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JANENE CULUMBER

PHYSICIAN EMR ADOPTION IN AN ACADEMIC SETTING[1]

This data confirms my worst fears…the physicians are not ready for change. How can I move this organization to electronic workflows if key leaders needing to change aren't ready?

Mark Hulse, Chief Information Officer at *Moffitt Cancer Center* wondered out loud as he stared at the results of the survey used to determine organizational readiness for change. Much about this implementation seemed to be different from his prior experiences: the academic setting, the physician led leadership structure, the regulatory requirements driving change, and the government incentives to reduce the financial burden of implementation.

Hulse's decision of how to proceed was influenced by a number of issues. First, electronic clinical documentation was implemented but very few physicians had adopted the technology, as it was more cumbersome then their current process. Attempts to push adoption had resulted in considerable frustration from the physicians. Second, the organization was running out of time. To earn government incentives for meaningful use (approximately $6 million), certain aspects of the electronic records had to be in place in six months. The project was plodding along, but it was feasible to continue with the current path and implement just enough to meet the requirements for year 1. But after the initial year, the next phase would be Computerized Provider Order Entry, requiring even further adoption and significant clinical workflow changes. The risks would continue to compound making it challenging to hit stage 1 in time to achieve any incentives.

Both Hulse and Dr. Phil Smith, the Chief Medical Information Officer, believed there was another alternative. The organization needed to change its view from an IT driven project to an institutional change in clinical and operational workflows. But, that would entail a much longer process and would require the organization to forgo the significant financial incentives. Would the executive leadership even entertain such an idea?

Hulse and Smith stared at each other; they both knew neither proposition was without great risk. They were already receiving angry emails from physicians and the executive team was anxious, to say the least.

Hulse sighed, "This is not going to be an easy decision to make."

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Healthcare Provider Industry

At the time of the case, *Moffitt Cancer Center* (*Moffitt*) was a large healthcare organization that included a 206 bed hospital, a large physician practice and a research institute; all of which were dedicated to the mission of contributing to the prevention and cure of cancer. The healthcare industry was tumultuous during this time period as there was tremendous change in healthcare reform legislation at both the state and federal level. Each of these reforms created their own set of challenges in terms of implementation cost, adoption and competitive market position. To mitigate some of the pressures of all this change, the government put in place incentives to encourage early adopters. In situations where there were no government incentives, the market was reacting and creating its own incentives to showcase quality and improve cost effectiveness. Reducing costs and improving quality quickly became market imperatives.

At a time when investments in infrastructure were high, the government payers were reducing reimbursement creating tremendous budgetary pressures on healthcare provider organizations. Because the healthcare market was so fragmented, some markets reacted more quickly to the changes than others. Across the United States, large healthcare organizations began to merge or create unique partnerships as scale became more critical to success.

Of the many legislative changes taking place during this time period; two were particularly impactful to Moffitt and to the decision Hulse was facing: The Health Information Technology for Economic and Clinical Health (HITECH) Act and the Affordable Care Act (ACA).

HITECH Act

The HITECH Act was enacted in February 2009 as part of the American Recovery and Reinvestment Act (widely known as the stimulus bill). Its purpose was to enable the meaningful use of interoperable electronic health records throughout the healthcare systems in the United States. It supported the efforts of the Centers for Medicare and Medicaid Services (CMS) meaningful use program as well as the Office of National Coordinator for Health IT's (ONC) efforts to create interoperability of health records. Congress passed the law out of concern about data showing that simply having an electronic system was not adequate to improve care (Jha, 2010). Electronic Medical Records (EMRs), also referred to as Electronic Health Records (EHRs), needed to be used meaningfully to improve quality outcomes.

Meaningful use provisions were designed to align with health outcomes policy priorities ("Meaningful Use," 2012):

1. Improve quality, safety, efficiency, and reduce health disparities
2. Engage patients and families in their health
3. Improve care coordination
4. Improve population and public health
5. Ensure adequate privacy and security protection for personal health information

The requirements to meet the meaningful use provisions were complex and costly. In order to encourage participation in EHR adoption and to implement the complex provisions; meaningful use was developed as a phased approach. In addition, CMS offered incentives to both eligible hospitals and eligible professionals (physicians) for early adoption. The requirements and related incentives were different for each stage depending on whether the recipient was a physician practice or a hospital. Moffitt was both and was therefore required to implement both sets of rules. However, because of Moffitt hospital's unique reimbursement from CMS (see discussion about Moffitt Cancer Center), Moffitt was only eligible for incentives under the Eligible Professionals (Physician Practice) rules. However, the penalties would ultimately

apply to Moffitt under both sets of rules. See Exhibit 1 for details of the incentives available under Meaningful Use for Eligible Professionals.

On September 26, 2010, CMS/ONC final rules relating to meaningful use measures and standards became effective for Stage 1. The Stage 1 requirements were divided into 15 core set objectives and 10 menu set objectives. On August 23, 2012, CMS released the final requirements for Stage 2 meaningful use and the criteria that electronic health records were required to meet to achieve certification ("Meaningful Use," 2012). Stage 2 expanded on the criteria in Stage 1 and delayed the onset of Stage 2 meaningful use criteria until 2014. See Exhibit 2 for details of the Stage 1 versus Stage 2 requirements comparison for eligible professionals.

The complexity of the changes required, coupled with the pace with which the regulations were driving the changes, put tremendous pressure on clinicians and hospitals alike. Clinicians were required to change the way they practiced from largely paper based to electronic. If systems were not properly designed or implemented, the consequences could be significant (Jha, 2010). These barriers required engagement on the part of physicians, administrators and patients. In order to be sustainable, new payment models were needed to reward quality and efficiency (Jha, 2010).

Hulse was feeling the pressure particularly with regards to the amount of change that was going to be required. Moffitt had implemented the EMR, but were not using it meaningfully, at least according to the definitions and standards set by the Act. Many challenges were on the horizon.

The Affordable Care Act

The Patient Protection and Affordable Care Act (the Affordable Care Act or ACA) was enacted on March 23rd, 2010. The ACA had several major aims (Rosenbaum, 2011):

- Universal coverage through shared responsibility among government, individuals and employers
- Improve fairness, quality and affordability of health insurance coverage
- Improve healthcare value, quality and efficiency
- Strengthen primary care access
- To make strategic investments in the public's health

The key aim impacting Moffitt at the time of this case study was to improve healthcare value, quality and efficiency. The Affordable Care Act introduced broad changes to CMS and State Medicaid programs to pilot new payment and service delivery models, such as medical homes, accountable care organizations, payments for episodes of care and bundled payments. These changes were intended to drive healthcare systems into operating in a more clinically integrated way, measure health systems and physicians' quality performance and target quality improvement in chronic disease management (Rosenbaum, 2011).

