Babies and Children, and the Child Policy Research Center at Cincinnati Children's Hospital.

The Collaborative focuses on children's health quality, and outcomes measurement. The Collaborative expressed interest in working with Medicaid on the development of the SMHP and the EHR Incentive Program. They are currently at work on a project that is jointly funded by Ohio Medicaid and the Ohio Department of Health to support quality improvement for ambulatory care providers, childhood obesity initiatives with 15 FQHCs, and 50 pediatric practice sites that may be

leveraged to all FQHCs and pediatric practices using EHRs to gather and exchange quality measures on Body Mass Index. In addition to the requirements and opportunities contained in the Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) for quality improvement, the Collaborative is exploring other projects that may leverage HIE capabilities for the private, secure exchange of secondary data for quality improvement in children's healthcare.

Other Collaborative initiatives include Solutions for Patient Safety (hospital), the Ohio Perinatal Quality Collaborative (initially funded by a Medicaid Transformation Grant), the Ohio Pediatric/Psychiatric Decision Support Network, a quality improvement collaborative for obesity and autism and developmental screening.

The following highlight a few of the perinatal efforts that are occurring under the BEACON Council QI initiatives:

- Ohio's Transformation grant initiated the Ohio Perinatal Quality Collaborative (OPQC) in 2007. State partners include: the OPQC Executive Committee, co-chaired by Jay Iams, MD, and Edward Donovan, MD, and the OPQC Steering Committee representing practitioners, policy makers, insurers and parents, the Center for Health Care Quality and the Child Policy Research Center at Cincinnati Children's, the Ohio Department of Health's Vital Statistics and Regional Perinatal Center programs, the National Initiative for Child Healthcare Quality (NICHQ), and the Ohio Department of Job and Family Services.
- Forty-five clinical teams from 25 Ohio hospitals are participating in the first 'Breakthrough Series' learning collaborative. 24 NICU teams are working to decrease catheter associated infection in infants 22-29 weeks gestation. 21 OB teams are endeavoring to decrease scheduled deliveries between 36 and 39 weeks gestation.
- Ohio is working with and learning from a number of other states engaged in statewide perinatal improvement efforts. California, North Carolina, Tennessee, Massachusetts, New Jersey, Arkansas, New York, Michigan and Illinois already have or are developing statewide collaborative to improve birth outcomes. While Ohio was not awarded a CHIPRA grant, its BEACON planning team continues to work together to promote the aims of Ohio's proposal.

9. If the State included in a description of a HIT-related grant award (or awards) in Section A, to the extent known, how will that grant, or grants, be leveraged for implementing the EHR incentive Program (e.g. actual grant products), knowledge/lessons learned, stakeholder relationships, governance structures, legal/consent policies and agreements, etc.)?

Ohio's HIT-related grant awards are aimed at increasing broadband access and building capacity for sharing data. Some of the lessons learned are the need for ongoing funding, as time-limited grant funding is not sufficient to support these activities. In addition, broadband capacity is not enough for providers to adopt HIT. There need to be other compelling reasons and strategies (how to

incentivize a broader range of provider groups, overcoming implicit productivity and other implementation issues for example) to leverage widespread adoption and use.

10. Does the SMA anticipate the need for new state legislation or changes to existing state laws in order to implement the EHR Incentive Program and/or facilitate a successful EHR Incentive Program (e.g., State laws that may restrict the exchange of certain kinds of health information)? Please describe.

Ohio Medicaid is evaluating this. Particularly if all payment year one Medicaid program participants can apply solely through the federally permitted adopt, implement or upgrade option, there may not be a need for legislative change to support payment year one implementation.

SECTION C: The State's EHR Incentive Program

1. How will the SMA verify that providers are not sanctioned, are properly licensed/qualified professionals?

All eligible hospitals and eligible professionals must have a National Provider Identifier (NPI) and CMS Certification Number (formerly known as OSCAR) to participate in the EHR incentive program. Most providers also need to have an active user account in the National Plan and Provider Enumeration System (NPPES). CMS will use these systems' records to register for the program and verify Medicare/Medicaid enrollment prior to making EHR incentive program payments.

The State Medicaid Agency currently maintains the Medicaid provider information necessary to facilitate the process to approve or disprove providers' eligibility to participate in the Medicaid program. Ohio Medicaid will use this data, along with the sanctioning data in the Excluded Parties List System (EPLS) (<https://www.epls.gov/>), to verify the provider is not sanctioned. Ohio Medicaid will verify providers against the Social Security Administration death list (<http://www.ntis.gov/products/ssa-dmf.aspx>). Ohio Medicaid will also verify providers are licensed and qualified Eligible Professionals with various outside entities, such as the state Medical and Nursing Boards of Licensure. Finally, in addition to the death list and exclusion list, both the NLR and Medicaid Provider Subsystem include excluded providers.

2. How will the SMA verify whether EPs are hospital-based or not?

Ohio Medicaid will allow the provider to attest to the place of service percentage of the services provided that are used for the purposes of meeting the patient volume requirements to satisfy the hospital based federal guidelines. The provider must attest that less than 90% of the EP's services are performed in a hospital inpatient or emergency room setting, to verify hospital based provider qualifications. The attestation process will be incorporated with the registration developed for use with the web-portal and will include instruction for reporting patient volume statistics.

The foundation of this approach is the attestation statement where the EP self-reports a calculation with the numerator (total number of Medicaid patient encounters over a continuous 90 day period from the previous calendar year) and denominator (total number of patient encounters) over the same 90 day timeframe. EPs will have to attest to not being hospital based. Additionally, to being part of the registration process, attestations will serve as a resource for auditing protocols to assure the program integrity of MPIP.

3. How will the SMA verify overall content of the provider attestations?

For consistency and ease of use, Ohio Medicaid will develop an attestation template that EPs and EAs will use to assert that they have satisfied AIU criteria for initial payment year one participation in MPIP. ODJFS will require the provider to enter relevant content into the attestation template.

4. How will the SMA communicate to its providers regarding their eligibility, payments?

Ohio Medicaid will receive a file from the NLR which contains the providers who have requested incentive payments from Ohio Medicaid. Ohio Medicaid will use the email address contained in the file from the NLR to communicate to the provider that Ohio Medicaid has received the application for incentive payment. Ohio Medicaid will instruct the provider to use a web-portal that all Medicaid eligible providers will utilize for incentive payment requests and communications. To ensure authentication for the provider, Ohio Medicaid will establish secure communication protocols through the Ohio Medicaid web-portal with restricted access based on the provider profile. Ohio Medicaid will also conduct seminars and training with providers to share information about the program.

5. What methodology will the SMA use to calculate patient volume?

Ohio Medicaid will adopt the formula described at §495.306 Subsection (c) based on total reported patient volume, patient mix, and historical activity. Ohio's patient volume calculation based on FR 495.306 (c) utilizes a count of Medicaid encounters. This approach does not rely on Medicaid Managed Care Plan provider panels. Medicaid consumers served by Medicaid Managed Care Plans are instead included in the patient volume calculation using the encounter approach. It is also important to note that because Ohio has a combined Medicaid/SCHIP program, providers will not be required to distinguish between SCHIP eligibility and Medicaid eligibility. Therefore Ohio's patient volume calculation will include SCHIP. For all eligible professionals except for pediatricians, Acute Care Hospitals and Children's Hospitals, the minimum patient volume threshold is 30 percent; for pediatricians, it is 20 percent, for Acute Care Hospitals 10 percent and for Children's Hospitals no volume threshold is required.

In addition to other program participation criteria, program applicants must attest that patient volume counts are based on and substantiated by records documenting experience at a practice site operating under a Medicaid Provider Agreement valid for the period of time represented by the provider's attestation. Program applicants will be required to identify and attest to the sites for which the provider claims Medicaid patient volume requirements are met. Regardless of the number of eligible sites the applicant practices at, the program applicant may choose all, some or one practice site upon which to calculate patient volume.

Ohio Medicaid will not permit EPs in group practices or clinics to aggregate patient volume counts across multiple EPs. Individual EPs are permitted to choose to aggregate their own patient volume experience over all, some, or one practice site if the EP practices in more than one location.

Eligible professionals practicing at FQHCs/RHCs must demonstrate that more than 50 percent of their clinical encounters occurred at an FQHC/RHC over a six-month period, and that they had a minimum of 30%, or 20% in the case of pediatricians of their patient volume from needy individuals.

“Needy individuals” for purposes of determining MPIP patient volume are those individuals covered by Medicaid including the State Children’s Health Insurance Program (SCHIP), who are furnished uncompensated care by the provider or individuals furnished services at either no cost or reduced cost based on a sliding scale determined by the individual’s ability to pay.

The final rules published by CMS allow program participants to switch between incentive plans one time prior to 2015. The Medicare program has no patient volume requirement; however, EPs opting to switch from Medicare to Medicaid will be required to satisfy the patient volume requirement to be eligible for payment.

6. What data sources will the SMA use to verify patient volume for EPs and acute care hospitals?

Ohio Medicaid will require the provider to enter patient volume information into the attestation template. Ohio Medicaid will verify that the numerator and the denominator entered into the attestation template meet the requirements of the final rule.

For Eligible Providers (EP)

Ohio Medicaid defines an Medicaid encounter for an EP as services rendered on any one day to an individual where Medicaid paid for part or all of the service.

Ohio Medicaid defines an Medicaid encounter for an EP as services rendered on any one day to an individual where Medicaid paid all or part of the premiums, co-payments, and/or cost sharing.

For Eligible Hospitals (EH)

Ohio Medicaid defines an Medicaid encounter for an EH as services rendered to an individual per inpatient discharge where a Medicaid paid for part or all of the service; or Medicaid paid all or part of the individual’s premiums, co-payments, and/or cost-sharing.

Ohio Medicaid also defines a Medicaid encounter for an EH as services rendered in an emergency department on any one day where Medicaid paid for part or all of the service; or Medicaid paid all or part of the individual’s premiums, co-payments, and cost-sharing.

For both the EP and the EH, Ohio Medicaid may run a report of claims submitted by the provider for the period of time chosen by the provider for patient volume to determine if the numbers provided are reasonable. If the numbers submitted in the attestation for patient volume do not seem to reasonably match the claim volume submitted for the period of time, Ohio Medicaid may require the provider to submit additional information.

7. How will the SMA verify that EPs at FQHC/RHCs meet the practices predominately requirement?

Ohio Medicaid will require EPs that practice predominantly at FQHC/RHCs to attest to both this and patient volume. Ohio Medicaid will require providers to maintain documentation that verifies the attestation for no less than 7 years following the last day of the calendar year in which payment

related to the attestation has been received. In the event of an active audit, EPs will be required to maintain documentation until the audit and any appeal of the audit is resolved.

6. (2nd instance) How will the SMA verify, adopt, implement and upgrade certified electronic health record technology by providers?

The attestation template will require the provider to report which certified product was adopted, implemented or upgraded to. Ohio Medicaid will include a location for the product certification indicator from the ONC. Ohio Medicaid will require that providers keep original documentation related to the adoption, implementation or upgrade of the certified system used for the incentive payment for the same retention scheduled identified in the previous question. Ohio Medicaid will require providers to furnish this documentation if requested by Ohio Medicaid if it is needed for program review or post payment audit.

7. (2nd instance) How will the SMA verify meaningful use of certified electronic health record technology for providers' second participation years?

Ohio Medicaid will require that all EPs and EHs qualify for MPIP in their initial participation year by attesting to the adoption, implementation or upgrade of certified EHR. For MPIP participation years following the first payment year under AIU, Ohio Medicaid will require providers to attest to their meaningful use of certified EHR. Ohio will provide a template for EPs and EHs to enter MU standard specific information indicating the provider has met the MU standard, is asserting that the standard does not apply to the provider (and there will be no clinical quality measure) or provide the specific numerator and denominator indicative of the provider's experience with the standard. Documentation of the provider's self reporting will be used to support audits or program reviews conducted post payment.

8. Will the SMA be proposing any changes to the MU definition as permissible per rule-making? If so please provide details of the expected benefit to the Medicaid population as well as how the SMA assessed the issue of additional provider reporting and financial burden.

Ohio Medicaid will comply with the final rules as published in the Federal Register July 13, 2010 and has no current plan to change MU definitions.

9. How will the SMA verify providers' use of certified electronic health record technology?

Providers and patients must be confident that the electronic health information technology products and systems they use are secure, can maintain data confidentially, can work with other systems to share information, and can perform a set of well-defined functions. To this end, Ohio Medicaid will comply with federal law and require for MPIP program participation that EPs and EHs select and implement only certified EHR products consistent with the guidelines established by ONC

through the temporary certification rules released June 2010, (45 CFR Part 170 2010). Only MPIP applications that include certification numbers for products certified by the Office of the National Coordinator for Health Information Technology "Authorized Testing and Certification Bodies" (ONC-ATCBs) and listed on the ONC web-site will be accepted for processing by Ohio Medicaid. Certification numbers provided in attestation statements will be utilized to support subsequent audits.

10. How will the SMA collect providers' meaningful use data, including reporting of clinical quality measures? Does the state envision different approaches for the short-term and a different approach for the long-term?

As described in question 7 above, Ohio Medicaid will require providers to attest to their meaningful use of certified EHR and Ohio will provide a template for EPs and EHs to enter MU standard specific information, including clinical quality measures, indicating the provider has met the MU standard and reflecting the resulting clinical quality measure, or the provider will assert that the standard does not apply to the provider (and there will be no clinical quality measure) or provide the specific numerator and denominator indicative of the provider's experience with the standard and any applicable clinical quality measure. Documentation of the provider's self reporting will be used to support audits or program reviews conducted post payment.

For Stage 1 of meaningful use, reporting will be based on the EP or EH attestation statement. EPs must report on 6 total measures: 3 required core measures (substituting alternate core measures where necessary) and 3 additional measures. A maximum of 9 measures would be reported if the EP needed to attest to the 3 required core measures, the three alternate core measures, and the 3 additional measures. Eligible professionals will report from the table of 44 clinical quality measures which includes: 3 Core, 3 Alternate Core, and 38 additional CQMs. For Hospitals, there are a total of 24 meaningful use objectives. 14 are core objectives that are required, and the remaining 5 objectives may be chosen from the list of 10 menu set objectives.

1. Core CQMs - EPs must report on 3 required core CQMs, and if the denominator of 1 or more of the required core measures is 0, then EPs are required to report results for up to 3 alternate core measures.
2. EPs also must also select 3 additional CQMs from a set of 38 CQMs (excluding the core/alternate core measures). It is acceptable to have a '0' denominator provided the EP does not have an applicable population.
3. Eligible hospitals and critical access hospitals must report all 15 CQMs.

