SA-CME

Expanding Role of Certified Electronic Health Records Technology in Radiology: The MACRA Mandate

Gregory N. Nicola, MD[a], Andrew B. Rosenkrantz, MD, MPA[b], Joshua A. Hirsch, MD[c], Ezequiel Silva III, MD[d,e], Keith J. Dreyer, DO, PhD[c], Michael P. Recht, MD[b]

Abstract

Radiology has historically been at the forefront of innovation and the advancement of technology for the benefit of patient care. However, challenges to early implementation prevented most radiologists from adopting and integrating certified electronic health record technology (CEHRT) into their daily workflow despite the early and potential advantages it offered. This circumstance places radiology at a disadvantage in the two payment pathways of the Medicare Access and CHIP Reauthorization Act of 2015: the Merit-Based Incentive Payment System (MIPS) and advanced alternative payment models (APMs). Specifically, not integrating CEHRT hampers radiology's ability to receive bonus points in the quality performance category of the MIPS and in parallel threatens certain threshold requirements for advanced APMs under the new Quality Payment Program. Radiology must expand the availability and use of CEHRT to satisfy existing performance measures while creating new performance measures that create value for the health care system. In addition, radiology IT vendors will need to ensure their products (eg, radiology information systems, PACS, and radiology reporting systems) are CEHRT compliant and approved. Such collective efforts will increase radiologists' quality of patient care, contribution to value driven activities, and overall health care relevance.

Key Words: Electronic health records, CEHRT, MACRA, informatics, PACS

J Am Coll Radiol 2018;15:29-33.

Radiology as a specialty has a long history of contributing to and benefiting from advances in technology that not only promote the value of the field but also help maintain or increase the efficiency at which radiologists interpret medical imaging studies. For instance, PACS have been important in enabling radiologists to interpret studies containing a larger number of images per examination while maintaining overall productivity. However, challenges to early implementation prevented most radiologists from adopting and integrating certified electronic health record technology (CEHRT) into their daily workflow despite the early and potential advantages it offered [1]. The value mandate legislated in the Medicare Access and CHIP Reauthorization Act (MACRA), and to a lesser extent the Patient Protection and Affordable Care Act [2,3], provides further incentive for radiologists to increase their use of CEHRT.

CEHRT FACILITATES VALUE

CEHRT has core capabilities that allow the exchange of clinically relevant information among providers across various settings and thus can provide access to more comprehensive clinical information for use by radiologists at the time of interpretation or before an image-guided procedure. CEHRT differs from basic electronic health

[a]Hackensack Radiology Group, PA, River Edge, New Jersey.

[b]Department of Radiology, NYU Langone Medical Center, New York, New York.

[c]Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts.

[d]South Texas Radiology Group, San Antonio, Texas.

[e]Department of Radiology, University of Texas Health Science Center at San Antonio, San Antonio, Texas.

Corresponding author and reprints: Andrew B. Rosenkrantz, MD, MPA, Department of Radiology, Center for Biomedical Imaging, NYU School of Medicine, NYU Langone Medical Center, 660 First Avenue, 3rd Floor, New York, NY 10016; e-mail: andrew.rosenkrantz@nyumc.org.

Dr Rosenkrantz is supported by a research grant from the Harvey L. Neiman Health Policy Institute. Dr Hirsch has received fees unrelated to the present work from Medtronic, Carefusion, and Codman Neurovascular. All other authors have no conflicts of interest related to the material discussed in this article.

1546-1440/17/$36.00 ■ http://dx.doi.org/10.1016/j.jacr.2017.02.043

records (EHRs) in that it is "certified" by the Office of the National Coordinator for Health Information Technology (ONC) within the purview of the US Department of Health and Human Services. The American Recovery and Reinvestment Act of 2009 contained the Health Information Technology for Economic and Clinical Health (HITECH) Act [4], which is noteworthy for introducing the EHR incentive program, also known as meaningful use [5]. In the ensuing years, the adoption of EHR technology in the office-based setting nearly doubled, with 77.9% of offices using CEHRT as of 2015 [6], while nearly all nonfederal acute care hospitals have subsequently adopted CEHRT [7]. Surgical reports, pathology and laboratory data, daily progress notes, and problem lists are now readily accessible for those radiologists practicing in environments that have adopted CEHRT.