These efforts would require hospitals and clinicians to define and measure quality, and to better understand where improvements in care management and cost could be made. Unfortunately, the analytic abilities of most institutions were hindered by their ability to capture discrete data elements and to organize the data in a usable way. In general, the information captured was restricted to billing and diagnosis codes which did not capture the full story regarding the patient's health. In addition, each institution was limited to the data related to care provided at their institution, not the entire continuum of care. Capturing discrete data elements in order to prove quality and analyze efficiencies was becoming a strategic imperative at most healthcare organizations.

Moffitt needed more discrete data elements, not only to improve healthcare value, but also to improve their ability to conduct comparative effectiveness research; both of which would increase Moffitt's com-

petitive position and its reputation as a leader in cancer research. At the time of the case, most physicians continued to dictate their notes in the medical record which prevented Moffitt from capturing the discrete data elements needed.

Moffitt Cancer Center and Research Institute

The H. Lee Moffitt Cancer Center and Research Institute, Inc. (Moffitt) was opened in 1986 as a non-profit organization with a mission to contribute to the prevention and cure of cancer. By 2013, *Moffitt* had grown to a 206-bed cancer hospital serving close to 9,500 patients a year, an outpatient clinic with multiple locations providing approximately 400,000 patient visits a year, and a research institute with grant funding primarily from the federal government totaling $90 million per year. *Moffitt's* consolidated annual budget totaled $800 million per year of which roughly 80% was associated with its clinical mission while the remaining 20% was dedicated to research. Of *Moffitt's* clinical revenues, 70% were made up of outpatient clinical visits and ancillary services while the remaining 30% were associated with hospital admissions.

As a non-profit organization, *Moffitt* reinvested its earnings toward its mission. As such, *Moffitt's* consolidated annual net operating margins generally fell somewhere between 1% and break-even. *Moffitt's* clinical revenues were invested in the research mission as grant funding was not sufficient to cover the cost of research. As such, any pressures on clinical margins had a significant impact on the research mission.

Although *Moffitt* was a stand-alone non-profit organization, it was created by the State of Florida legislature with a mission to serve the state's cancer needs. *Moffitt* was not a government entity but was considered an instrumentality of the state and as such, was able to receive annual funding from general appropriations, as well as funding from cigarette tax revenues. Cigarette tax funding was restricted to construct new facilities, while the general appropriation received by *Moffitt* went toward training future cancer physicians and researchers, and totaled approximately $13 million annually.

Because *Moffitt's* clinical focus was entirely centered on caring for patients with a cancer diagnosis, Moffitt received unique reimbursement from Medicare in comparison to hospitals that provided general patient care services. *Moffitt's* reimbursement of care from Medicare was roughly based on the cost to treat patients and included some provisions for capital costs. The cost basis payment provided to *Moffitt* was settled up with Medicare each year after filing a cost report. It was for this reason that *Moffitt* was not eligible to receive incentives for meaningful use under the hospital based provisions. Some of the costs of implementing the measures at the hospital would be included in the Medicare reimbursement through the cost report.

Moffitt was a premier cancer research institution receiving the coveted National Cancer Institute (NCI) designation as a comprehensive cancer center. This allowed *Moffitt* to attract some of the world's most renowned leaders in cancer care and research. *Moffitt's* affiliation with the University of South Florida (USF) allowed its physicians and researchers to hold faculty appointments at USF. As such, *Moffitt* was unique in that it looked and acted much more like an academic medical center than a specialty hospital with a research mission.

Moffitt's hospital and clinic enterprise was also unique in comparison to a general hospital. Not only was *Moffitt* highly specialized in treating cancer care; they were subspecialized by disease site. The physicians at *Moffitt* didn't treat cancer in general, they were specialized in a specific area of cancer. The clinics were organized into departments which were led by a Physician Department Chair. The Department Chair was responsible for the clinic operations, the research success of its members and the strategic direction of the department. This was one of the keys to *Moffitt's* success, a truly interdisciplinary approach to can-

cer care and research. However, it created challenges from a standardization and efficiency standpoint. See Exhibit 3 for a listing of *Moffitt's* patient care programs. Patient care programs usually fell within a department and in some cases were large enough to be the only focus of a department.

At the time of this case, Moffitt's newly appointed CEO had been in place for about a year. He was a world-renowned physician and clinical researcher in the field of hematologic malignancies (blood cancers). He had spent his first year as CEO working with his leadership team to develop a new strategic plan for *Moffitt*. The plan was bold and was going to require a tremendous amount of change over the next few years. The leadership team at *Moffitt* had great confidence in the direction of the strategic plan and particularly in its new CEO. He was extremely well respected by all at *Moffitt* and was a proven leader particularly in his ability to shepherd change.

The Survey

Hulse stared at the survey results on his computer. The survey was administered to determine the organization's readiness for change. The results showed that the physicians, on average, were not in sync with the leadership team. In addition, the clinical leaders were in the bottom quartile in the areas of: coordination and integration, and managing change and capability development. In fact, many of the areas where the survey results were the poorest pointed to the difficulties he faced. Four of the five lowest scores in the survey related in some way to the responder's feeling that the way things were done at *Moffitt* did not make it easy to change, that change in general was met with resistance, and that coordination between departments was poor.

This was not entirely surprising to Hulse; he had experienced this first hand. The first phase of the implementation of the electronic medical record had been completed a year ago, but very few physicians had fully adopted the technology. Initially, the EMR was seen more as a clinical data repository, useful for retrieving lab results, or seeing dictated and transcribed notes. *Moffitt* had yet to leverage the full utility of an EMR to facilitate clinical workflow and improve the coordination of a patient's care. This would require entering all clinical documentation electronically, and adopting the EMR as the official medical record at *Moffitt*.

Change Management

Moffitt was certainly not alone; many organizations had documented their own struggles. But, *Moffitt* was unique in many ways. For one, *Moffitt* acts much like an academic medical center. Almost all of its physicians are focused on both research and patient care. As such, they spent anywhere from 50 to 80 percent of their time in the clinics. The remaining time was focused on research. Any additional time added to their clinic directly impacted their ability to focus on their research goals. Promotion and tenure was based primarily on their research efforts. Finally, each department (clinic) was led by a physician leader. The administrators and nurse leaders in the departments reported directly to the physician. As a result, each department operated a bit differently, and standardization across departments was an ongoing challenge faced by the leadership team.

Hulse reflected on the history of the previous implementation. The organization used a committee structure and had a project manager assigned to plan. In addition, they had included four physician champions, representative of the major types of clinicians at *Moffitt* (oncologist, hematologic oncologist, oncology surgeon and a radiation oncologist). These physician champions participated in the EMR Steering Committee and a Physician Champion Committee. The information technology team had run major design decisions by them and had made changes based on their input. After go-live the IT team had listened to their concerns and accommodated their feedback where possible.