It is further understood that not all objectives are applicable to every provider's clinical practice. In these cases, the eligible professional, eligible hospital or CAH would be excluded from having to meet that measure (e.g. dentists who do not perform immunizations). It should be noted that exclusions do not count against the 5 deferred measures and the SMA may seek further objective approvals from CMS.

11. How will this data collection and analysis process align with the collection of other clinical quality measures data, such as CHIPRA?

Title IV of CHIPRA 2009 encourages voluntary, standardized reporting of a core set of child health quality measures for children enrolled in Medicaid and CHIP. The legislation intended for these measures, when taken together, appear to be appropriate for use to estimate the overall national quality of health care for children. In addition, the Affordability Care Act (ACA) directed the Secretary of the Department of Health and Human Services to identify and publish an initial voluntary core set of healthcare quality measures for adults eligible for Medicaid. These adult measures support the one of the goals of the ACA, which is to provide methods to improve the delivery of quality health services.

Ohio Medicaid is supportive of the goals of the CHIPRA child and PPACA adult measures. Their goals are very similar to the goals of the Meaningful Use Clinical Quality Measures. As these sets of measures are finalized and Ohio Medicaid expands its technological capabilities in year two and three, we will look for strategic solutions to achieve the goals of all three measure sets without overburdening providers.

12. What IT, fiscal and communications systems will be used to implement the EHR Incentive Program?

All payments to Ohio Medicaid providers are currently processed through the Ohio Administrative Knowledge System (OAKS) supported by the state Office of Budget and Management in conjunction with the Department of Administrative Services. Ohio Medicaid submits all payments to OAKS through the OAKS Financial Information Service (OFIS) system. Ohio Medicaid will require authorized eligible providers to submit via web-portal a request for incentive payment. Medicaid will track payments and ensure no duplicate payments. As described in question 4 above, communications to EPs and EHs specifically about application and operations will occur through a provider specific link to Ohio Medicaid's web portal. Ohio Medicaid will also communicate with provider associations, consumers, and other key stakeholders through meetings, conferences and seminars.

13. What IT systems changes are needed by the SMA to implement the EHR Incentive Program?

The IT changes will include a reporting algorithm consistent with the rules for measuring Medicaid activity in the applicant's designated 90 day measurement period, a self-help section of Frequently Asked Questions (FAQs) to assist with system navigation, development of a tracking system allowing providers to determine the status of the incentive payment, creation of the incentive payment system to create and track incentive payments, interfaces to OFIS and OAKS, and an accounting module to ensure that no individual exceeds the qualified maximum for reimbursement or receives duplicate payments. This information will be available at this location: [<http://jfs.ohio.gov/>].

14. What is the SMA's IT timeframe for systems modifications?

Ohio is a group 2 state for CMS testing. It is the intent of Ohio Medicaid to begin distribution of the incentive payments by early summer of 2011 upon federal approval of the SMHP and I-APD.

15. When does the SMA anticipate being ready to test an interface with the CMS National Level Repository (NLR).

Ohio Medicaid has received an initial set of interface specifications for the NLR and will monitor the progress of Northrop Grumman as it relates to their design and development. Ohio is a Group 2 state and is preparing for testing in the federal group two timeframe.

16. What is the SMA's plan for accepting the registration data for its Medicaid providers from the CMS NLR?

It is the intent of Ohio Medicaid to accept registrations from the CMS NLR. From a high level perspective, Ohio Medicaid expects to receive the registration from the NLR and generate an email to the provider asking the provider to log into the Ohio Medicaid provider website. Once the provider has logged into the Ohio Medicaid provider website, the provider can confirm his/her request for incentive payment and make an attestation to meeting AIU and in subsequent years, meaningful use criteria. Ohio Medicaid will then make the necessary criteria checks and approve or disprove the program applicant for MPIP. The specifics of the interface will be determined once the final design of the NLR is completed and Ohio Medicaid has an opportunity to review the requirements of a two-way exchange.

17. What kind of web-site will the SMA host for Medicaid providers for enrollment, program information?

Ohio Medicaid will provide a website for providers to create an account on and on which to subsequently submit a request for MPIP participation. The receipt of a provider's request through the NLR triggers a communication to providers containing the location of the website. Incentive payment status and information will be available on this website.

18. Does the SMA anticipate modifications to the MMIS and, if so, when does the SMA anticipate submitting an MMIS I-APD?

The current implementation of Ohio's new MMIS is anticipated for early 2011. Ohio Medicaid will not integrate the MPIP program into the claims payment system when MPIP is implemented. We may choose to integrate the incentive payment system with Ohio Medicaid's claim payment system at a later date. Ohio Medicaid's plan will include any modifications to the Ohio Medicaid claim payment system that are found to be necessary. Ohio Medicaid intends to replace Ohio Medicaid's

current DSS system with a Quality Decision Support System (QDSS). The QDSS will contain support for existing reporting and analysis, clinical reporting and analysis of meaningful use, acceptance of meaningful use data from external sources, and fraud waste and abuse detection capability.

Ohio Medicaid anticipates submitting a combined I-APD which contains HITECH and MMIS funding requests.

19. What kinds of call centers / help desks and other means will be established to address EP and hospital questions regarding the incentive program?

In addition to the FAQ section of the web-site, Ohio Medicaid will have a incentive payment program unit that will be trained on all aspects of the MPIP program. This unit will also field calls and emails to answer questions regarding the program. The experiences of this unit will inform program outreach, technical assistance and future program design.

20. What will the SMA establish as the provider appeal process relative to a) the incentive payments, b) provider eligibility determinations, and c) demonstration of efforts to adopt, implement or upgrade and meaningful use certified EHR technology?

Ohio Medicaid will manage informal appeals through the incentive payment program unit. This unit will assist providers and resolve any technical, incentive payment, provider eligibility issues or demonstration of adoption/implementation/upgrading. If the provider is unsatisfied with the informal appeal, the provider may make use of the existing formal Medicaid provider appeals process.

21. What will be the process to assure that all Federal funding, both for the 100% incentive payments, as well as the 90% HIT Administrative match, are accounted for separately for the HITECH provisions and not reported in a commingled manner with the enhanced MMIS FFP?

Ohio Medicaid's cost accounting procedures require all expenditures to be coded in a manner that precludes co-mingling of funds. This coding structure requires each fund code to have a definition that clearly describes the allowed usage and FFP. Ohio Medicaid's fiscal area that sets these codes and is responsible for the CMS64 and CMS37 reports has already been in touch with CMS representatives to insure the correct reporting of HIT dollars and to insure no commingling of funds.

22. What is the SMA's anticipated frequency for making the EHR incentive payments?

Ohio Medicaid anticipates making rolling payment through out the year for the full funds value of the incentive payment. Payments will be issued in compliance with federal requirements following processing and acceptance of the provider's application to the MPIP program.

22. (2nd instance) What will be the process to assure that Medicaid provider payments are paid directly to the provider (or an employee or facility to which the provider has assigned payments) without any deduction or rebate?

Ohio Medicaid provider incentive payments will be paid directly to the EP or EH who authorized the MPIP program application unless the EP or EH has reassigned the payment. Payments will be made to the Tax Identification Number (TIN) provided by the EP or EH. The value of the payment will be the full value indicated in the federal authorizing language with no deduction or rebate. For EHs the full value will be the value resulting for application of the formula in the federal authorizing language as applied to information from hospital cost reports.

23. What will be the process to assure that Medicaid payments go to an entity promoting the adoption of certified EHR technology, as designated by the state and approved by the US DHHS Secretary, are made only if participation in such a payment arrangement is voluntary by the EP and that no more than 5% of such payments is retained for costs unrelated to EHR technology adoption?

If Ohio Medicaid designates and CMS approves designated entities, program rules will be promulgated specifying that the payment arrangement is voluntary by the EP and that no more than 5% of payments can be retained for costs unrelated to EHR technology adoption. Further, the rule will require that EPs and designated entities maintain documentation to support compliance with the rule and provide such documentation upon request by Ohio Medicaid and entities performing audits at the direction of Ohio Medicaid.

24. What will be the process to assure that there are fiscal arrangements with providers to disburse incentive payments through Medicaid managed care plans does not exceed 105% of the capitation rate per 42 CFR Part 438.6, as well as a methodology for verifying such information?

Ohio Medicaid will not provide incentive payments through the managed care plans to EPs who are participants in one of the states Medicaid managed care plans. Ohio Medicaid will provide incentive payments directly to EPs and EHs, regardless of the extent of their participation in Medicaid Managed Care provider panels.

25. What will be the process to assure all hospital calculations and EP payment incentives (including tracking EPs' 15% of the net average allowable costs of certified EHR technology) are made consistent with the Statute and regulation?

The EP will be required to demonstrate proof of acquisition and other related cost upon request and attest as to how the cost, including the EP's 15% of net average allowable cost (NAAC) is related to AIU or, in subsequent years, the permissible cost for the EP 15% NAAC provision (see examples in the preamble of the final rule (75 FR 44492-4)).

Because providers are expected to retain records for audit purposes for no fewer than 6 years, and allowing for time for a provider to apply for incentive payments and for an audit to occur on items subject to attestation, Ohio Medicaid will permit providers to reach back no more than 3 years (36 months) prior to the provider's date of application for the incentive payments to capture allowable cost for AIU or cost that substantiates the provider's 15% of NAAC.

For example, if an EP applied for incentive payments in Feb 2012 and the provider expended \$5000 in Jan 2009 on an EHR and spends \$2000 in 2010 for the newly certified version, his/her total costs would be \$7,000. As the rule indicates that an EP must demonstrate 15% of the NAAC, which for the first participation year is \$3,750, that EP would have clearly met that requirement.

In addition to other program participation criteria, providers must attest that the provider's 15% obligation is based on and substantiated by records documenting experience at a practice site operating under a Medicaid Provider Agreement valid for the period represented by the provider's attestation.

However, the EP cannot "carry-over" from year to year, and must demonstrate that s/he has met the 15% of the NAAC for each year. So, for participation years 2-6, an EP would need to attest to Ohio Medicaid that s/he has expended at least \$1500 towards the meaningful use of certified EHR technology. Examples of allowable cost in the preamble of the final rule (75 FR 44492-4), include health information exchange transaction fees/monthly dues; costs associated with internet access; computer hardware; additional software upgrades; training/technical assistance fees, etc.

The hospital aggregate EHR incentive amount is the total amount the hospital could receive in Medicaid payments over a theoretical four years of the program. It is the product of three factors: the overall EHR amount, the Ohio Medicaid Share, and a transition factor calculated for each of the 4 years. Ohio Medicaid hospital cost reports will be used in the process of hospital MPIP calculations for Ohio Medicaid only incentive payments for hospitals. For the first payment year, data on hospital discharges from the hospital fiscal year that ends during the federal fiscal year prior to the hospital fiscal year that serves as the first payment year will be used as the basis for determining the discharge-related amount. To determine the discharge-related amount for the three subsequent payment years that are included in determining the overall EHR amount, the number of discharges will be based on the average annual growth rate for the hospital over the most recent three years of available data.

26. What will be the role of existing SMA contractors in implementing the EHR Incentive Program – such as MMIS, PBM, fiscal agent, managed care contractors, etc.?

Ohio Medicaid does not currently anticipate that current contractors will have a role in implementing MPIP. Ohio is implementing a new MMIS system, called MITS . Ohio Medicaid has chosen to not build MPIP in its current MMIS, as it will no longer be in use as MITS goes live. Until then, Ohio is examining the utility of procuring a stand alone EHR payment system which can be integrated into the OAKS system previously described.

27. States should explicitly describe what their assumptions are, and where the path and timing of their plans have dependencies based upon:

- ***The role of CMS (e.g., the development and support of the NLR; provider outreach/help desk support)***

- Ohio Medicaid anticipates continued clarification from CMS with respect to interpretation of the MU rules released July 13, 2010. In addition, Ohio Medicaid will require further discussion of CMS' plan to expand the National Health Information Network (NHIN) as it relates to the requirement to meaningfully exchange data electronically.
- ***The status/availability of certified EHR technology***
 - Ohio Medicaid believes many of the EHR developers have already taken steps to comply with the temporary certification guidelines and will continue to evolve their products in conjunction with the temporary certification guidelines and final rules on meaningful use. The rate of testing and capacity of the ONC-ATCBs to certify products will have a direct impact on the program and the intent to make initial payments in May 2011.
- ***The role, approved plans and status of the Regional Extension Centers***
 - It is the intention of Ohio Medicaid to explore forming a collaborative relationship with the Ohio based RECs to potentially leverage the opportunity to educate providers and share resources available to implement all components of incentive payments. Ohio Medicaid intends to support efforts to accelerate the adoption of Electronic Health Records and believes the RECs to be an important part of this process.
- ***The role, approved plans and status of the HIE cooperative agreement***
 - The recent announcement from ONC to the RECs describing the efforts at a federal level to adopts the HIE standards established by the NHIN will have a more significant impact on individual providers than on hospitals or hospital-based providers. Ohio Medicaid intends to explore working closely with the state designated entity to address the challenges of state-wide health information exchange.
- ***State-specific readiness factors***
 - A number of factors may affect this plan including upgrade of MITS, DSS and data warehousing, availability of qualified resources to support implementation, education of the provider community to further their understanding of the program, procurement timelines, budgetary impact and the upcoming elections that may change the political landscape of the state.

SECTION D: The State's Audit Strategy

What will be the SMA's methods to be used to avoid making improper payments? (Timing, selection of which audit elements to examine pre or post-payment, use of proxy data, sampling, how the SMA will decide to focus audit efforts):

- 1. Describe the methods the SMA will employ to identify suspected fraud and abuse, including noting if contractors will be used. Please identify what audit elements will be addressed through pre-payment controls or other methods and which audit elements will be addressed post-payment.**

Fraud and abuse detection and mitigation are critical functions of the Ohio Medicaid program. Ohio Medicaid has numerous processes to prevent and detect fraud, waste, and abuse in the Medicaid program. Various areas of Ohio Medicaid, the Ohio Attorney General's Office (AG), the Ohio Auditor of State (AOS), the United States Department of Justice, and the Department of Health and Human Services (HHS) contribute to the oversight, detection and prevention of fraud, waste, and abuse for Ohio Medicaid. In addition, Ohio will use pre-payment education to prevent provider fraud, waste and abuse. The audit process will identify potential cases of fraud and abuse.