CEHRT also serves as a technology platform for expanding opportunities for value-based activities. CEHRT has core capabilities mandated for certification under the EHR incentive program stage 3 requirements [8]. This includes the ability to engage patients using an encrypted internal messaging platform that allows them to message their physicians with questions and concerns. These internal messaging conversations can be digitally captured as part of the patient's medical record, storing vital communications that are likely to play an increasing role in the radiologist-patient relationship. Patients can also access patient-specific education through online portals, connecting them with their physicians' CEHRT. These educational resources are tailored for the patient's specific needs and conditions, for example, providing information about pending or already preformed procedures. Patients are granted online access via CEHRT portals to vital pieces of their medical records, keeping them informed of diagnoses and treatment plans; these portals further serve as a mechanism to distribute the results of tests and procedures, including radiology reports. This expanding avenue of patient communication was recently embodied in two new care delivery models announced by CMS on December 8, 2016, called the Shared Decision Making Model and the Direct Decision Support Model [9]. CMS intends for these new practice and payment models to improve patient engagement and shared decision making by increasing patient access to their health information; such activities will require CEHRT.

CEHRT has further value-based advantages beyond deepening and enriching the avenues of communication. CEHRT has an already established and expanding role for capturing quality data ranging from simple measures of physician processes to creating opportunities to evaluate outcomes of image-guided therapies or imaging procedures. CEHRT is ideal for these activities as it has access to large portions of patients' clinical data, including laboratory results, pathology, and clinician's assessments, among a plethora of other information. The science of waste reduction and cost containment in health care has been previously reviewed, and CEHRT has been considered a potentially vital piece of the equation [10,11]. Radiology has already begun the process of managing waste within our specialty by discouraging inappropriate imaging through the adoption of clinical decision support software for advanced imaging, as legislatively mandated by the Protecting Access to Medicare Act of 2014 [12]. Radiology's role as advocates for appropriate imaging will be strengthened by further studying complex care paradigms, diving deeper into both efficient and inefficient uses of imaging; this undertaking would be strengthened with the extensive data sets being captured in CEHRT. The future broader interconnectivity of CEHRT will also allow sharing data with national medical data registries, enhancing the ability to study best practice and root out waste.

The intricate team-based approach to care in the modern health care system requires a central data repository like CEHRT. Radiologists will of course continue to use PACS for image interpretation–specific functions, but they must also embrace the depth of CEHRT to add greater value to the broader health care team and succeed in MACRA.

MACRA

Promoting the Transition From Volume to Value

Under MACRA, clinicians will receive an increasing component of reimbursement tied to value, either through the modified fee-for-service payment system termed the Merit-Based Incentive Payment System (MIPS) or from a variety of advanced alternative payment models (APMs) that inherently reimburse for value over volume. The pressures created by these two new payment systems on providing high-value cost-effective care will result in a health care system that demands reliable and clinically relevant information from radiologists. Compared with traditional fee-for-service methodology, radiologists may seek additional ways to provide value, including serving as imaging utilization managers, amplifying care coordination activities, providing more effective communications to referring clinicians and/or patients, and redefining quality.

Many of these activities will require incorporation of CEHRT into radiologists' daily workflow. Thus, MACRA will incentivize the profession's adoption of CEHRT, creating economic benefits for using CEHRT to provide direct value to patients and referring physicians. Such reform opportunities will help enhance radiologists' role in patient care. The specific regulatory incentives for incorporating CEHRT are apparent throughout both the MACRA legislation and the associated rulemaking by CMS [13]. Nonetheless, a brief summary of the regulatory history of CEHRT will help best understand the evolution of CEHRT in MACRA.