After several months of struggling to no avail, Hulse sought out and hired an expert with experience in EMR adoption, Dr. Phil Smith. Dr. Smith had previously served as the Chief Medical Informatics Officer for the *Adventist Health System*. During that time he had implemented EMRs and Computerized Provider Order Entry (CPOE) at dozens of community hospitals. Hulse first brought on Smith as a consultant in February 2013, and later hired him as *Moffitt's* CMIO.

Project Phases

After two months of evaluation, Dr. Smith and Mark launched the EMR refocus project with the goal of obtaining 90% adoption by physicians by the end of January 2014. It was now August 2013, and with the support and leadership of *Moffitt's* Physician in Chief (PIC) and CEO, the project was gaining traction. The PIC volunteered his department, Sarcoma, to be the pilot group. Dr. Smith and the IT team under Hulse's leadership was able to work with the Sarcoma department to create significant changes in work-flow and improvements in the outbound notes that were considerable. Slowly but surely, department chairs began to volunteer their departments to go next and the change began to take hold. By now, a few of the 13 departments had achieved full adoption, bringing *Moffitt's* overall physician adoption to approximately 14%. While still small, the momentum was building quickly and was following the technology S-curve model of adoption nicely (see Exhibit 4). It appeared that *Moffitt* was on track to reach their adoption goal.

This initial phase, phase zero, was just the beginning. The next major milestones were the implementation of medication reconciliation in the clinics (it had already been adopted in the inpatient units), meaningful use stage one (which was underway) and CPOE. All were required by the federal HITECH Act and *Moffitt* was pushing up against the deadlines for achieving any of the incentive dollars being offered. Because of *Moffitt's* unique reimbursement status with CMS, they were not eligible for the hospital-based incentives, however they would likely be subject to the penalties. *Moffitt* was, however, eligible for the provider-based incentives and they had approximately 160 eligible providers in 2013. If they were to reach Stage 1 by 2014; their total incentives over a five-year period would amount to $6.1 million. If they were to miss the 2014 deadline, they could still receive incentives of $3.8 million as long as they reached Stage1 by 2015. If they missed that deadline, they would be subject to penalties.

The Decision

Hulse stared at the IT project plan with all of its phases. It was a solid project plan that would enable the organization to meet Stage 1 by 2014 and CPOE in the required time frame, if successful. They leveraged physician champions, and had several committees to monitor progress and address roadblocks. While *Moffitt* had engaged physicians previously, Hulse felt that this time would be different as so much had been learned during the EMR refocus project from both his team and the physician leadership. Although every plan had its pitfalls, this one seemed like a reasonable approach and had incorporated lessons learned.

Hulse glanced at Dr. Smith. CPOE was different, and while one could argue that every project was different, based on Hulse's experiences (the most recent one included) this one had some significant change management challenges. As Hulse put it,

> We were extremely concerned about the workflow changes that would result from moving from paper for orders to using the computer. For example, in the existing environment, the nurses would draw up the orders and make sure they happened. In the future state environment, the physicians would need to place the orders in the computers which is something they felt would slow them down. The system would then automatically generate instructions and complete the follow through. While this

> would free up the nurses, we recognized that the nurses might not view it as a positive change. They were in control of this process currently and in the future state would need to relinquish control.

While this may seem like a small change on the surface, the detailed algorithms that would need to be built were complex. In addition, each department and clinic had its own way of processing orders and in many cases, its own unique order sets. The workflow in each clinic was different, and the responsibilities of the nurses and medical assistants in each department also varied. Everyone had their own unique way of processing the various orders (radiology, chemotherapy and laboratory). Hulse was familiar with the horror stories of failed CPOE implementations such as that at *Cedars-Sinai Medical Center* in LA. As reported on January 22nd, 2003 by the *Los Angeles Times* by staff writer, Charles Ornstein,

> Cedars-Sinai Medical Center, the largest private hospital in the West, is suspending use of a multimillion-dollar computerized system for doctors' orders after hundreds of physicians complained that it was endangering patient safety and required too much work.

Would the current IT plan work or should they pursue another strategy? Dr. Smith recognized that look. They both new this was going to be a huge challenge. Dr. Smith supported Hulse's concerns,

> This was going to require a cultural change. It couldn't be viewed as an information technology project or a federally mandated project. It needed to be viewed as a financial, operational and clinical change in the way care at *Moffitt Cancer Center* was delivered for the benefit of the patients.

The other alternative Hulse and Smith were considering was to have the organization focus on a plan that would change the operational workflows of the organization, in which IT would be a subset of the overall project. The idea was that all of *Moffitt's* leadership would need to work together to define guiding principles that would paint the picture of the desired outcome. From the guiding principles, initiative goals would be established that were measureable. For example, a guiding principle would be: *Moffitt* maintains an accurate list of medications upon admission and discharge from inpatient care. Where the measurement would be: a physician completes admission medication reconciliation within 12 hours of patient discharge on > 90% of inpatient encounters. From there a team of folks from operations and process excellence (*Moffitt's* version of lean process improvement) and IT would design workflows and system design changes to meet those goals. The information technology design changes would be implemented once these processes were completed.

In order for the alternative strategy to be successful, the leadership was going to have to look hard at everything currently on their plates and make some tough decisions about priorities. This was going to involve nearly every department in *Moffitt* and rather than the current four physician champions; one or two would need to be assigned from each program. In addition, this kind of change, re-developing workflows across the entire clinic spectrum, was going to take a considerable amount of time. It was unlikely that *Moffitt* would be able to achieve the Stage 1 requirements in 2014 if they moved in this direction. It was also a stretch to think they would achieve them in 2015. In fact, moving in this direction would push the organization up against the penalty phase of the HITECH requirements.

Hulse weighed the options. They could implement the current version of the IT project plan and conceivably meet the requirements of Stage 1 meaningful use. But, the question continued to loom; would they be successful long term with that approach? Or, should they convince the leadership that this was not an IT initiative but rather an operational and clinical project to change the workflows of the organization with information technology as the enabler. It would take IT out of the driver's seat and put it in the hands

of operations. It would also push the organization up against the penalty phase of the HITECH Act. The next EMR executive steering committee meeting was next week. If they were going to propose a change in direction, this would be the meeting to launch the idea.

Acknowledgements

Mark Hulse, R.N., is the vice president of information technology and chief information officer at Moffitt. He directs the development and implementation of information systems initiatives. Hulse previously served as the vice president and CIO of *North Shore Medical Center* in Massachusetts for six years. His experience in implementing electronic medical records and computerized physician order entry is important to *Moffitt* as it uses technology to provide the best care and customer service to patients.