The Ohio Medicaid Program will use a variety of tools to avoid making improper payments. These will include verification pre-payment of information about providers current status; checking state regulatory boards websites to be sure certificates and/or licensures have not been sanctioned or limited in scope of practice; verifying the provider is not on the Medicare exclusion list or another state's Medicaid exclusion list and insuring the provider is alive through the Social Security Administration list. In addition, Ohio Medicaid will initiate MPIP after the NLR is available. The NLR will support the registration of Ohio Medicaid providers applying for MPIP. Ohio Medicaid will evaluate transactions from the NLR to determine if providers applying have applied for or been paid by any other state, or by Medicare.

Additional post-payment reviews will be developed by Ohio Medicaid to be sure EPs are in compliance with the regulations set forth for participation in the incentive payment program. These may include verification of provider attestations, that providers are meeting required patient volume levels, verification the provider is using certified EHR software and evidence that A/I/U of EHR is occurring per program requirements. Further, Ohio has a robust system for reporting of fraud. There are direct links on the main web page of both the Ohio Auditor of State and the Ohio Attorney General web sites to report fraud. Posters and other advertising encourage the reporting of fraud.

- 2. How will the SMA track the total dollar amount of overpayments identified by the State as a result of oversight activities conducted during the FFY?**

The Ohio Medicaid program uses a software called AuditTrac for maintaining information on overpayments identified by Ohio Medicaid. We will leverage the existing system AuditTrac which tracks the full life cycle of the overpayment from date identified and entered into AuditTrac to final monetary recovery of the overpayment.

3. Describe the actions the SMA will take when fraud and abuse is detected.

Suspicion or detection of fraud and abuse by Ohio Medicaid will be referred to the Medicaid Fraud Control Unit (MFCU) in the Office of the Attorney General (AG). Referrals to the MFCU will be investigated for prosecutorial merit. Collaboration among Ohio Medicaid, MFCU and any other necessary federal, state or local authorities will be initiated to determine the extent of fraud and abuse. Substantiated cases of fraud and abuse will be prosecuted according to federal and state regulations.

4. Is the SMA planning to leverage existing data sources to verify meaningful use (e.g. HIEs, pharmacy hubs, immunization registries, public health surveillance databases, etc.)? Please describe.

Ohio Medicaid will use available data sources to verify meaningful use of EHRs. Sources may include those listed above, information contained within the Ohio Medicaid's claims adjudication system and/or requested documentation from EPs and EHs. ODJFS will use other data sources if it deems them reliable and worthwhile in the effort to prevent fraud, waste and abuse.

5. Use of Sampling for Audit Strategy

Will the state be using sampling as part of audit strategy? If yes, what sampling methodology will be performed?* (i.e. probe sampling; random sampling)

The Ohio Medicaid program currently uses random sampling for auditing purposes. Ohio Medicaid will employ this method in auditing the incentive payment program, but remains flexible to use of other auditing techniques if Ohio Medicaid determines random sampling is not the most effective auditing technique. Risk assessment and materiality will determine volume, scope, methods, and procedures. The audit team will target its resources in areas with the most risk. The audit team will possess an understanding of the internal control structure of MPIP. With this understanding, the team will identify the controls relevant to the objectives of the audit (patient volume, for example). The team will assess risk for significant program controls. Audit teams will consider relevant factors, such as materiality, and significance of legal and regulatory requirements.

6. What methods will the SMA use to reduce provider burden and maintain integrity and efficacy of oversight process (e.g. above examples about leveraging existing data sources, piggy-backing on existing audit mechanisms/activities)?

Oversight processes will be maintained within Ohio Medicaid through existing auditing mechanisms. Ohio Medicaid recognizes that MPIP is important to leverage change to improve quality, safety and efficiency in the delivery of health care. To that end, we will continue to promote EHR technology to Medicaid providers, regardless of their eligibility for MPIP. This program provides a great opportunity to partner with CMS to demonstrate to providers our mutual commitment to avoid unnecessarily burdening providers. To the extent that CMS and the states are able to partner on an audit protocol for dually eligible hospitals, Ohio Medicaid will examine that protocol to determine if the same protocol could be used for Ohio Medicaid only participating hospitals to ensure consistency in approach.

7. Where are program integrity operations located within the State Medicaid Agency, and how will responsibility for EHR incentive payment oversight be allocated?

The Ohio Medicaid program integrity operations are located within Ohio Medicaid, though collaboration exists among the AG's MFCU, the Office of the Auditor of State and other federal, state and local authorities to ensure protection against fraud, waste and abuse in the Ohio Medicaid program. Oversight and monitoring of appropriate EHR incentive payments will be the responsibility of Ohio Medicaid. Audit activities may be performed in part directly or via collaboration with other entities.

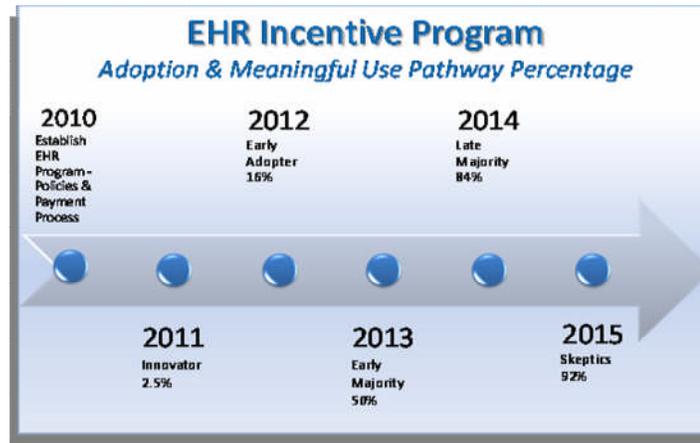
SECTION E: The State's HIT Roadmap

1. Provide CMS with a graphical as well as narrative pathway that clearly shows where the SMA is starting from (As Is) today, where it expects to be five years from now (To Be), and how it plans to get there.

As described in our "As Is" and "To Be" sections, Ohio is a state focused on cost containment, program affordability and high quality care for covered Ohioans. In addition, some areas of Ohio are rural and challenged by the cost of access to broadband. Encouraging and supporting providers at all levels of the Ohio Medicaid delivery system to integrate EHR technology and HIE is key to making progress on our identified priorities. MPIP is the fulcrum to leverage this change.

Ohio Medicaid also understands that National Health Outcome Policy Priorities form the basis of the Meaningful Use objectives. Clearly EHR adoption significantly enhances an infrastructure that supports not only our currently identified priorities but also future initiatives such as Payment Reform and Eligibility Simplification. As a result, the development and further articulation of the State's HIT Roadmap and pathway will be developed over time and refined through steps being taken now to complete the SMHP.

Ohio Medicaid completed a survey of eligible professionals to determine the current rate of EHR adoption and provider plans for adoption and pursuing EHR incentive payments. As described earlier in this document, this process provides a baseline to understand current adoption and potential trends in adoption. From data gathering and analysis, Ohio Medicaid will set progress measures for provider adoption by provider type. Based on our extensive provider outreach and communication process in developing the SMHP, we have several assumptions that we will test during the data analysis and performance measurement setting process. Based on information to date, we



1. assume eligible hospitals are and will continue to be early adopters and lead the adoption curve. The key challenge for hospital adoption will focus on interoperability across the entire hospital system. Many hospitals nationwide commented on interoperability issues during the Draft EHR Incentive Rule process. In addition, some hospital systems will face challenges with interoperability across their integrated provider delivery network. Some hospital networks have been early adopters in providing some secure and private exchange on types of health information for community physician practices. However, not all of these exchanges are fully

interoperable and some have been developed as tools to exchange only with providers within their networks, rather than supporting the full exchange of standards based interoperable communications for all community providers. These challenges will need to be addressed to fully realize the goals of HITECH.

2. anticipate small primary care physician practices that are the target group of outreach and technical assistance by the RECs and their Regional Partners are more likely to request MPIP participation.
3. will open payment year one MPIP enrollment to EPs and EHs under the adopt, implement, and upgrade provisions only.

Once we are able to complete data analysis and set baselines for provider adoption, and factor in provider feedback regarding provider likelihood to pursue MPIP program participation, then Ohio Medicaid may use the Technology Adoption Curve to project rates of adoption by provider group. This will help to inform what sectors may have electronic information available to begin supporting standardization of data collection. We will then analyze this data and determine progress metrics for Ohio Medicaid to set for each of the meaningful use objectives for each year.

Also through this process, Ohio Medicaid will identify, link and learn from other quality improvement processes already underway in the state that are effectively using EHR/HIE to improve health and care quality. In addition to the statewide initiatives referenced in the “As Is” Section of this document, Ohio Medicaid will focus on and communicate with three other quality improvement initiatives that are also rooted in local community leadership and innovation:

1. Ohio Best Evidence for Advancing Childhealth in Ohio NOW Council – described earlier
2. Aligning Forces for Quality (A4FQ) – Greater Cincinnati and Greater Cleveland areas
3. BEACON Community – HITECH grant – Greater Cincinnati

The primary reason for focusing on these initiatives is because they are using health information technology to make measurable improvements in health quality and health care. There are a variety of other initiatives in the state that may focus on quality, and performance measurement or HIE which Ohio Medicaid will focus on as well, but these three initiatives focus on:

- A. Setting health or care delivery goals for quality improvement,
- B. Using HIT to gather, and exchange clinical health information for the purpose of improving health quality
- C. Using HIT to increase accountability through transparent reporting on quality measures, and
- D. Transforming data into meaningful information that can engage individuals and their families in informed decision-making; involves them in their own health care, and provides clinical decision support for clinicians in the practice of health care.

All three initiatives demonstrate the four strategies and actively involve health care professionals in setting goals for improved health and care quality. One of these initiatives, the HealthBridge BEACON Community, involves health care consumers setting their own health care goals and

providing tools and information to help track and improve their own health or that of family members living with the chronic condition of diabetes. The group’s goal is to aggregate data from 50% of Greater Cincinnati primary care physician practices through this portal, and provide quality reporting back, first to physicians, and then to the public by the spring of 2010.

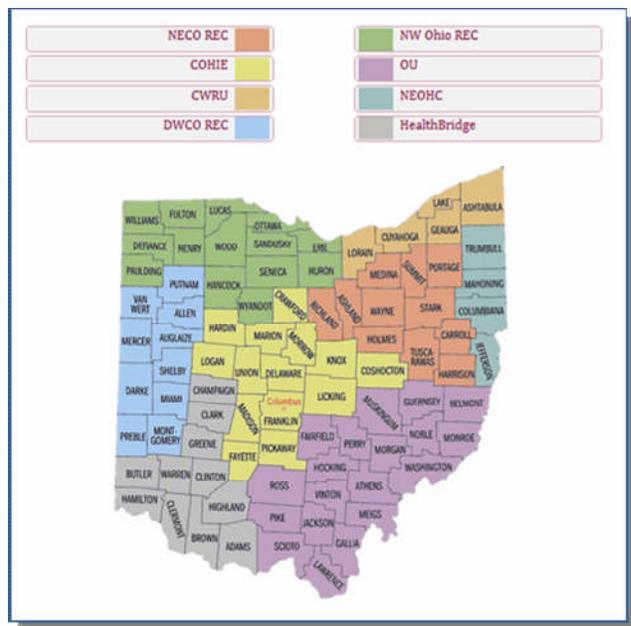
By generating quality of care reports for providers and consumers throughout the region, this group intends to leverage the HealthBridge HIE infrastructure to collect data for measurement. They will partner with national experts to ensure accuracy, fairness and efficient processes.

Ohio Medicaid will be working with these initiatives to identify ways to support and disseminate their best practices including those aspects having to do with EHR and HIE through the MPIP program, and to expand the engagement of individuals and their families in their own health care.

2. What are the SMA’s expectations re provider EHR technology adoption over time? Annual benchmarks by provider type?

Ohio Medicaid will be using the results from the statewide provider survey to benchmark the Ohio Medicaid providers’ EHR adoption and to project annual adoption rates and ascent up the Technology Adoption Curve. Ohio has received nearly \$87 million in Federal grants to support the development of RECs, HIE capabilities and a BEACON community -- all of which should help contribute to the adoption and meaningful use of EHRs to improve health and care quality and cost efficiency.

One of the key elements in the process will be continuing to work with the two state-level RECs – OHIP and HealthBridge. RECs provide a range of technical assistance to assist Priority Primary Care Practitioners (PPCP) to adopt and meaningfully use EHRs. PPCPs include: Family Physicians (FPs), Obstetrics/Gynecologists (OB/GYN), Pediatricians, and Internal Medicine Physicians who work in small practices of less than ten physicians, prescribers, physician assistants or Advanced Registered Nurse Practitioners or who work in Community Health Centers, Rural Clinics, Critical Access Hospitals and FQHCs.



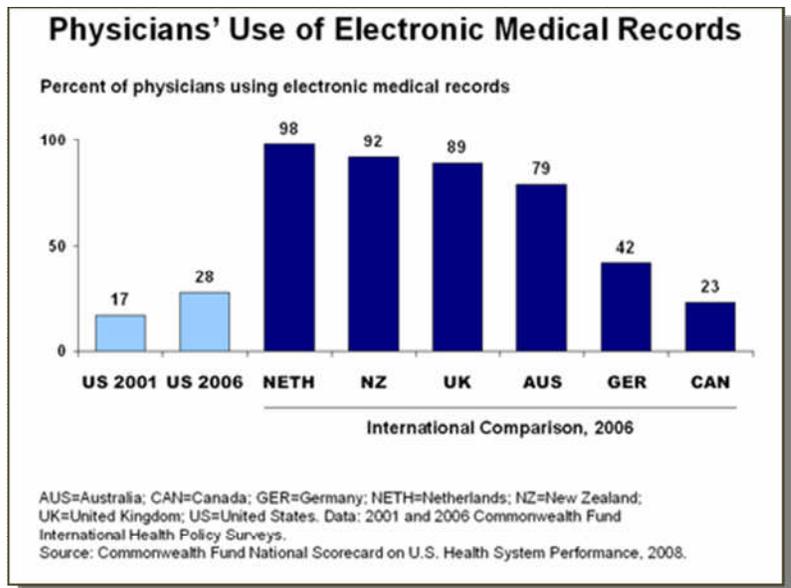
OHIP received \$46,393,199 (\$28,500,000 Federal and \$17,893,199 State and matching funds) for REC activities. OHIP’s REC strategy has focused on identifying and appointing 7 “Regional Partners” (RPs) to serve as REC contacts in 77 of Ohio’s 88 counties. The map above details the 7 Regional Partner entities and their primary contacts.

In addition, OHIP received \$16,979,000 through the ONC HIE Cooperative Agreement program to support the establishment of HIE capabilities and services for health care providers and hospitals in their jurisdictions.