HITECH, Meaningful Use, and the Radiologist

In 2009, the HITECH Act [4] was enacted as part of the American Recovery and Reinvestment Act to promote the adoption and meaningful use of health IT, primarily in the form of EHRs with certification (CEHRT) from the ONC. The meaningful use program [5], as it became known, created a set of activities required for a clinician to become a "meaningful user" of CEHRT. At the time, the mandated activities had little relevance for the practice of radiology, and spending the requisite time searching for seemingly irrelevant information in a potentially inefficient aggregator (CEHRT) translated into decreased clinical productivity. Meaningful use requirements were different for physicians and hospitals, and at first hospitals were reluctant to make any changes in their programs to accommodate radiologists. Additionally, radiology stakeholders made numerous suggestions to CMS and the ONC regarding changes that could be made to the program, but these were not adopted in rule making. As such, radiology changed its strategy, advocating for and receiving an automatic exemption from the program's requirements. This strategy was necessary to mitigate statutorily mandated penalties for not adopting CEHRT. In retrospect, it may have been a missed opportunity to prepare for the then unforeseen future that has become the present-day reality. Rather than pursuing an exemption, stakeholders could have uniformly and vigorously pushed for meaningful user activities appropriate for our specialty, which would have encouraged radiologists to access and use CEHRT as part of daily workflow. With the exemption, there was little adoption by radiology practices and, hence, little incentive for the radiology vendors to develop products to satisfy meaningful use or to pursue CEHRT status for their products. This collective decision to not participate has placed radiologists at a disadvantage in preparing for MACRA's MIPS, as well as participating in and leading in the development of new APMs.

MACRA and CEHRT Requirements in MIPS: Should Radiologists Skip Another Opportunity?

MACRA promotes the continued meaningful use of CEHRT, renaming the concept advancing care information (ACI). Tellingly, ACI is placed into its own performance category within the larger MIPS. As in the precursor meaningful use program, radiologists have latitude to receive exemption from ACI. Exemptions from this category are granted to clinicians with infrequent face-to-face patient interaction, a hospital-based practice designation, as well as other hardships to CEHRT implementation. It may be logical to seek exemption in 2017, as the ACI activities are seemingly removed from the practice of fee-for-service radiology. However, doing so may place the specialty at a disadvantage as it may discourage using the same valuable tools that our nonradiology colleagues work with daily to exchange information about and/or communicate directly with patients, or take advantage of other opportunities in MACRA that require use of CEHRT described later in this report. Radiology stakeholders should instead partner with CMS to create a list of applicable measures for radiologists and other information-based specialties, so that such specialties can begin the process of incorporating CEHRT into daily workflow.

ACI is not the only category within MIPS that uses the power of CEHRT. Since the early stages of the meaningful use program, medical specialties using CEHRT have had the capability to submit performance information on quality (a separate MIPS performance category) to CMS electronically, constituting "electronic clinical quality measures" (eCQMs) [14]. These eCQMs correspond with preexisting quality measures that are modified to be reported by CEHRT. Electronic capture of quality measures would theoretically decrease the burden of collecting and submitting such measures on a medical practice, decrease the burden of processing performance on such measures by CMS, and potentially increase the reliability of such data compared with paper-based reporting mechanisms. Logically, CMS will reward bonus points to those clinicians who can fully report quality measures using end-to-end electronic reporting with certified technology. These bonus points will not be applicable to many of the radiology-specific MIPS quality measures as they have not been adopted by CMS as eCQMs and do not use certified technology for electronic reporting. Enabling reporting quality measures as eCQM should be pursued by radiology stakeholders to take advantage of all these strengths as well as create opportunities for receiving bonus points.

The benefits of CEHRT in MIPS are not limited to the ACI and quality performance categories. Another MIPS performance category, referred to as improvement activities, includes several activities that leverage CEHRT for successful completion, and using CEHRT in reporting these activities leads to additional bonus points within the ACI category. CEHRT thus seems to be a focal point of MIPS, assuming a more important role than it seemed to have in the preexisting federal meaningful use program. Moreover, radiology-specific IT vendors must recognize this growing need of the radiology community, ensure that their products are able to collect quality data, and pursue ONC certification for such products (including radiology information systems [RIS], PACS, and radiology reporting systems).

MACRA and APMs

MACRA designates a subset of APMs as advanced APMs. Clinicians meeting the requirements for advanced APM participation will be eligible for substantial favorable reimbursement arrangements under MACRA, including exemption from the reporting requirements of MIPS. One criterion for an entity to be an advanced APM is that at least 50% of its qualified participants must use CEHRT. This 50% CEHRT use requirement places radiology groups that have not adopted CEHRT at a distinct disadvantage. Radiology groups that have not adopted CEHRT may cause their affiliated entities to miss this 50% threshold requirement, thereby hurting the radiology group's standing within the APM itself or ability to participate in the first place. This shortcoming will likely become more relevant over time as the number of APMs increases, covering more patients and patient conditions [15]. Moreover, some of the new APMs may have a narrowly defined clinical scope with lower overall numbers of physician participants, which could make threatening the overall APM entities' CEHRT threshold requirements even more pertinent. For example, an APM built on procedure episodes adopted by a small orthopedic practice using CEHRT may be threatened if contracting with a larger radiology group that does not use CEHRT. CEHRT will play an important role in this evolving world of APMs and must therefore also become part of our profession's strategic plan to thrive in this framework.