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Biography

Janene Culumber currently serves as the chief financial officer for *Florida Orthopaedic Institute* and for *Florida Orthopaedic Institute Surgery Center*. She also serves as a Supervisory Committee Member of the *USF Federal Credit Union*. Culumber previously served as senior vice president and chief financial officer for *Moffitt Cancer Center*. Prior to joining *Moffitt*, Culumber was a senior manager in the audit practice of KPMG LLP. She is a graduate of the University of Florida, where she earned a Master's of Accountancy and a Bachelor's of Science in Accounting.

Exhibit 1: Medicare EHR Incentive Payment Schedule for Eligible Professionals[2]*

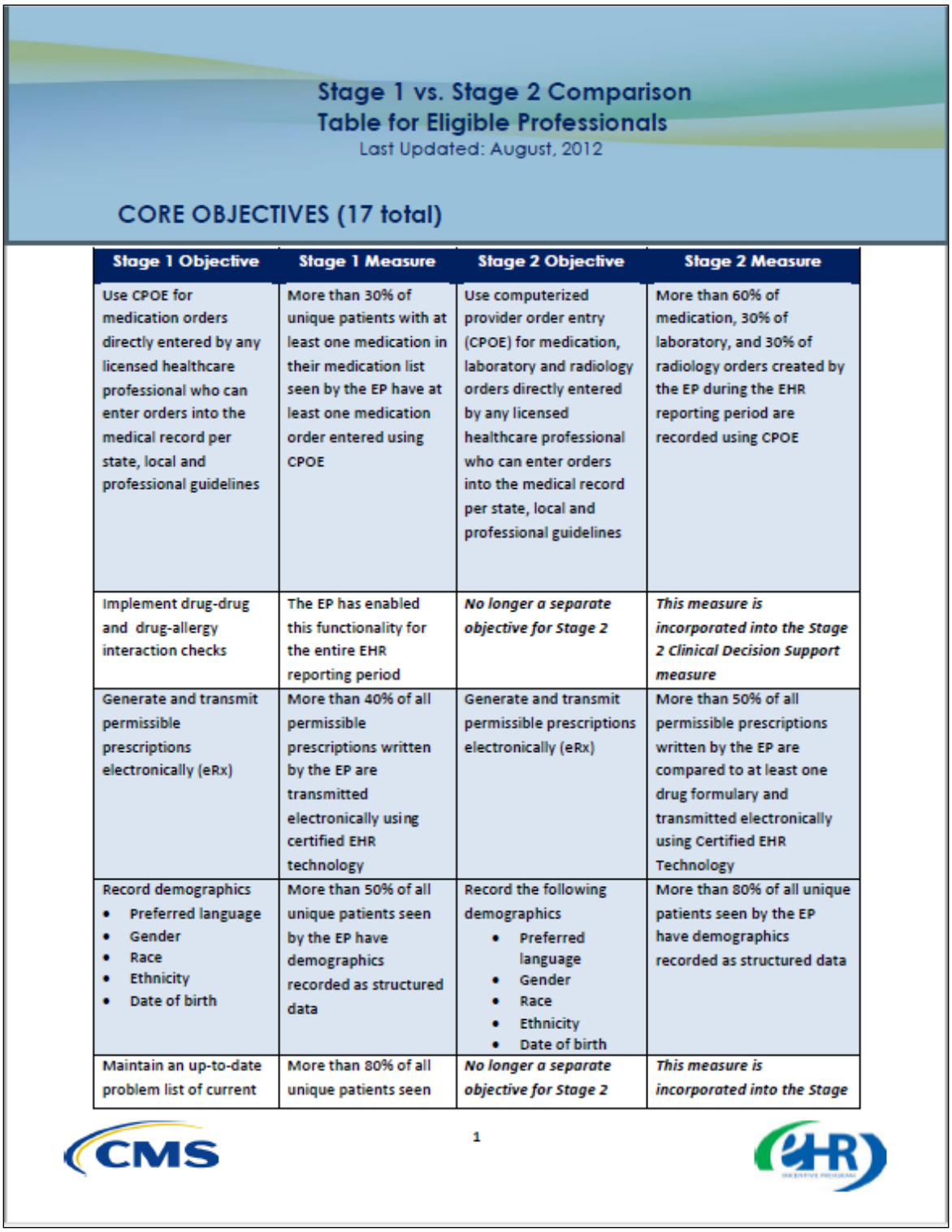
- The program started in 2011, and payments will continue through 2016. Eligible professionals can participate for up to 5 continuous years throughout the duration of the program.
- The last year to begin participation and receive an incentive payment is 2014. To receive the maximum incentive payment, eligible professionals must have started participation by 2012. Eligible professionals who demonstrate meaningful use of certified EHR technology can receive up to $43,720 over 5 continuous years.
- To qualify for incentive payments, eligible professionals must successfully demonstrate meaningful use for each year of participation in the program.
- Beginning in 2015, eligible professionals who do not successfully demonstrate meaningful use will be subject to a payment adjustment. The payment reduction starts at 1% and increases each year that an eligible professional does not demonstrate meaningful use, to a maximum of 5%.

	First Payment Received in 2011	**First Payment Received in 2012**	**First Payment Received in 2013**	**First Payment Received in 2014**
Payment Amount in 2011	$18,000			
Payment Amount in 2012	$12,000	$18,000		
Payment Amount in 2013	$7,840	$11,760	$14,700	
Payment Amount in 2014	$3,920	$7,840	$11,760	$11,760
Payment Amount in 2015	$1,960	$3,920	$7,840	$7,840
Payment Amount in 2016		$1,960	$3,920	$3,920
TOTAL Incentive Payments	$43,720	$43,480	$38,220	$23,520

*As required by law, President Obama issued a sequestration order on March 1, 2013. Under these mandatory reductions, Medicare EHR incentive payments made to eligible professionals and eligible hospitals will be reduced by 2%. This 2% reduction has been applied to any Medicare EHR incentive payment for a reporting period that ended on or after April 1, 2013. This reduction does not apply to Medicaid EHR incentive payments.