HealthBridge was awarded an ONC BEACON Community grant of \$13,800,000 to help build and strengthen their HIT infrastructure and exchange capabilities to “demonstrate the vision of a future where hospitals, clinicians, and patients are meaningful users of health IT, and together the community achieves measurable improvements in health care quality, safety, efficiency, and population health.”⁵

3. Describe the annual benchmarks for each of the SMA’s goals that will serve as clearly measurable indicators of progress along this scenario.

Following the accomplishment of our primary objective, bringing up the operation of the MPIP program for EPs and EHs, we will employ various means to monitor stages of adoption of EHR in Ohio. Periodic assessment of Ohio providers working with Ohio Medicaid will inform us of progress. Benchmarks will be established based on the survey results and MPIP program participation requests. We will continue to work with providers who have implemented EHR and will look for opportunities to target provider communities that need the most assistance in the implementation of EHR statewide.



Ohio Medicaid believes that meeting meaningful use each year will itself be an indicator of the progress providers are having with EHR and will monitor if providers who initially met A/I/U continue program participation.

Ohio Medicaid agrees with the importance of HIT. It is clear that there is a growing body of evidence that HIT is an essential tool in improving health care quality. EHRs are making it easier for physicians to provide coordinated, high-quality care by streamlining many tasks including: sending patient reminders, creating disease registries, prescribing and refilling medications, and viewing lab results, among others. Unfortunately, adoption of HIT by physician practices has been slow in the U.S.⁶

⁵ HITECH Programs, BEACON Community. Accessed at: http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__hitech_programs/1487

⁶ Karen Davis, Ph.D.; Michelle McEvoy Doty, Ph.D.; Katherine Shea, M.P.H.; and Kristof Stremikis, M.P.P., *Health Policy*, published online Nov. 25, 2008. Accessed at:

Another recent cross-sectional study of 41 urban hospitals documents the value of EHRs in reducing deaths, complications and excessive costs. Using the Clinical Information Technology Assessment Tool to measure a hospital's level of automation, researchers were able to determine that a hospital's greater use of electronic health information systems was associated with reduced rates of inpatient mortality, complications, costs, and length of stay for 167,233 patients older than 50 years. This study provides empirical evidence that greater automation of a hospital's information system may be associated with reductions in mortality, complications, and costs."⁷

4. Discuss annual benchmarks for audit and oversight activities.

The Ohio Medicaid program has appointed a HIT Program Director and a HIT Project Manager who are responsible for insuring the successful implementation of the MPIP program. ODJFS will follow the standard audit protocols used by the agency across a variety of programs it operates that have proven effective over time. Ohio Medicaid will work with its audit entities to develop annual benchmarks for audit and oversight based on volume and type of provider participation and incentive payment levels as well as on program phases (for example AIU, program payment year, meaningful use, etc.) as systems for payment and tracking of meaningful use are being built and tested. Ohio Medicaid may implement new fraud, waste and abuse systems to insure audit and oversight are accurate and complete. The State Medicaid HIT Plan and the Implementation Advance Planning Document will be iterative documents which will provide more complete explanations of program and project oversight as the program progresses.

<http://www.commonwealthfund.org/Content/Publications/In-the-Literature/2009/Jan/Health-Information-Technology-and-Physician-Perceptions-of-Quality-of-Care-and-Satisfaction.aspx>

⁷ R. Amarasingham, L. Plantinga, M. Diener-West et al., "Clinical Information Technologies and Inpatient Outcomes: Multiple Hospital Study," *Archives of Internal Medicine*, Jan. 26, 2009 169(2):108–14. Accessed at:

<http://www.commonwealthfund.org/Content/Publications/In-the-Literature/2009/Jan/Clinical-Information-Technologies-and-Inpatient-Outcomes--A-Multiple-Hospital-Study.aspx>

Appendix A. Key Informant Summary

Ohio Medicaid met with key informants to share the parameters of the MPIP program, identify their current level of adoption of EHR and HIT, solicit their input into the development of the SMHP, and get their comments on aspects of the MPIP where Ohio has options to configure the implementation of the MPIP.

Methodology:

From June thru September 2010 Ohio Medicaid, consisting of Ohio Medicaid staff and consultants, met with a variety of individuals and members of institutions to discuss the Medicaid Provider Incentive Program (MPIP). The list of key informants was drawn from a communications matrix, from which the team established a hierarchy of the key informants that should be contacted. A GRC consultant was embedded in the Ohio Department of Job and Family Services to develop a schedule of meetings with stakeholders, including negotiating the date and time, and coordinating the dates with the calendars of Ohio Medicaid leadership team and consultants. Prior to each event, an event presentation was created in PowerPoint. Also created was a list of questions for each group which reflected the team's knowledge of each key informant group items that needed to be covered in each of the sections of the SMHP.

Presentations were delivered by Ohio Medicaid leadership. A question and answer session followed each presentation. Afterward, a variety of questions were asked of the group. Notes for each meeting were captured and entered on an event summary form. Meeting notes were thoroughly reviewed by consultants and laid out on a detailed matrix with the following categories:

- EHR adoption and readiness
- Awareness of the CMS EHR incentive program
- Current quality improvement activities, meaningful use measurement and payment reform
- Current level of consumer engagement in HIT
- Multi-state issues
- Concerns for how Medicaid will implement the MPIP
- Health Care issues / Other.

Key informant organizational list

Ohio Medicaid met with the following groups:

- Ohio Medicaid leadership team,
- providers of ambulatory care, including the Ohio Academy of Pediatrics, and Ohio Academy of Family Physicians,
- Federally Qualified Health Centers,
- Ohio Health Information Partnership,
- The Ohio Association of Health Plans, Medicaid managed care plan CEOs,
- Ohio Medicaid long-term care providers roundtable (nursing homes, home health agencies)
- The Ohio State University Medical Center,
- Best Evidence for Advancing Childhealth in Ohio Now Council,
- Cincinnati Children's Hospital Medical Center,
- HealthBridge, the REC for Southeastern Ohio,
- Tom Niehaus, President Pro Tempore of the Ohio Senate,
- Dr. Thomas J. Redington, former Medical Director of the Ohio Medicaid program,
- Better Health Greater Cleveland, the RWJ Aligning Forces for Quality Project,
- Northeast Ohio Sub-Rec at Case Western Reserve University,
- Federally Qualified Health Centers in Cleveland, including the Neighborhood Family Practice and Care Alliance,
- Academy of Medicine in Cleveland,
- University Hospitals of Cleveland,
- Center for Health Affairs (Cleveland Hospital Association),
- Ohio Osteopathic Association,
- Ohio Children's Hospital Association,
- Ohio Dental Association,
- Ohio Nurses Association,
- Rainbow Babies and Children's Hospital,
- Statewide Independent Living Council,
- Mental Health Consumers,
- Other consumer advocacy organizations
- Nursing Home trade organizations,
- ADAMH Board of Franklin County
- Ohio Council of Behavioral Health Care
- Planned Parenthood,
- O-CHIN, the REC for the state of Oregon.
- Ohio Optometrists Association

EHR Adoption and Readiness

For many of the sessions with providers, there was a discussion of EHR readiness. Many providers have fully implemented EHRs, or are in the late stages of system roll-out. Many providers were approaching their 'Go Live' dates. They walked us through their implementation process, recounting their strategies, successes, and failures. They offered advice about how long the process takes to plan and implement, and questioned whether there are enough resources to implement the system state-wide and nationally in the short timeframe. We heard about implementation of EHR in the emergency departments, physician's offices, and dental clinics. Providers reported how many eligible professionals employed in hospitals, and affiliated community providers, would be able to apply for MPIP.

Larger hospitals are more confident about implementing an EHR, because they are, as a whole, already on the way towards EHR usage in a progression through their departments. Larger entities have more resources. They see MPIP as additional revenue.

Smaller providers wonder what the actual costs of EHR adoption will be for them and some believe that the MPIP is not enough of an incentive to adopt and install an EHR. Small providers are concerned about the administrative burden, the cost and transition, and are least likely to be Medicaid providers. Most small pediatric practices will not reach the 20% Medicaid volume threshold. They believe that they will need additional financial assistance and want guidance on how to coordinate multiple sources of funding to install an EHR. Financing and timing are of major concern.

Awareness of the CMS EHR incentive program

In early key informant sessions there was less awareness of the incentive program. Some state-level provider associations had heard about MPIP through their national organizations. Many providers did not know the difference between the Medicare and Medicaid incentive programs, and asked which would be most advantageous for them. Others had been following the work on EHR adoption and HIE by OHIP and HealthBridge, but they did not know that there was a separate Medicaid HIT project. By the time that the final rule was published there was a much better understanding of the Medicaid HIT project, in part because Ohio Medicaid was making presentations and providing literature. Within a few weeks after the publishing of the Final Rule, most key informants had claimed that they had read it, or a synopsis of it. As a result, the comments and questions have become increasingly more sophisticated.

There was some concern that isolated providers may 'fall between the cracks' of OHIP/RECs/Medicaid efforts. There is a need for connecting with national provider organizations to make sure the opportunity is presented to all potentially eligible providers. HealthBridge and Sub-RECs were interested in information sharing with Ohio Medicaid to identify high volume Medicaid practitioners to determine the extent to which there were some practitioners that should get outreach and education that were not already identified.

There is concern that providers will go after the up-front incentive payment, but not follow through for the lower subsequent payments.

At nearly every session, the following questions were posed about the Program:

- Do we qualify, and if not, what, if anything, can we do to qualify if we want to participate?
- How much can we get? How do we count Medicaid volume?
- Do we count visits for out-of-state patients?
- How will we count Medicaid visits, considering that providers have no way of differentiating children on CHIP vs. Medicaid?
- How will an EP's employment status affect the incentive payment (hospital, FQHC, group practice, allocation across practice members, etc.)?
- How will practitioners employed in both FQHCs and hospitals be treated?
- What does it mean to 'Acquire' an EHR?
- What can be included in the cost of the EHR (difference between 85% and 100% of the cost of adoption or installation)? Do retro-active purchases count? Can depreciated value be included?
- How will eligible professionals document the cost of the EHR?
- How will reassignment of incentive payments between the Eligible Practitioner and other entity (hospital, group practice, FQHC, etc.)?
- What changes do we need to make and do they fit with our business model?

Current quality improvement activities, meaningful use measurement, and payment reform

The need for EHR and HIE is not simply to automate paper, but to create structured data that can be used to drive patient safety, improve quality and lead to better health outcomes.

It was shown that some eligible practitioners are already using the EHR to improve quality and ensure maximum performance on ambulatory care measures, particularly around diabetes, asthma, COPD and congestive heart failure.

Many providers are involved with local, state, and federal quality improvement projects or payment reform projects. Some are included in the Hospital Premier program, federal medical home demonstration programs, and community level medical home efforts such as Aligning Forces for Quality. Many are gearing up their efforts to be involved in 'Accountable Care Organizations.' Some are participating in provider lead collaborative to improve quality, or public / private sector strategies. They view EHR as an essential step toward payment reform. They expect public and private purchasers to use HIT and HIE to reach quality improvement and cost containment goals, and are concerned for how this will come about.

Yet some eligible practitioners that have been participating in these efforts are less optimistic about the future. They feel that they are not getting paid or recognized for their quality efforts. They are concerned about whether their practices will ever benefit from these initiatives.

Topics raised in key informant sessions included:

- The particulars of the rules of “Meaningful Use” are of some concern to groups excluded or inadequately addressed. Changes to Meaningful Use criteria in Stage 2 and 3 are worrisome.
- Providers would like to know if the public health registry meaningful use measures will be elected by Ohio Medicaid in Stage 1 of meaningful use.
- Measures matter; the need for standard, clear metrics that are known to all, especially for clinicians, to have an understanding of why the data must be collected. Vendors must accurately implement the system capture and reporting of the metrics.

Current level of consumer engagement in HIT

Many of the hospitals, including their employed EPs, have implemented portals where patients can get access to a patient view of their medical records. Some providers have implemented strategies for requesting prescription refills, scheduling appointments, sending non-urgent messages to their doctor’s office, viewing lab and test results, and reviewing their medications, immunizations, allergies, and medical history.

One children’s hospital uses text messaging to teens participating in their clinical services to send appointment reminders, and educational messages about their health conditions.

Multi-state issues

Several large hospital providers that serve multi-state regions, such as those in Cincinnati who also serve Indiana and Kentucky, are concerned about how visits will be counted for patients out-of-state. Additionally, there are a number of FQHCs, eligible practitioners and smaller hospitals in border towns on the Ohio side and West Virginia sides of the Ohio River that will have to choose a state to participate in the EHR incentive program.

Topics raised in key informant sessions included:

- What source do we use to implement the hospital formula? Medicaid cost reports (state specific) as a source of data for the formula is problematic.
- If eligible practitioners can only use Ohio Medicaid in the numerator of the volume calculation, can they exclude out-of-state Medicaid and all other out-of-state patients from the denominator?

Concerns for how Medicaid will implement the MPIP

Key informants were interested in having the application process for MPIP as straightforward and streamlined as possible, with a clear understanding of the process, the data requirements, and the

documentation required. For those who have not implemented an EHR yet, there is concern about cash flow.

Topics raised in key informant sessions included:

- Can Ohio Medicaid make the application process for MPIP as simple as possible, and not overwhelm providers with application requirements?
- This systemic change requires a readiness to accept it and time. Education and training must be provided. It is felt that short timeframes add pressure that is counterproductive to learning and real change.
- When and how will the incentive payments be made?
- How long will it be between paying the invoice for an EHR and receiving the first incentive payment?
- How will IRS 1099 forms be handled?
- What will be the appeals process and the audit process?

Health Care issues / Other

As EHR adoption is a fundamental change in the administrative components in the health care system, the components of the health care system are inter-related, and changes in one part of the health care system are likely to have intended and unintended consequences on other parts. Because of this, key informants raised questions about the possible contemporary and long term impacts of the EHR Incentive Program.

Topics raised in key informant sessions included:

- Hospital providers are concerned about reporting the EHR incentive program revenue on cost reports, and what impact that will have on other Ohio Medicaid sponsored programs, including the franchise fee, Medicaid DSH, and upper payment limit.
- The complexities of relationships hospitals have with employees, contractors, providers in the community and variations of these business and local associations, and how they affect eligibility and amounts of incentive payments for MPIP.
- There is concern that some small and medium practices do not have enough Medicaid patients to qualify, due to the potential for reduced revenue if they serve more Medicaid consumers and resulting decisions to not take on Medicaid patients. How might that change in the future?
- There is concern about a possible disconnect between eligible and ineligible providers, and about how health care partnerships will be conducted between them in the future. Some provider groups were not included in the EHR incentive program, and would like to be considered in the future as they regularly do business with the hospitals and eligible practitioners. This includes long-term care facilities, home health agencies, family planning clinics, community mental health and alcohol and drug addiction clinics, and local health department clinics. Optometrists would like to be included, but were not sure if they qualified as doctors under the Ohio Medicaid State Plan and Ohio Administrative Rules.

- Many providers are concerned about privacy and confidentiality and why federal Medicaid rules are not aligned with HIPAA and HITECH. There were questions and issues discussed about data sharing for research purposes and for how data would be used at a statewide or community level for population based health and disease registries.

In conclusion, there is a wide spectrum of understanding about EHR adoption in Ohio. Spreading up-to-date program information and cooperating with many partners is essential. Many see this program as a way to help accomplish the goal of improving the health care system. Others are concerned about the future of the health care system, and the rapid pace of change.

Appendix B. Key Informants

Last Name	First Name	Company
Aframgyening	Francis	Care Alliance Health Center
Albers	Marcia	Ohio Association of Advanced Practice Nurses
Alfano	John	Association of Ohio Philanthropic Homes, Housing and Services for the Aging
Anderson, M.D.	Michael	University Hospitals
Annecharico	Mary Alice	University Hospitals
Arnold	Melissa	American Academy of Pediatrics- Ohio Chapter
Aungst	Herde	Case Western Reserve University
Bacon	Melissa	Ohio Children's Hospital Association
Bentley	Tom	Ohio State University Medical Center IT
Biddlestone	Elayne	Academy of Medicine of Cleveland and Northern Ohio
Bieber, M.D.	Eric	University Hospitals-Case Medical Center
Boardman	Brian	University Hospitals- Rainbow Babies & Children's Hospital
Britto	Maria	Cincinnati Children's Hospital Medical Center
Butler	Mary	Ohio Statewide Independent Living Council
Campbell	Bob	Ohio Department of Health
Carlson	Jennifer	The Ohio State University Comprehensive Cancer Center- Arthur G. James Cancer Hospital and Richard J. Solove Research Institute
Carpenter	Jennifer	University Hospitals- Rainbow Babies & Children's Hospital
Cebul	Randy	The MetroHealth System
Clark	Daniel	University Hospitals
Clark	Margaret	Cincinnati Children's Hospital Medical Center
Compton	Mike	Ohio Health Care Association
Cornett	Rick	Ohio Optometric Association
Cotton	William	Nationwide Children's Hospital
Croall	Gail	CareSource
Cuttler	Leona	University Hospitals- Rainbow Babies & Children's Hospital
D'Atri	Andrew	University Hospitals- Rainbow Babies & Children's Hospital
Davis	Rich	Ohio State University Medical Center - Ross Heart Hospital
Dennis	Darby	University Hospitals- Rainbow Babies & Children's Hospital
DePompei	Patti	University Hospitals- Rainbow Babies & Children's Hospital
Deschenes	Julie	The Children's Medical Center of Dayton
Dirossi-King	Julie	Ohio Association of Community Health Centers
Doherty	Pat	Akron Children's Hospital
Donisi	Carl	Cincinnati Children's Hospital Medical Center
Dougherty	Gary	Planned Parenthood
Emore	Linda	Akron Children's Hospital
Fahlgren	Karen	Cincinnati Children's Hospital Medical Center

Last Name	First Name	Company
Ferenzi	Cori	Cincinnati Children's Hospital Medical Center
Fette	Linda	Ohio Optometric Association
Fleischer	John	Howard, Wershbae & Co.
Fredett	Beth	The Children's Medical Center of Dayton
Frick	Shawn	Ohio Association of Community Health Centers
Friedman	Jerry	Ohio State University Medical Center
Gartland	Heidi	University Hospitals- Rainbow Babies & Children's Hospital
Giljahn	Lynn	Ohio Department of Health
Gillett	Clayton	Oregon Community Health Information Network
Groves	David	HealthBridge REC
Hall	Eric	Cincinnati Children's Hospital Medical Center
Hall	Phyllis	University Hospitals- Rainbow Babies & Children's Hospital
Hamlin	S.	Cincinnati Children's Hospital Medical Center
Henry	Jayne	Ohio State University Medical Center
Hille	Zackary	Cincinnati Children's Hospital Medical Center
Hoyen	Claudia	University Hospitals- Rainbow Babies & Children's Hospital
Hughes	Karen	Ohio Department of Health
Intihar	Tracy	Capital Consulting Group, LLC
James	Marianne	Cincinnati Children's Hospital Medical Center
Jayoussi	Maria	University Hospitals
Justice	Mary	Ohio State University Medical Center
Kelleher	Kelly	Nationwide Children's Hospital
Kemper	Eric	Ohio State University Medical Center
Knight-Perry	Jessica	University Hospitals- Rainbow Babies & Children's Hospital
Kotagul	Uma	Cincinnati Children's Hospital Medical Center
Lann	Carole	Cincinnati Children's Hospital Medical Center
Lannon	Carole	Cincinnati Children's Hospital Medical Center
Lashutka	Nick	Ohio Children's Hospital Association
Lowrance	Jeff	Ohio Shared Information Services
Maloney	Mary Jane	Ohio Association of Advanced Practice Nurses
Manjour	Mona	Cincinnati Children's Hospital Medical Center
Matteo	Mickey	University Hospitals- Rainbow Babies & Children's Hospital
Matthews	Trudi	HealthBridge
Metelko	Hilary	Ohio Department of Health
Moore	Deanna	The Center for Health Affairs
Moseley	Mark	Ohio State University Medical Center
Muething	Steve	Cincinnati Children's Hospital Medical Center
Muneio	Paul	ProMedica Health System-Toledo Children's Hospital
Murray	Christopher	The Ohio Academy of Nursing Homes
Nevar	Ann	University Hospitals- Rainbow Babies & Children's Hospital
Nixon	Laura	Cincinnati Children's Hospital Medical Center

Last Name	First Name	Company
Ogg	Tom	Akron Children's Hospital
Omlor, M.D.	Greg	Akron Children's Hospital
Palladino	Marie	Cincinnati Children's Hospital Medical Center
Pandzik	Gerry	Cincinnati Children's Hospital Medical Center
Paulic	Barbara	Ohio Nurses Association
Paulson	John	Ohio Department of Health
Payne	Philip	Ohio State University Medical Center
Rankin	Lisa	Ohio Nurses Association
Redington	Thomas J.	The Christ Hospital
Reed	Heather	Ohio Department of Health
Rehm	Julie	Case Western Reserve University
Reitz	Kay	Ohio Department of Mental Health
Rhoades	Cathy	Sisters of Charity Health System- Saint Vincent Catholic Medical Centers
Ridenaur	Mark	Ohio Optometric Association
Rogers	Carol	OC OBGYN
Rose	Barbara	Cincinnati Children's Hospital Medical Center
Runyan	Randy	Family Health Centers
Rutie	Mary	Case Western Reserve University
Ryan	Bill	The Center for Health Affairs
Saladonis	Melissa	Cincinnati Children's Hospital Medical Center
Sauff	Jim	UCE
Schlesinger	Jim	The MetroHealth System
Schroeder	Michael	Ohio Department of Mental Health
Sears	Abby	Oregon Community Health Information Network
Seely	Elizabeth	The Ohio State University Medical Center- University Hospital East
Segal	Mark	Ohio Department of Health
Shepherd	Melissa	Cincinnati Children's Hospital Medical Center
Sigafoos	Kam	OSU, INC. Physicians
Simmons	Jeff	Cincinnati Children's Hospital Medical Center
Simpson	Lisa	Cincinnati Children's Hospital Medical Center
Slotkin	Marilyn	Cincinnati Children's Hospital Medical Center
Smith	April	HealthBridge REC
Snow	Richard	OhioHealth- Doctors Hospital
Spicer	Ann	Ohio Academy of Family Physicians
Spooner	Andy	Cincinnati Children's Hospital Medical Center
Spriggs	Elise	Kegler Brown Hill & Ritter
Stange	Kurt	University Hospitals-Case Medical Center Department of Family Medicine
Strauss	Arnold	Cincinnati Children's Hospital Medical Center
Tague	Katarina	University Hospitals- Rainbow Babies & Children's Hospital
Taylor	Mike	Cincinnati Children's Hospital Medical Center
Taylor	John	University Hospitals- Rainbow Babies & Children's Hospital

Last Name	First Name	Company
Therrien	Jean	Neighborhood Family Practice
Tisone Price	Jennifer	Ohio Nurses Association
Trainer	Mike	Akron Children's Hospital
Van Runkle	Peter	Ohio Health Care Association
Van Winkle	Judy	Cincinnati Children's Hospital Medical Center
Wagner	Andrew	Ohio State University Medical Center
Wakulchik	Grace	Akron Children's Hospital
Whitted	Beth	Planned Parenthood
Williams	Chris	Ohio Association of Advanced Practice Nurses
Wills	Jon	Ohio Osteopathic Association

Appendix C. Acronyms

ACRONYM	NAME OR PHRASE
ADEC	American Distance Education Consortium
AHIE	Appalachian Health Information Exchange
APN	Advanced Practice Nurse
ARRA	American Recovery and Reinvestment Act of 2009
ATCB	Authorized Testing and Certification Bodies (with ONC)
BEACON	Best Evidence for Advancing Childhealth in Ohio NOW
BHGC	Better Health Greater Cleveland
CAH	Critical Access Hospital
CCHIE	Collaborating Communities Health Information Exchange
CCHIT	Certification Commission for Health Information Technology
CDC	Centers for Disease Control and Prevention
CDS	Clinical Decision Support
CHIPRA	Children's Health Insurance Program Reauthorization Act of 2009
CLIA	Clinical Laboratory Improvement Amendments
CMS	Centers for Medicare & Medicaid Services
CQM	Clinical Quality Measures
CRIS-e	Client Registry Information System-enhanced
CRO	Connecting Rural Ohio
CTSA	Clinical and Translational Science Awards
DO	Doctor of Osteopathy
DOD	Department of Defense
ED	Emergency Department (like ER)
EHR	Electronic Health Record
ELR	Electronic Lab Reports
ER	Emergency Room (like ED)
FCC	Federal Communications Commission
FFP	Federal Financial Participation
FQHC	Federally Qualified Health Center
GOA	Governor's Office of Appalachia
HHS	United States Department of Health and Human Services
HIE	Health Information Exchange
HIO	Health Information Organization
HIPAA	Health Insurance Portability and Accountability Act of 1996
HISPC	Health Information Security and Privacy Collaboration Initiative
HIT	Health Information Technology
HIT / HIE	Health Information Technology/Health Information Exchange
HITECH	Health Information Technology for Economic and Clinical Health Act
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration
I-APD	Implementation-Advanced Planning Document
IOM	Institute of Medicine

ACRONYM NAME OR PHRASE

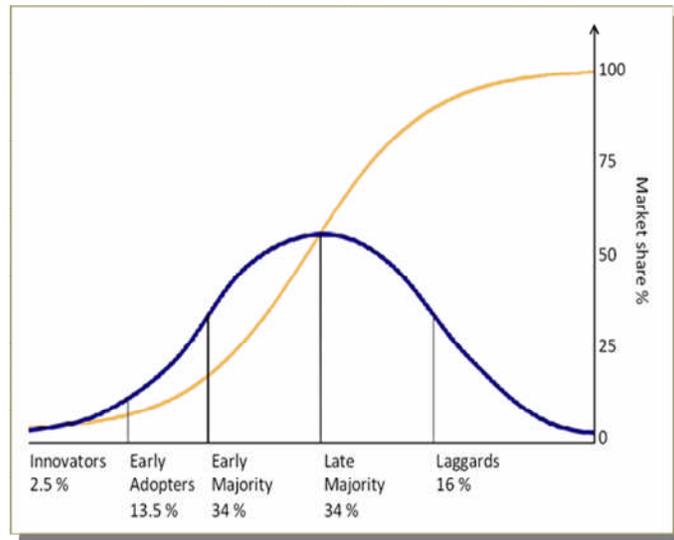
IT	Information Technology
MD	Medical Doctor
MITA	Medicaid Information Technology Architecture
MIT	Medicaid Information Technology System
MMIS	Medicaid Management Information System
MPIP	Medicaid Provider Incentive Program
MU	Meaningful Use
NHIN	National Health Information Network
NAAC	Net Average Allowable Cost
NICHQ	National Initiative for Child Healthcare Quality
NICU	Neonatal Intensive Care Unit
NIH	National Institutes of Health
NLR	National Level Repository
NPP	National Priorities Partnership
NPPES	National Plan and Provider Enumeration System
NTIA	National Telecommunications and Information Administration
O-CHIN	Oregon Community Health Information Network
OAAPN	Ohio Association of Advanced Practice Nurses
OACHC	Ohio Association of Community Health Centers
OB/GYN	Obstetrics and Gynecology
OCCN	Ohio Community Computing Network
ODH	Ohio Department of Health
ODI	Ohio Department of Insurance
ODJFS	Ohio Department of Job and Family Services
ODRS	Ohio Disease Reporting System
OFIS	Ohio Financial Information System
OHA	Ohio Hospital Association
OHIP	Ohio Health Information Partnership
OHP	Ohio Health Plans
OHQIS	Ohio Health Quality Improvement Summit
ONC	Office of the National Coordinator
OOA	Ohio Osteopathic Association
OPPDSN	Ohio Pediatric/Psychiatry Decision Support System Network
OPQC	Ohio Perinatal Quality Collaborative
OSC	Ohio Supercomputer Center
OSIS	Ohio Shared Information Services
P-APD	Planning-Advanced Planning Document
PCP	Primary Care Provider
PPACA	Patient Protection and Affordable Care Act
REC	Regional Extension Center
RHIO	Regional Health Information Organization
ROI	Return On Investment
RWJ	Robert Wood Johnson

ACRONYM	NAME OR PHRASE
SAMHSA	Substance Abuse and Mental Health Services Administration
SMA	State Medicaid Agency
SMHP	State Medicaid Health Information Technology Plan
SSA	Social Security Administration
TEOS	Treatment Episode Outcomes Systems
USPHTF	United States Preventive Services Task Force
VA	Veteran's Administration
VISN	Veterans Integrated Service Network
VOI	Volume Of Interest