[2] *Source:* http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Basics.html

Exhibit 2: Meaningful Use Stage 1 vs. Stage 2 Comparison Table



Stage 1 vs. Stage 2 Comparison Table for Eligible Professionals

Last Updated: August, 2012

CORE OBJECTIVES (17 total)

Stage 1 Objective	Stage 1 Measure	Stage 2 Objective	Stage 2 Measure
Use CPOE for medication orders directly entered by any licensed healthcare professional who can enter orders into the medical record per state, local and professional guidelines	More than 30% of unique patients with at least one medication in their medication list seen by the EP have at least one medication order entered using CPOE	Use computerized provider order entry (CPOE) for medication, laboratory and radiology orders directly entered by any licensed healthcare professional who can enter orders into the medical record per state, local and professional guidelines	More than 60% of medication, 30% of laboratory, and 30% of radiology orders created by the EP during the EHR reporting period are recorded using CPOE
Implement drug-drug and drug-allergy interaction checks	The EP has enabled this functionality for the entire EHR reporting period	***No longer a separate objective for Stage 2***	***This measure is incorporated into the Stage 2 Clinical Decision Support measure***
Generate and transmit permissible prescriptions electronically (eRx)	More than 40% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology	Generate and transmit permissible prescriptions electronically (eRx)	More than 50% of all permissible prescriptions written by the EP are compared to at least one drug formulary and transmitted electronically using Certified EHR Technology
Record demographics • Preferred language • Gender • Race • Ethnicity • Date of birth	More than 50% of all unique patients seen by the EP have demographics recorded as structured data	Record the following demographics • Preferred language • Gender • Race • Ethnicity • Date of birth	More than 80% of all unique patients seen by the EP have demographics recorded as structured data
Maintain an up-to-date problem list of current	More than 80% of all unique patients seen	***No longer a separate objective for Stage 2***	***This measure is incorporated into the Stage***

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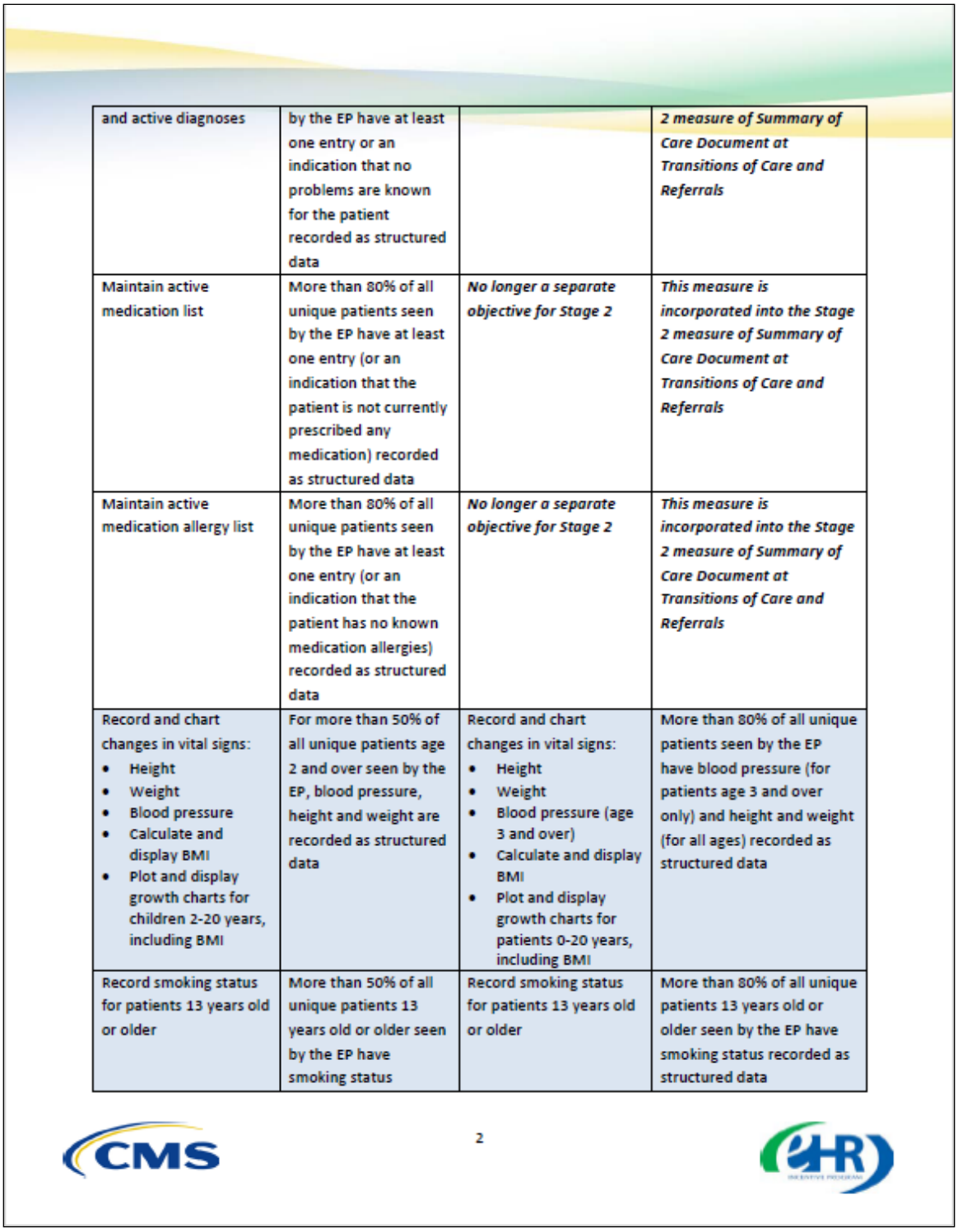

and active diagnoses	by the EP have at least one entry or an indication that no problems are known for the patient recorded as structured data		***2 measure of Summary of Care Document at Transitions of Care and Referrals***
Maintain active medication list	More than 80% of all unique patients seen by the EP have at least one entry (or an indication that the patient is not currently prescribed any medication) recorded as structured data	***No longer a separate objective for Stage 2***	***This measure is incorporated into the Stage 2 measure of Summary of Care Document at Transitions of Care and Referrals***
Maintain active medication allergy list	More than 80% of all unique patients seen by the EP have at least one entry (or an indication that the patient has no known medication allergies) recorded as structured data	***No longer a separate objective for Stage 2***	***This measure is incorporated into the Stage 2 measure of Summary of Care Document at Transitions of Care and Referrals***
Record and chart changes in vital signs: • Height • Weight • Blood pressure • Calculate and display BMI • Plot and display growth charts for children 2-20 years, including BMI	For more than 50% of all unique patients age 2 and over seen by the EP, blood pressure, height and weight are recorded as structured data	Record and chart changes in vital signs: • Height • Weight • Blood pressure (age 3 and over) • Calculate and display BMI • Plot and display growth charts for patients 0-20 years, including BMI	More than 80% of all unique patients seen by the EP have blood pressure (for patients age 3 and over only) and height and weight (for all ages) recorded as structured data
Record smoking status for patients 13 years old or older	More than 50% of all unique patients 13 years old or older seen by the EP have smoking status	Record smoking status for patients 13 years old or older	More than 80% of all unique patients 13 years old or older seen by the EP have smoking status recorded as structured data

	recorded as structured data		
Implement one clinical decision support rule relevant to specialty or high clinical priority along with the ability to track compliance that rule	Implement one clinical decision support rule	Use clinical decision support to improve performance on high-priority health conditions	1. Implement 5 clinical decision support interventions related to 4 or more clinical quality measures, if applicable, at a relevant point in patient care for the entire EHR reporting period. 2. The EP, eligible hospital, or CAH has enabled the functionality for drug-drug and drug-allergy interaction checks for the entire EHR reporting period
Report clinical quality measures (CQMs) to CMS or the States	Provide aggregate numerator, denominator, and exclusions through attestation or through the PQRS Electronic Reporting Pilot	***No longer a separate objective for Stage 2, but providers must still submit CQMs to CMS or the States in order to achieve meaningful use***	***Starting in 2014, all CQMs will be submitted electronically to CMS***
Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, medication allergies), upon request	More than 50% of all patients of the EP who request an electronic copy of their health information are provided it within 3 business days	Provide patients the ability to view online, download and transmit their health information within four business days of the information being available to the EP	i. More than 50% of all unique patients seen by the EP during the EHR reporting period are provided timely (available to the patient within 4 business days after the information is available to the EP) online access to their health information ii. More than 5% of all unique patients seen by the EP during the EHR reporting period (or their authorized

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			representatives) view, download, or transmit to a third party their health information
Provide clinical summaries for patients for each office visit	Clinical summaries provided to patients for more than 50% of all office visits within 3 business days	Provide clinical summaries for patients for each office visit	Clinical summaries provided to patients within one business day for more than 50% of office visits
Capability to exchange key clinical information (for example, problem list, medication list, medication allergies, diagnostic test results), among providers of care and patient authorized entities electronically	Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information	***This objective is eliminated from Stage 1 in 2013 and is no longer an objective for Stage 2***	***This measure is eliminated from Stage 1 in 2013 and is no longer a measure for Stage 2***
Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities	Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary and correct identified security deficiencies as part of its risk management process	Protect electronic health information created or maintained by the Certified EHR Technology through the implementation of appropriate technical capabilities.	Conduct or review a security risk analysis in accordance with the requirements under 45 CFR 164.308 (a)(1), including addressing the encryption/security of data at rest and implement security updates as necessary and correct identified security deficiencies as part of its risk management process
Implement drug-formulary checks	The EP has enabled this functionality and has access to at least one internal or external drug formulary for the entire EHR reporting period	***No longer a separate objective for Stage 2***	***This measure is incorporated into the e-Prescribing measure for Stage 2***

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Incorporate clinical lab-test results into certified EHR technology as structured data	More than 40% of all clinical lab tests results ordered by the EP during the EHR reporting period whose results are either in a positive/negative or numerical format are incorporated in certified EHR technology as structured data	Incorporate clinical lab-test results into Certified EHR Technology as structured data	More than 55% of all clinical lab tests results ordered by the EP during the EHR reporting period whose results are either in a positive/negative or numerical format are incorporated in Certified EHR Technology as structured data
Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, research or outreach	Generate at least one report listing patients of the EP with a specific condition	Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, research, or outreach	Generate at least one report listing patients of the EP with a specific condition
Send reminders to patients per patient preference for preventive/ follow up care	More than 20% of all unique patients 65 years or older or 5 years old or younger were sent an appropriate reminder during the EHR reporting period	Use clinically relevant information to identify patients who should receive reminders for preventive/follow-up care	Use EHR to identify and provide reminders for preventive/follow-up care for more than 10% of patients with two or more office visits in the last 2 years
Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists, medication allergies) within four business days of the information being available to the EP	More than 10% of all unique patients seen by the EP are provided timely (available to the patient within four business days of being updated in the certified EHR technology) electronic access to their health information subject to the EP's discretion to withhold certain information	***This objective is eliminated from Stage 1 in 2014 and is no longer an objective for Stage 2***	***This measure is eliminated from Stage 1 in 2014 and is no longer a measure for Stage 2***

Use certified EHR technology to identify patient-specific education resources and provide those resources to the patient if appropriate	More than 10% of all unique patients seen by the EP are provided patient-specific education resources	Use certified EHR technology to identify patient-specific education resources and provide those resources to the patient if appropriate	Patient-specific education resources identified by CEHRT are provided to patients for more than 10% of all unique patients with office visits seen by the EP during the EHR reporting period
The EP who receives a patient from another setting of care or provider of care or believes an encounter is relevant should perform medication reconciliation	The EP performs medication reconciliation for more than 50% of transitions of care in which the patient is transitioned into the care of the EP	The EP who receives a patient from another setting of care or provider of care or believes an encounter is relevant should perform medication reconciliation	The EP performs medication reconciliation for more than 50% of transitions of care in which the patient is transitioned into the care of the EP
The EP who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should provide summary of care record for each transition of care or referral	The EP who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 50% of transitions of care and referrals	The EP who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should provide summary of care record for each transition of care or referral	1. The EP who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 50% of transitions of care and referrals 2. The EP who transitions or refers their patient to another setting of care or provider of care provides a summary of care record either a) electronically transmitted to a recipient using CEHRT or b) where the recipient receives the summary of care record via exchange facilitated by an organization that is a NwHIN Exchange participant or is validated through an