Appendix D : Technology Adoption Curve

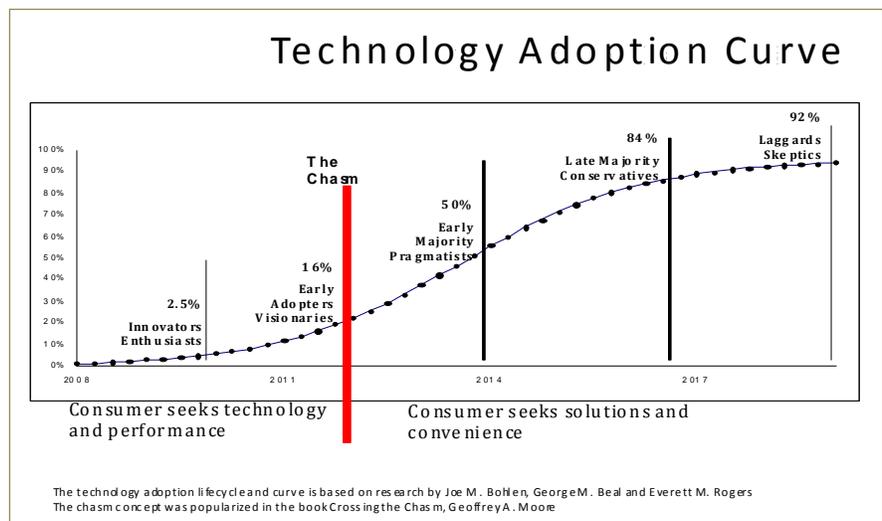
“Technology Adoption Curve” provides the best tool to project EHR adoption trends. The technology adoption lifecycle provides a model for adoption or acceptance of a new product or innovation, according to the demographic of defined group. When defined by group over time, the model is typically illustrated as a classical normal distribution or bell curve. Adopters are described by groups

- **Innovators** - tend to be willing to take risks, are younger, more educated and prosperous, social and have a tendency to closely associate with other innovators.
- **Early adopters** - also tend to be younger, more educated, have financial resources. They tend to have a greater range of choices than innovators and are often opinion leaders.
- **Early majority** – tend to be more conservative and have average social status. They open to new ideas but slower adopt change and influence within the community.
- **Late majority** – tend to be older, less educated, more conservative, less socially active and more skeptical regarding change or innovation.
- **Laggards** – tend to be averse to change, very conservative, older and less education and communication patterns are tied to a small group of family and friends.



as:

However, when the model is projected over time in an aggregated fashion it is reflected as an “S-curve,” rather than the bell shaped curve. Also, in this type of diffusion model, Moore and other researchers have found that the perspective of consumers or customers change over time, and therefore to be successful in

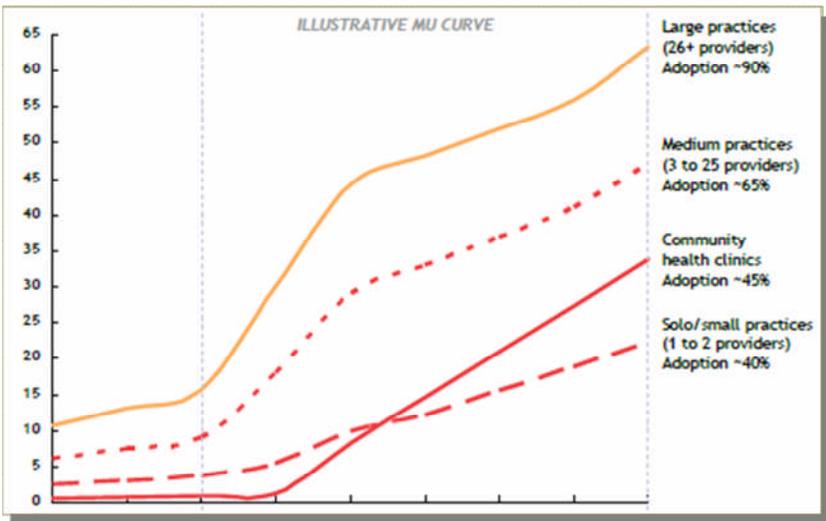


encouraging model the communication strategy must change at point referred to as “The Chasm.” This is the point at which customers’ adoption patterns change from being driven by innovation and performance to a preference for ease of adoption and convenience. At this point the “marketing” or communication approach must change in order to continue growth up the adoption curve.

Using these qualitative and quantitative data points, ODJFS has been mapping its projections for EP/hospital adoption and meaningful use of EHRs to improve health care quality, safety and efficiency. In the figure below, we have mapped the estimated projections for provider adoption based on several assumptions.

First, for several reasons, we believe that hospitals are and will continue to be innovators and early adopters of EHRs. Hospitals continue to face a number of challenges within this assumption. Although they may lead other providers in the adoption of EHR technologies across hospital settings, they face numerous challenges of interoperability within the hospital and integrated health network itself, much less the additional complexities with interoperability broadly across health care sectors. This was in part the reason for hospitals urging a scaling back of meaningful use requirements in stage 1. While successful at this stage of development, hospitals will need to overcome challenges of interoperability across health sectors, disciplines and technology within their own network to play a key role in support of interoperability across the broader community where most of health care occurs on a daily basis.

Second, from our meetings with stakeholders and review of the literature, it appears that size of the practice will have an impact on adoption rates. Larger practices may have the resources and skills necessary to undertake the adoption challenge. Careful



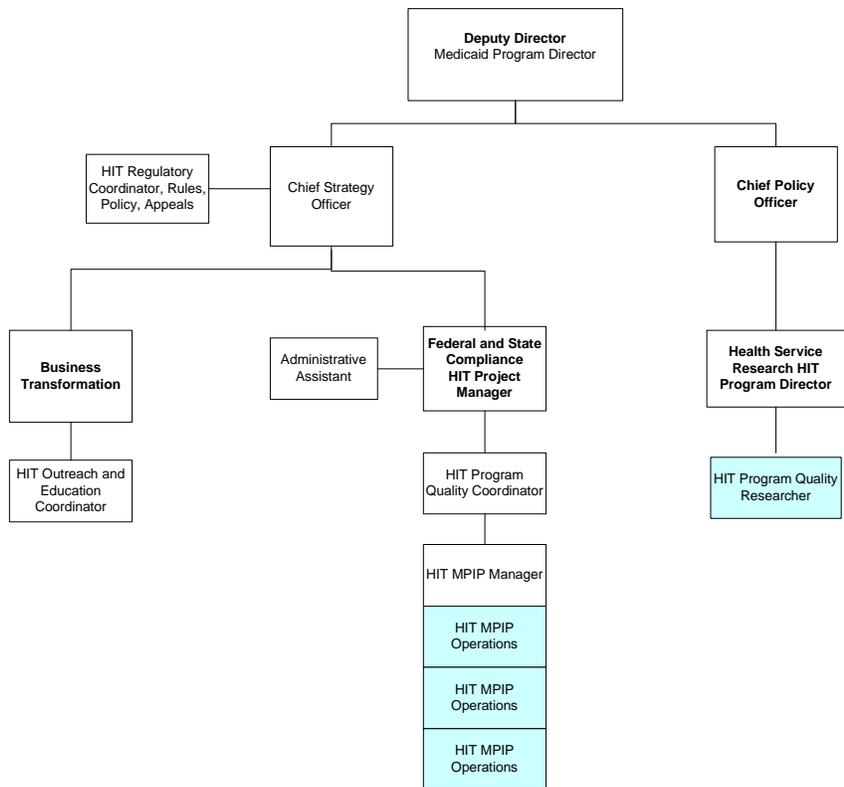
planning and effective change management will be critical in the success of and rapid uptake to address the issues of lost productivity during the installation and early implementation phases.

Third, rural and smaller practices face unique issues that HITECH has sought to address through focused technical assistance through the Regional Extension Centers (RECs). While their adoption may be slower, it is no less important and can be supplemented by learning community and telemedicine networks aimed at addressing their unique needs.

Appendix E: Ohio Health Plans HIT Table of Organization

As Of 11/11/2010

HIT TABLE OF ORGANIZATION OHIO HEALTH PLANS



**Ohio Medicaid
Electronic Health Records Survey
of
Eligible Practitioners:
Design, Methodology and Survey Findings**

Submitted to

The Office of Ohio Health Plans
The Ohio Department of Job and Family Services
50 West Town Street
Columbus, Ohio 43215

Submitted by



The Ohio Colleges of Medicine Government Resource Center
1033 North High Street
Columbus, Ohio 43201

October 15, 2010

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I. Abstract

The Electronic Health Records Survey (EHRS) assessed the health information technology (HIT) and health information exchange (HIE) status of Ohio high Medicaid volume practitioners who served at least 200 non-duplicated Medicaid patients in 2009. The EHRS surveyed six types of providers: (1) primary care physicians, (2) specialist physicians, (3) pediatricians, (4) dentists, (5) nurse practitioners, and (6) nurse midwives. The data gathered exhibits a moderate current use rate for electronic health records (EHR) in Ohio, with larger practices more likely to have installed or to be currently using EHR than smaller practices. Given the clustering of non-EHR practices in rural areas and among small group and single practices, adoption assistance of EHR will take a thorough education outreach to Ohio's provider community.

2. Introduction

Ohio's Medicaid agency sponsored the Electronic Health Records Survey (EHRS) to gather baseline information concerning Ohio's adoption rate of health information technology (HIT) and health information exchange (HIE), as proxied through measurements of electronic health records adoption (EHR). The EHRS is a survey research project that aims to assist the Ohio Department of Job and Family Services and Ohio Medicaid in the development of the State of Ohio Medicaid HIT Plan and aims to provide planning information for the Ohio Medicaid Provider Incentive Program.

Information from the EHRS will also serve as the basis of future tracking of the rate of

implementation of EHR for Ohio's medical/health practices and practitioners. In this sense, the EHRS functions as guiding information for the drafting and implementing Ohio's overall HIT Medicaid policy dialogue.

The overall goals of the EHRS are to: (1) develop an understanding of Medicaid provider's usage of EHR in their practices; (2) to assist the Ohio Medicaid Provider Incentive Program; and (3) to describe characteristics of EHR adoption in Ohio to assist outreach strategies for greater adoption of HIT and HIE by gauging characteristics of adopters and non-adopters.

A team of researchers and consultants from the Ohio Colleges of Medicine Government Resource Center developed the EHRS. The instrument used questions that had been pretested and implemented in prior surveys in other states (e.g., the Nevada Health Information Technology Survey and the Minnesota Health Information Technology Survey). The areas of questioning included:

- 1) Medical practice type;
- 2) Practice demographics;
- 3) Medicaid patient participation rates;
- 4) Whether the practice had purchased or was using an EHR;
- 5) Characteristics of the practice's EHR;
- 6) EHR functions used, including medical history, computer provider order-entry, clinical decision support, and practice management decision functions;
- 7) Proportion of staff using the EHR;
- 8) If no EHR, whether the practice was planning on getting an EHR; and
- 9) Main barriers to obtaining an EHR.

The team drew the survey's sample from a list of Medicaid practices that served at least 200 non-duplicative Medicaid patients within a 12 month period. The source for the list of Medicaid practices was the State Fiscal Year 2009 Medicaid Claims Data. The team set the EHR strata by types of providers.

3. Background

A great degree of health policy effort has gone into the examination of strategies to increase health provider quality, efficiency, and patient outcomes. The American Recovery and Reinvestment Act (ARRA) and the Patient Protection and Affordable Care Act (PPACA) position the adoption of EHR as a mechanism of medical costs control and quality improvement meant to compliment the national expansion of health care (Steinbrook, 2009). It is within these policy developments and the desire to improve quality, efficiency, and outcomes that Ohio Medicaid is pursuing the examination of Ohio-based EHR adoption and expansion. As an enticement for greater degrees of EHR adoption, Ohio is implementing the Medicaid Provider Incentive Program to assist practices having difficulties or reserve in adopting EHR.

Much research literature exists on the use of EHR as a medical practice improvement. Chaudhry et al. reviewed practice impacts related to the adoption of health information technologies, health exchange technologies, and electronic health records and found that health services institutions (defined as academic, commercially developed, and large group practices) experienced marked increases in health quality, health services, and positive patient feedback (Chaudhry et al., 2006). Simon et al. found

in 2005 that while 45% of physicians used some sort of EHR (not necessarily a EHR systems), only 23% of practices had a functioning EHR system – these numbers increased in 2007 to 35% of practices with large practices accounting for most of the increase (Simon et al., 2007; Simon et al., 2009). The authors found that the most pressing barriers to EHR adoption were, in rank order, financial start-up costs, ongoing financial commitment in terms of personnel costs and system maintenance, security concerns, and loss of productivity related to system use-time commitment. These barriers clustered among smaller practices. Ash and Bates found that physicians and practice office managers diverge in their support of EHR; office managers have a much more positive reaction than physicians to EHRs, with the main caution for physicians being disrupted workflow and time stress (Ash & Bates, 2005). In terms of most utilized EHR functions, Simon et al. found that billing, electronic prescriptions, and patient health records were the dominant functions for those with EHR systems (Simon et al., 2009). In a meta-analysis of 256 studies, Shekelle et al. established that adoption of EHR enables a significant increase in the delivery of health care, making care delivery safer, more effective, and more efficient – this improvement is particularly the case for practices that implement interoperable HIT systems around an EHR (Shekelle, Morton, & Keeler, 2006).

4. Methods

A. Sampling Technique

The 2010 EHRS research team drew the sample of eligible practices from de-identified 2009 Medicaid provider / claims / encounter data provided by the Ohio Department of Job and Family Services, Office of Health Plans. The universe is all medical practices whose non-duplicative Medicaid patient load was 200 or more in SFY 2009. The research team had two reasons for using this filter for constructing the sample universe: (1) a size of 200 non-duplicative Medicaid patients would provide a critical mass of practitioners for Medicaid's EHR adoption incentives, and (2) a size of 200 non-duplicative Medicaid patients would assist with the weighting of data to determine a calculation of practitioners serving Medicaid enrollees. The number of units included in the universe was 8,007 practices. The breakout of practices by provider categories was: (1) 2,774 primary care physicians, (2) 3,093 medical specialists, (3) 993 pediatricians, (4) 837 dentists, and (5) 303 nurse practitioners/nurse midwives. To enhance the ability of the survey team to collect data, the team merged the sampling frame with a commercially available list of all providers in Ohio with NPI numbers from <http://www.hipaaspace.com>. This list provided additional information on practice address, practice phone number and fax number.

The sample was adjusted between the practice categories, seeking a base of at least a 20% response rate. With a sample of 4,843 practices chosen, 935 completed surveys were returned – for a response rate of 19.31%.

B. Data Collection

Data collection used a mixed-mode approach. Initially, the team distributed the EHRS as a mail survey. The protocol for data collection approximated Dillman's Tailored Design Method and employed mail, fax, and telephone collection (Dillman, Smyth, & Christian, 2008). The first introduction to the medical practices was a letter from the Ohio Medicaid Director. This letter explained the purpose of the survey, along with expectations of the topics, timelines, and that Medicaid was using the survey to determine the potential enrollment into the Ohio Medicaid Provider Incentive Program. After the initial letter, the survey vendor sent the survey instrument to the practice with a postage paid envelop. After a period of two weeks, the vendor sent a reminder postcard to practices that had not responded to prior contacts. Shortly after sending the postcard, an additional survey was sent to non-respondents. The research team solicited and received the provider associations' support to communicate with their members, encouraging them to complete the survey. After another two-week period, the survey vendor sent an additional postcard that requested participation.

The sample collection to this point, approximately four weeks into data collection, was 381 responses. In order to increase the response rate, the researchers and graduate assistants starting telephoning practitioners to encourage completion of

the survey. The research team offered practices four options for survey collection: (1) return through the mail, (2) e-mail back to the research team, (3) fax to the research team, and (4) complete the survey via phone interview with one of the research team members. After a six-week period for total data collection, the return count was 935 surveys, resulting in a response rate of 19.31%.

C. Data Cleaning, Recoding, and Weighting

A methodological caveat is that data re-coding, corrections, and weighting schemes for this initial report are preliminary. A future report will detail further analyses of recoding, missing data and weight corrections for missing data, geo-referenced distribution of practices and predictions of physicians using EHR, and data modeling. Accordingly, we consider the statistics in this report to be descriptive and preliminary and will expand and possibly adjust these reports findings upon further analyses.

Once the surveys were collected, they were input into a fixed format. Recoding of data was limited to issues of errant input (e.g., out of range values), the collapsing of advanced practice nurses and nurse midwives into a provider category, and recoding of practice sizes adapting Ketcham, Baker, and MacIsaac's categories for performance and technology integration (Ketcham, Baker, & MacIsaac, 2007). The research team set these categories:

- 1) One provider for independent practices;
- 2) Two to five providers for very small practices;
- 3) Six to nine providers for small practices;
- 4) Ten to nineteen providers for medium-small practices;

- 5) Twenty to forty-nine providers for medium size practices;
- 6) Fifty to two-hundred providers for large practices; and
- 7) Two-hundred and one-plus providers for mega practices.

The rationale for these breakdowns is that the EHR literature indicates that larger practices implement EHR systems much more so than independent to small firms do (Gans, Kralewski, Hammons, & Dowd, 2005; Bramble et al., 2010; Dean et al., 2009).

As noted, the data re-coding, corrections, and weighting schemes for this initial report are preliminary, further analysis of missing data and weight corrections for missing data, distribution of practices and additional geo-referenced predictions of physicians using EHR will be detailed in a future report. Accordingly, we consider the reported statistics to be a baseline for further adjustment once additional comparative data is available to adjust these findings to geographic reference and future missing data corrections.

The weighting scheme for these data utilized an estimator to achieve proportions from the reference list for the sample. The formula employed was $3N_{(i)}/N * (\hat{p}_{(i)})$. This weight was performed across the five strata and was applied to three subpopulations:

- (1) All Medicaid eligible practices from the reference list with 200 or more Medicaid patients within a 12-month period;
- (2) Medicaid practices from the reference list with 200 or more Medicaid patients with no EHR;
- (3) Medicaid practices from the reference list with 200 or more Medicaid patients with EHR.

The weighted results were the sample proportions for each subpopulation, which were applied as estimators for statistical analyses. The final population predictions were 8,000 for practices having Medicaid enrollment above 200 Medicaid patients, with 4,323 estimated to have Medicaid enrollment above 200 Medicaid patients with no EHR, and 3,457 for Medicaid enrollment above 200 Medicaid patients with EHR.

Concerning the prediction of total practitioners within practices having or not having EHR, the researchers established an upper boundary for statistical calculations by examining State of Ohio licensing board tallies for medical doctors, osteopathic practitioners, orthopedic practitioners, medical specialists, dentists, advanced practice nurses, and midwife practitioner. These tallies were collapsed into three categories: physicians, dentists, and advanced practice nurses/midwives⁸. The team recoded these tallies to include only Ohio practices – excluding out of state or out of country locations from these analyses. The recoded numbers were 30,841 physicians, 6,035 dentists, and 5,088 nurse practitioners/midwives.

Using these numbers as a base, we calculated the estimated number of practitioners practicing per Medicaid provider number and found this estimate to be 1.312. In other words, we estimate 10,496 practitioners see more than 200 Medicaid patients within a year. Additionally, we estimate that approximately 25% of practitioners in Ohio treat more than 200 Medicaid patients in a year – based on the assumption that this percentage is evenly distributed throughout all provider numbers in Ohio. In the future,

⁸ APNs and Nurse Midwives were collapsed into one category, solely because the sampling frame and response rate was not sufficient to support estimates for each category separately.

we expect to perform geo-coding analyses that will give a more accurate estimator per proportion of practitioners seeing more than 200 Medicaid patients. To control the reporting of all practitioners by group practices, whether they met the threshold of 200 Medicaid patients within a year or not, we applied a 25% corrective to the number of practitioners reported for group practices. This corrective enabled the controlling of false positives reported by practice office managers. The team defines group practices as multiple practitioners per one Medicaid provider assignment.

5. Data Analysis

These analyses utilized stratified sampling methods. In order to do this, $N(i)$ all strata must be known and $N(1) + N(2) + N(3) \dots N(i)$ must sum to N . A simple random sample was then taken independently from each $N(i)$, resulting in sample proportions for different variables. According to Lohr, a proportion is the mean of a variable that takes on values 0 and 1 (Lohr, 1999). Hence, estimating the total number of population units having specified characteristics is the sample proportion multiplied by the population.

The stratified sampling estimator for \hat{p} can be expressed as a weighted sum of individual sampling units $\hat{p} = \sum N(i)/N * (\hat{p}_{(i)})$. This is done because there are disproportionate samplings across the strata. The researchers extracted the tallies of the $N(i)$'s from the population of the Medicaid practices from the reference list with 200 or more Medicaid patients within a 12 month period, giving a strata of primary care physicians for which $N(pc) = 2,774$, of which we sampled $n(pc) = 1,355$ or approximately

49%. Due to a small sample of nurse practitioners/nurse midwives, the population of the strata is $N(np) = 303$, of which we sampled $n(np) = 303$ or 100%. The result is that a primary care physician has a weight of 2 and a nurse practitioner/nurse midwife has a weight of 1. In other words, a primary care physician represents her/his self and one other in the survey and nurse practitioner/nurse midwife only her/his self. Thus, the sampling weight is simply the reciprocal of the probability of selection – this weighting scheme was also utilized on the other two subpopulations as well (Lohr, 1999).

Analysis performed on two subpopulation's of (1) Medicaid practices from the reference list with 200 or more Medicaid patients without EHR and (2) Medicaid practices from the reference list with 200 or more Medicaid patients with EHR were done with $E[N(i)]$'s and an $E[N]$ based on the survey results (see appendix).

The researchers made many assumptions made when calculating the practitioner's per provider estimate (PPP) – primarily that the estimated number of practitioners was correct based on the most current data. For instance, conceptually we understand that the estimated number of practitioners could vary slightly due to the current economic conditions forcing some practitioners out of business, and that most practitioners' work activities naturally vary. Given these caveats, we estimate that the PPP for all Medicaid practices from the reference list with 200 or more Medicaid patients within a 12-month period was 1.312. The equivalent PPP number for those without an EHR is 1.15, and the PPP number for those with an EHR is 5.99. With these PPP numbers, we estimated the number of practitioners from the estimated number of Medicaid practices.

Because the sample sizes within each stratum were large, we assumed normality. The central limit theorem used in the construct of this interval can be found in Krewski and Rao (Krewski & Rao, 1981). Applying the weighted \hat{p} , we calculated 90% confidence intervals using the formula $\hat{p} \pm Z\left(\frac{\alpha}{2}\right) * (SE)^{\frac{1}{2}}$.

Although the team could have used a finite population correction (FPC) term to reduce the variance because of known populations, we took a conservative approach, given that a number of assumptions for a FPC were left out of our analysis. In summary, we assume normality for all results due to sample size, independence across strata, and constant variance.

6. Results

Overall results of the EHRS include:

- (1) the rate of EHR adoption and use is higher for large practices and lower for small and independent practices;
- (2) Functional use of EHR is primarily for billing, patient records, electronic prescriptions, and patient diagnoses assistance;
- (3) The main barriers to implementing EHR are related to financial costs, security concerns, a lack of interoperability with other computer systems, and belief that EHR is unnecessary;
- (4) The expansion of EHR among small and independent practices will take thorough outreach – expected to be primarily to Ohio’s rural areas.

Table 1 Practice Size Categories Surveyed (unweighted)

Practice Size Categories	Total Number of Practices Surveyed	Practices with EHR (percent)	Practices without EHR (percent)
Individual (1 practitioner)	510	154 (30.2%)	356 (69.8%)
Very Small Group (2-5 practitioners)	222	79 (35.6%)	143 (64.4%)
Small Group (6-9 practitioners)	61	34 (55.7%)	27 (44.3%)
Medium Group 1 (10-19 practitioners)	40	28 (70.0%)	12 (30.0%)
Medium Group 2 (20-49 practitioners)	33	22 (66.7%)	11 (33.3%)
Large Group (50-199 practitioners)	13	11 (84.6%)	2 (15.4%)
Very Large Group (200 or more practitioners)	6	6 (100%)	0 (0.00%)
Total	885	334 (37.7%)	551 (62.3%)
935 Records, 885 Records Usable (50 with missing data)			
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients			

Table 1 shows the raw (unweighted) total number of surveys collected by practice size, comparing practices with EHR to practices without EHR. The EHR adoption ranges are from 30.2% for individual practices (n=1), to 100% for very large practice (n ≥ 200). This wide adoption range may be attributable to many causes, but literature would indicate that the larger a practice size, the more need for EHR and the more resources to maintenance an EHR (Gans, Kralewski, Hammons, & Dowd, 2005; Bramble et al., 2010). For those with EHR, most are located in and around Ohio’s metropolitan areas. Future research will examine the variations for how EHRs are being used throughout Ohio’s geographic regions.

Table 2 Distribution of High Volume Practices by Electronic Health Record Patient Volume Threshold

Medicaid Patient Volume Count	Total Number of Practices	Total Number of Professionals (Weighted)	LCL @ .90	UCL @ .90
Below Threshold	361	4,829	4,548	5,111
At or Above Threshold	574	5,667	5,385	5,837
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients				

Table 2 indicates that of the predicted 10,496 medical practitioners who have 200 or more Medicaid patients within their practices, approximately 5,667 or 54% are eligible for the Ohio Medicaid Provider Incentive Program.

Table 3 details a comparison between the likelihood of applying for either the Medicare and Medicaid incentive programs and reports that a significant amount of practices are uncertain about applying for the Ohio Medicaid Provider Incentive Program (most of these practices being small or independent practices),

Table 3 Planning to Apply for Medicaid Provider Incentive Program by Type of High Volume Practice

	Percent of High Volume Practices who will Apply for Medicaid Incentive				
Medicaid Patient Volume Percent	Medicare	Medicaid	No	Not Sure	Unclear or Needed more Information
Below Threshold	15.67%	8.26%	15.38%	50.71%	9.97%
At or Above Threshold	2.80%	35.14%	13.11%	42.48	6.47%
Practices surveyed from Ohio Medicaid records with 200 more or Medicaid patients.					

Examining eligibility for the Ohio Medicaid Provider Incentive Program by practice type, pediatricians have the highest eligibility (53.59%), followed by dentists (32.63%), physician specialists (31.30%), nurse practitioners/nurse midwives (25.64%), and primary care physicians (14.75%), respectively (Table 4).

Table 4 Eligible Practitioners Meeting Patient Volume Criteria

	Percent of High Volume Practices by Practice Type who will Apply for Medicaid Incentive				
Medicaid Patient Volume Percent	Primary Care	Pediatrics	Physician Specialist	Dentist	Nurse Practitioner/ Nurse Midwife
Below Threshold	7.35%	34.78%	2.75%	11.59%	33.33%
At or Above Threshold	14.75%	50.98%	31.54%	33.33%	25.64%
Practices surveyed from Ohio Medicaid records with 200 more or Medicaid patients.					

The total weighted number of practitioners expecting to apply for the Medicaid Provider Incentive Program is 1,708. This number does not count those practices that reported being unsure if they would apply. As Table 5 indicates, pediatric practices reported the strongest interest in the Ohio Medicaid Provider Incentive Program for those who meet the patient volume threshold. They were the only provider category where more than 50% of the practices reported planning to apply for the incentive. Just over 30% of specialist and dental practices reported plans to apply, compared to 26% for nurse practitioner/nurse midwife practices and only 15% for primary care practices.

Eligible Professional Type	Number of Eligible Practitioners who indicated they will Apply for Medicaid			
	Number of Practices (weighted)	Percent Meeting Volume Criteria Who Will	Number of Responses	Total Number Meeting Volume
Primary Care	252	14.75%	9	61
Pediatrics	574	50.98%	78	153
Physician Specialists	530	31.54%	41	131
Dentist	266	33.33%	63	190
Nurse Practitioners/ Nurse Midwife	86	25.64%	10	39
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients				

Table 5 Planning to Apply for MPIP by Patient Volume Threshold

Table 6 details what types of practices have installed EHRs. Less than half of practices in each category reported an installed EHR. Dental practices reported the lowest rate of EHR installation, 16.84%), with primary care practices having the highest proportion (47.54%). A possible explanation of the low dental use of EHRs is that many

dental practices have a smaller financial margin, particularly for smaller practices (Mendonca, 2008).

Table 6 *Percent of Eligible Practitioners that meet the Volume Criteria by whether they have installed an EHR*

Eligible Practitioners Type	Estimated Practitioners	Installed EHR	Above Volume Threshold	Percentage Above Volume Threshold with EHR
Primary Care	812	29	61	47.54%
Pediatrics	500	68	153	44.44%
Physician Specialist	590	46	131	35.11%
Dentist	134	32	190	16.84%
Nurse Practitioner/ Nurse Mid Wife	156	18	39	46.15%
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients				

Table 7 shows the types of automated systems that eligible practices use. Most practices use office management systems (61.64%). “Point of sale” systems are the least used, usually to implement electronic transfer of funds for services rendered. Literature suggest that online scheduling options are increasing, but the EHRs respondents are lower for online scheduling than the national average of 31% (National Institutes of Health, 2009).