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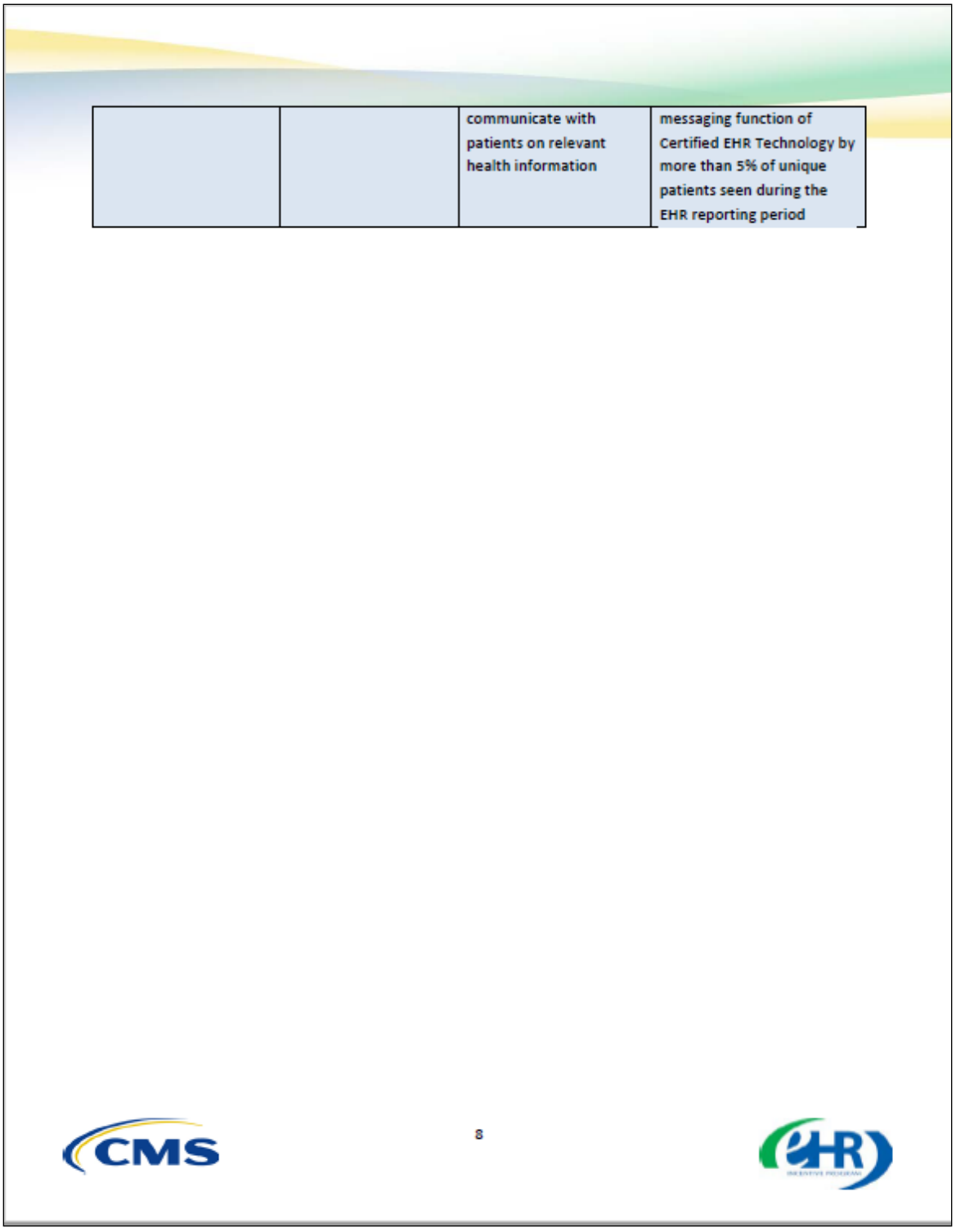
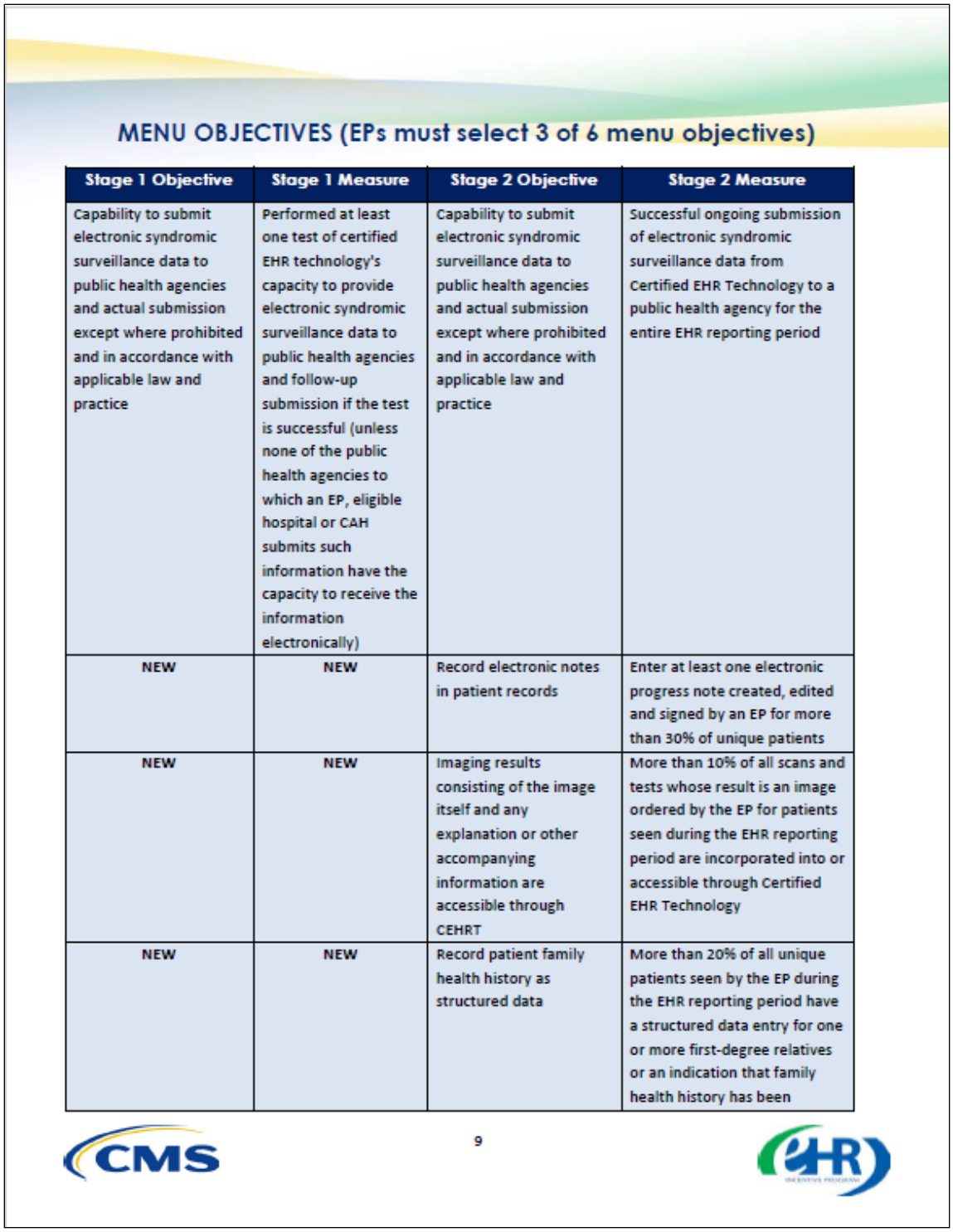
			ONC-established governance mechanism to facilitate exchange for 10% of transitions and referrals 3. The EP who transitions or refers their patient to another setting of care or provider of care must either a) conduct one or more successful electronic exchanges of a summary of care record with a recipient using technology that was designed by a different EHR developer than the sender's, or b) conduct one or more successful tests with the CMS-designated test EHR during the EHR reporting period
Capability to submit electronic data to immunization registries or Immunization Information Systems and actual submission except where prohibited and in accordance with applicable law and practice	Performed at least one test of certified EHR technology's capacity to submit electronic data to immunization registries and follow up submission if the test is successful (unless none of the immunization registries to which the EP submits such information have the capacity to receive the information electronically)	Capability to submit electronic data to immunization registries or Immunization Information Systems and actual submission except where prohibited and in accordance with applicable law and practice	Successful ongoing submission of electronic immunization data from Certified EHR Technology to an immunization registry or immunization information system for the entire EHR reporting period
NEW	**NEW**	Use secure electronic messaging to	A secure message was sent using the electronic



		communicate with patients on relevant health information	messaging function of Certified EHR Technology by more than 5% of unique patients seen during the EHR reporting period