Table 7 *Implementation of Automated Systems for High Volume Practices without an EHR*

Automated System	High volume practices without an EHR that have Automated Systems for Administrative tasks
Point of Sale System	11.47%
Management System	54.97%
Online Scheduling System	22.95%
All of the Above	5.14%
Any of the Above Listed Systems	61.64%
None of the Above Listed Systems	38.36%
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients	

Literature suggests that the main reasons EHRs are not implemented are EHRs: (1) are too expensive to buy and maintain, (2) raise health record security concerns, (3) are time intensive, and (4) support staff has insufficient knowledge to capability operate EHRs (Bramble et al., 2010; Terry et al., 2009). The Ohio responses roughly follow the literature, but rank the top reasons for not having an EHR as expense, security/privacy concerns, staff satisfaction with a paper-based system, and a lack of computer system interoperability (Table 8). Given the large amount of independent and small practices in our sample, these reasons might be understandable, as small practices have less resource reserves.

Table 8 *Reasons Practice does not have and Electronic Health Records System*

Reason	Percent w/o Agreement	LCL @ .90	UCU @ .90
Too expensive	65.43%	62.09%	68.77%
Security/privacy concerns	32.92%	29.61%	36.22%
Staff is satisfied with paper-based record systems	32.81%	29.51%	36.11%
EHRs lack interoperability with other information systems, resulting in high interface costs	32.06%	28.79%	35.34%
Staff does not have the expertise to use an EHR	23.44%	20.46%	26.42%
Concern that EHR choice will quickly become obsolete	22.75%	19.80%	25.69%
Decreased office productivity during implementation and initial use	20.51%	17.67%	23.35%
No currently available EHR satisfies our needs	19.35%	16.58%	22.13%
Insufficient internal knowledge and technical resources	17.36%	14.70%	20.02%
Confusing number of EHR choices	12.93%	10.57%	15.28%
Other	19.73%	16.94%	22.53%
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients			

Survey respondents varied in how their practices tend to prescribe medications. Eighty percent did not use any automated system to order medication; while, 27.9% use

an isolated e-prescribing system, 4.8% use a local computer, and 4.8% use a web-based application. Eighty-seven percent without an EHR system do not use electronic transmission for prescribing pharmaceuticals (Table 9). On the other hand, 81% of practices with an EHR reported generating and transmitting prescriptions electronically (Table 10).

Table 9 Prescribing Practices of Practitioners without an EHR

Reason	Prescribing Practices of Practitioners without EHR		
	Percent of Agreement	LCL @ .90	UCU @ .90
Use e-prescribing system	12.02%	9.73%	14.30%
Use a local computer system	3.44%	2.16%	4.72%
Use a web-based application	4.06%	2.68%	5.45%
We do not use a system to support order medication or prescribing	79.94%	77.13%	82.76%
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients			

Most practices utilize multiple functions of their EHR. Table 10 identifies the 15 mandatory categories of meaningful use for Stage 1 of the EHR incentive program. The top 6 rankings of meaningful use are patient demographics (100%), safe medication tracking (e.g., keeping aware of allergic reactions) (97.95%), active medication tracking (97.95%), vital record signs and charts (95.10%), clinical summaries for office visits (89.56%), and patient privacy for medical records (89.13%) (Table10). The lowest meaningful use categories are the implementation of one clinical decision (e.g., unified electronic diagnoses) (49.41%) and reporting of clinical quality measures to outside entities (57.55%). All meaningful use categories have relatively high use, except for one clinical decision functions. Overall, 27.9% of the Medicaid providers with EHRs are using their EHR to meet ALL of the mandatory meaningful use criteria.

Table 10 Practices with Electronic Health Record Systems by Percent with Meaningful Use

Categories of Meaningful Use	Percent of Providers Using EHRs		
	Percent with Meaningful Use	LCL @ .90	UCU @ .90
Patient Demographic Information	100.00%	99.90%	100.00%
Record vital signs and chart changes	95.10%	93.21%	97.00%
Maintain active medication list	97.95%	96.71%	99.20%
Maintain active medication allergy list	98.71%	97.72%	99.70%
Record smoking status for patients 13 and older	86.95%	83.99%	89.91%
Provide clinical summaries for each office visit	89.56%	86.87%	92.24%
Provide patients with an electronic copy of their health information	72.21%	68.28%	76.15%
Generate and transmit prescriptions electronically	81.35%	77.93%	84.77%
Computer provider order entry for medication orders	87.43%	84.52%	90.34%
Implement drug-drug and drug-allergy checks	76.29%	72.56%	80.03%
Electronically exchange key clinical information among providers and patient authorized entities	62.77%	58.52%	67.01%
Implement one clinical decision support rule and track compliance with the rule	49.41%	45.02%	53.80%
Implement systems to protect privacy and security of patient data	89.13%	86.39%	91.86%
Report clinical quality measures to an outside entity (Quality Improvement collaborative, payer, etc.)	57.55%	53.21%	61.89%
Percent that meet all Meaningful Use Categories	26.19%	30.22%	34.25%
Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients			

Practices report a large variety of EHR vendor systems installed, with no vendor serving a large proportion of the providers. The top five vendors in the market are reported to collectively have a market share of 24.89%. No other single vendor had a market share greater than 2% (Table 11).

Table 11 Use of Electronic Health Record System by Vendor or Manufacturer

EHR Vendor	Percent of Practices Using or Installing
Henry Schein	9.28%
Allscripts	6.75%
GE	3.38%
CareStream Health	2.95%
Patterson Dental	2.53%
Other	75.11%

Practices surveyed from Ohio Medicaid records with 200 more or Medicaid patients.

Almost two-thirds of practices with EHRs (65%) reported not participating with HIEs (Table 12). For those participating, they were more likely to have a service agreement with an institutional provider (21.38%) or a vendor or intermediary to an exchange service (20.95%). Only 4% reported having an HIE agreement with a non-profit HIO.

Table 12 Practices with an EHR system Connection to HIE Services

Type of Agreement for HIE Services	Percent of Practices who Connect EHRs to HIE Services
Direct agreement with at least one other clinic / hospital / health system	21.83%
Use a vendor or intermediary exchange service	20.95%
Use a non-profit Health Information Organization	4.34%
Other (please specify)	6.05%
No Connection to HIE Services	65.24%

Practice sizes surveyed from Ohio Medicaid records for practices of 200 or Medicaid patients

Table 13 compares plans having or not having an EHR by practice types. Overall, most practitioners have either an EHR or are planning to obtain one. For primary care practitioners, 91.5% are either have an EHR or are planning to obtain one in the near future. Comparative percentages are 90.1% for pediatricians, 90.2% for advanced practice nurses/nurse midwives, 84.9% for specialists, and 45.1% for dentists. The low rate of EHR adoption for dentists might be associated with stressed resource margins for

many dental practices and the increase of dental practices within community health, community sponsored, setting (Shields et al., 2007; Mendonca, 2004).

Table 13 Professionals EHR status

Professional type	Expected Total Number of Practitioners (weighted)	No EHR and No Plans to get one	No EHR but plan to obtain one	Have Purchased and or installed an EHR
Primary Care	3,639	310	1,608	1,721
Pediatrics	1,303	129	583	591
Physician Specialist	4,058	614	1,495	1,949
Dentist	1,098	603	290	205
Nurse Practitioner/ Nurse Mid Wife	398	38	170	189

Practices surveyed from Ohio Medicaid records with 200 more or Medicaid patients.

According to Table 14, a large percentage of practitioners who meet the volume threshold requirements and who have or plan to get an EHR remain unsure if they will apply for the Medicaid provider incentive payment – (54%) for those planning to obtain an EHR and 48% for those who already have an EHR. Another 6% of these practitioners who have an EHR report planning not to apply for an incentive payment. These two groups of practitioners appear ready for outreach and education on the incentive payment opportunity.

Table 14 Practitioners Above Threshold Application Plans for Incentive

Current Application Plan	No EHR but plan to obtain one	No EHR but plan to obtain one	Have Purchased and or installed an EHR	Have Purchased and or installed an EHR
Medicare	47	1.79%	129	5.70%
Medicaid	1,102	42.15%	926	40.93%
No	59	2.24%	129	5.70%
Not Sure	1,407	53.81%	1,079	47.67%

Practices surveyed from Ohio Medicaid records with 200 more or Medicaid patients.

Table 15 indicates that there are also practitioners who reported not meeting the patient volume threshold who intend to apply for the Medicaid incentive payment program. An even larger percentage of these practices report being unsure if they will apply for either the Medicaid or the Medicare incentive payment opportunities. These practitioners also show a need for outreach and education on the incentive payment opportunities.

Table 15 Practitioners Below Threshold who Have Indicated they Would Apply for Incentive if Eligible

Current Application Plan	No EHR but plan to obtain one	No EHR but plan to obtain one	Have Purchased and or installed an EHR	Have Purchased and or installed an EHR
Medicare	196	21%	184	20%
Medicaid	116	12%	65	7%
No	80	9%	47	5%
Not Sure	545	58%	641	68%
Practices surveyed from Ohio Medicaid records with 200 more or Medicaid patients.				

Table 16 explores whether the plan to apply for the Medicaid incentive payment varies by practice size. It compares individual and small practices with the other group practices and shows that a higher percent of the individual/small group practices plan to apply for the Medicaid incentive payment and a larger percent of the middle/large group practice are unsure what they will do. A sizeable percent of the individual/small group practice report being unsure what they will do.

Table 16 Planning to Apply for MPIP by Type of Practice

Number of Eligible Practitioners who indicated they will Apply for Medicaid Working in Either a Group Site or Independently								
Current Application Plan	Independent Percent	Estimated number of Professionals practicing Independent	Group Sites with 2-5 Percent	Estimated number of Professionals in a Group Site with 2-5 Professionals	Group Sites with 6-49 Percent	Estimated number of Professionals in a Group Site with 6-49 Professionals	Group Sites with 50 or more Percent	Estimated number of Professionals in a Group Site 50 or more Professionals
Medicare	2.69%	101	0.79%	11	5.19%	45	5.88%	23
Medicaid	38.32%	1,442	36.22%	518	23.38%	203	26.47%	101
No	17.07%	642	9.45%	135	5.19%	45	5.88%	23
Not Sure	41.92%	1,577	53.54%	766	66.23%	575	61.76%	237
Total Professionals		3,762		1,431		867		383
Total Percent of Professionals Above the Threshold	58.39%		22.20%		13.46%		5.94%	

7. Summary

Electronic health record technology is progressing in terms of adoption and types of meaningful use in Ohio. The Electronic Health Record Survey's main findings are:

- (1) Ohio has a gap between the types of medical practices who have and who are without EHRs. Dentists and specialists rank lowest for EHR usage and future intentions to employ an EHR system into their practice.
- (2) The gap in EHR adoption for practices varies according to practice size, with medium to large practices having substantial rates of EHR adoption (practices above 200 practitioners have universal adoption) and small and independent practices having much lower rates of EHR adoption. Referring to literature, the reasons for this gap may be geographical location, limited practice financial

resources, the availability of practice support personnel, initial loss of productivity, and time constraints that may inhibit EHR implementation.

(3) The main functional uses of EHR are primarily for patient demographics, medication tracking, vital records review, clinical summaries for office visits, patient health information security, clinical visit summaries, electronic prescribing, and administrative functions. Surprisingly, quality control functions and clinical decision functions ranked low in for the EHRS respondents – this varies from national findings.

(4) The main barriers to implementing EHR were that the systems are too expensive, security and privacy concerns for the practice and patient information, staff being satisfied with paper records processes, and the fear of a lack of interoperability with current computerized systems. A major barrier in the literature was productivity decline and time demands for EER. These reasons were only of moderate concern for the EHRS respondents.

(5) While most practices report having or planning to obtain an EHR, more practices report being unsure if they will apply for Medicaid or Medicare incentive payments than report planning to apply for either incentive payment opportunity.

(6) The meaningful expansion of EHR in Ohio will take intensive educational and promotional effort. Most of the practices reporting being without EHR were either small or independent practices and were clustered within Ohio's rural areas (a geographic-reference report will be developed by the research team as a follow-up to this report). These practices reported more concern with the costs, time demands, support personnel training, and staff resistance to EHRs. To overcome a highly distributed need, planners for the expansion of EHRs will need to be able to sustain an intense outreach throughout all of Ohio. The State Medicaid Health Information Technology Plan outlines the parameters of the needs.

8. Reference List

Ash, J. S. & Bates, D. W. (2005). Factors and forces affecting EHR system adoption: report of a 2004 ACMI discussion. *Journal of the American Medical Informatics Association, 12*, 8-12.

Bramble, J. D., Galt, K. A., Siracuse, M. V., Abbott, A. A., Drincic, A., Paschal, K. A. et al. (2010). The relationship between physician practice characteristics and physician adoption of electronic health records. *Health Care Management Review, 35*, 55-64.

Chaudhry, B. C., Wang, J., Wu, S., Maglione, M., Mojica, W., Roth, E. et al. (2006). Systematic review: impact of health information technology on quality, efficiency, and costs of medical care. *Annals of Internal Medicine, 144*, 742-752.

Dean, B. B., Lam, J., Natoli, J. L., Butler, Q., Aguilar, D., & Nordyke, R. J. (2009). Use of electronic medical records for health outcomes research a literature review. *Medical Care Research and Review, 66*, 611-638.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2008). *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. (Third ed.) Hoboken, N.J.: Wiley & Sons, Inc.

Gans, D., Kralewski, J., Hammons, T., & Dowd, B. (2005). Medical groups' adoption of electronic health records and information systems. *Health Affairs, 24*, 1323-1333.

Ketcham, J. D., Baker, L. C., & MacIsaac, D. (2007). Physician Practice Size And Variations In Treatments And Outcomes: Evidence From Medicare Patients With AMI. *Health Affairs, 26*, 195-203.

Krewski, D. & Rao, J. N. K. (1981). Inference from stratified samples: properties of the linearization, jackknife and balanced repeated replication methods. *The Annals of Statistics, 9*, 1010-1019.

Lohr, S. L. (1999). *Sampling: Design and Analysis*. Belmont, California: Duxbury.

Mendonca, E. A. (2004). Clinical decision support systems: perspectives in dentistry. *Journal of Dental Education, 68*, 589-597.

Shekelle, P. G., Morton, S. C., & Keeler, E. B. (2006). *Costs and benefits of health information technology*. (Rep. No. 132).

Simon, S. R., Kaushal, R. K., Cleary, P. D., Jenter, C. A., Volk, L. A., Poon, E. G. et al. (2007). Correlates of electronic health record adoption in office practices: a statewide survey . *Journal of the American Medical Informatics Association*, 14, 110-117.

Simon, S. R., Soran, C. S., Kaushal, R., Jenter, C. A., Volk, L. A., Burdick, E. et al. (2009). Physicians' use of key functions in electronic health records from 2005 to 2007: a statewide survey. *Journal of the American Medical Informatics Association*, 16, 465-470.

Steinbrook, R. (2009). Health care and the American Recovery and Reinvestment Act. *New England Journal of Medicine*, 360, 1057-1060.