MENU OBJECTIVES (EPs must select 3 of 6 menu objectives)

Stage 1 Objective	Stage 1 Measure	Stage 2 Objective	Stage 2 Measure
Capability to submit electronic syndromic surveillance data to public health agencies and actual submission except where prohibited and in accordance with applicable law and practice	Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which an EP, eligible hospital or CAH submits such information have the capacity to receive the information electronically)	Capability to submit electronic syndromic surveillance data to public health agencies and actual submission except where prohibited and in accordance with applicable law and practice	Successful ongoing submission of electronic syndromic surveillance data from Certified EHR Technology to a public health agency for the entire EHR reporting period
NEW	NEW	Record electronic notes in patient records	Enter at least one electronic progress note created, edited and signed by an EP for more than 30% of unique patients
NEW	NEW	Imaging results consisting of the image itself and any explanation or other accompanying information are accessible through CEHRT	More than 10% of all scans and tests whose result is an image ordered by the EP for patients seen during the EHR reporting period are incorporated into or accessible through Certified EHR Technology
NEW	NEW	Record patient family health history as structured data	More than 20% of all unique patients seen by the EP during the EHR reporting period have a structured data entry for one or more first-degree relatives or an indication that family health history has been

Source: CMS website accessed on May 10, 2015 at http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Stage1vsStage2CompTablesforEP.pdf

Exhibit 3: Moffitt's Interdisciplinary Departments[3]

Moffitt's Interdisciplinary Approach

Moffitt takes a full-service approach to patient care, bringing together experts from a variety of oncology specialties to determine the best treatment plan for each patient while linking together the Center's extensive array of medical and cancer support services.

Moffitt's interdisciplinary team approach and services are unique to the community and region and are an integral part of the Center's goal of providing the highest level of total cancer care.

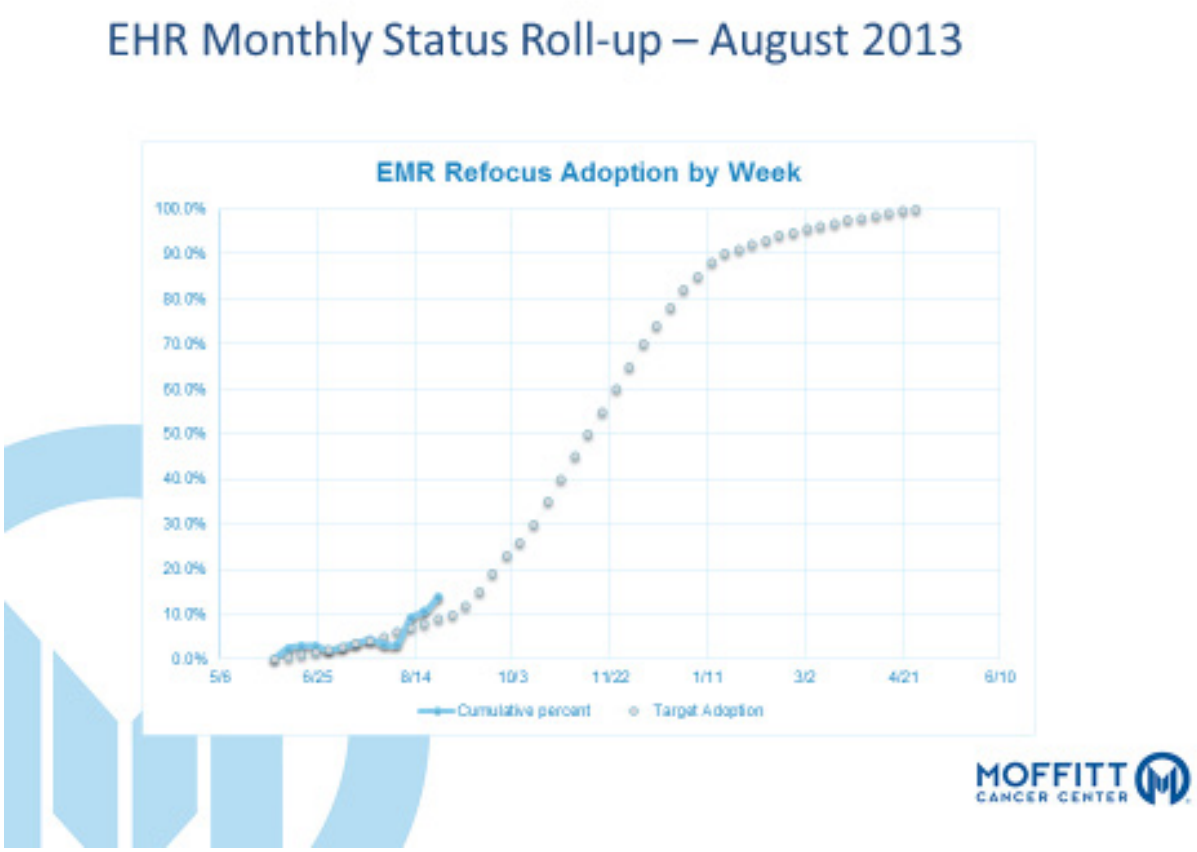
Patient Care Programs

Interdisciplinary Patient Care Programs focus on specific types of cancer and include:

- Blood and Marrow Transplant
- Comprehensive Breast Cancer
- Cutaneous Oncology
- Endocrine Tumor
- Gastrointestinal Oncology
- Genitourinary Oncology
- Gynecologic Oncology
- Head & Neck Oncology
- Internal and Hospital Medicine
- Malignant Hematology
- Neuro-Oncology
- Psychosocial and Palliative Care
- Radiation Oncology
- Sarcoma
- Senior Adult Oncology
- Survivorship Program
- Thoracic Oncology

[3] Excerpted from Moffitt Cancer Center website, Moffitt-Welcome-Book-030212, accessed on May 7th, 2015. http://moffitt.org/File%20Library/Main%20Nav/Home/Patient%20Family%20Orientation/Moffitt-Welcome-Book-030212.pdf.

Exhibit 4: Moffitt's EHR Adoption Curve[4]



[4] Excerpted from Moffitt Cancer Center internal presentation to the EHR Steering Committee.