MACRA Introduces the Decisive Vehicle of Change: The Physician-Focused Payment Model

If CEHRT is one road to connect radiology to value, then the physician-focused payment model (PFPM) is a potential vehicle that can use be used to travel to the ultimate destination [16,17]. The PFPM is another MACRA creation whereby specialties are encouraged to develop and propose new APMs relevant to their practice that achieve high-quality and efficient care. These new models are intended to track and pay for activities that the stakeholder profession and others deem as valuable beyond volume. The PFPM was created to fill a lack of existing advanced APMs focused on specialty physicians rather than on primary care. The application for proposing a PFPM includes 10 criteria that relate to the transition away from volume-based medicine [18]. These criteria address how the new PFPM will foster the promotion of value over volume, patient safety, measurement of quality, integration, and care coordination. Although these activities are all enhanced by CEHRT, how the model uses CEHRT in fact represents its own criterion.

CONCLUSIONS

Leveraging and embracing CEHRT provides radiology with an avenue for enhancing value-based care. MACRA encourages this opportunity through payment incentives for using CEHRT in MIPS and APMs. To take advantage of such incentives, radiology IT vendors will need to ensure their products (eg, RIS, PACS, and radiology reporting systems) are CEHRT compliant and approved. Our profession's collective focus should now be on defining radiologist-specific activities in CEHRT, which, if correctly implemented, will allow radiologists to further leverage technology to increase our role in the health care equation.

TAKE-HOME POINTS

- Radiologists have historically benefited from advances in technology; CEHRT should be recognized as another opportunity for the field to increase its value.
- Radiology has traditionally been a PACS-centered specialty. However, the value-based care mandate will encourage us to also integrate CEHRT into our daily workflow.
- The radiology community needs to work together to form radiology-relevant CEHRT activities that will further promote our value and satisfy federal performance requirements for both the MIPS and advanced APM payment pathways under MACRA.

- To allow radiologists to take advantage of such opportunities under MACRA, radiology IT vendors will need to ensure their products (eg, RIS, PACS, and radiology reporting systems) are CEHRT compliant and approved.

REFERENCES

1. Gibbings T, Konigsbach D, Reicher MA. Meaningful use in radiology. J Am Coll Radiol 2011;8:657-60.
2. 111 th Congress. H.R. 3590. Patient Protection and Affordable Care Act. Available at: https://www.congress.gov/bill/111th-congress/house-bill/3590. Accessed December 20, 2016.
3. Manchikanti L, Hirsch JA. Patient Protection and Affordable Care Act of 2010: a primer for neurointerventionalists. J Neurointerv Surg 2012;4:141-6.
4. US Department of Health and Human Services. Title XIII—Health Information Technology for Economic and Clinical Health Act (HITECH Act). Available at: http://www.hhs.gov/sites/default/files/ocr/privacy/hipaa/understanding/coveredentities/hitechact.pdf. Accessed December 9, 2016.
5. Centers for Medicare and Medicaid Services. Electronic health records (EHR) incentive programs. Available at: https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/ehrincentiveprograms/. Accessed December 9, 2016.
6. Office of the National Coordinator for Health Information Technology. Health IT dashboard. Office-based physician electronic health record adoption. Available at: https://dashboard.healthit.gov/quickstats/pages/physician-ehr-adoption-trends.php. Accessed January 16, 2017.
7. Office of the National Coordinator for Health Information Technology. Health IT dashboard. Non-federal acute care hospital electronic health record adoption. Available at: https://dashboard.healthit.gov/quickstats/pages/FIG-Hospital-EHR-Adoption.php. Accessed January 16, 2017.
8. Centers for Medicare and Medicaid Services. Medicare and Medicaid programs; electronic health record incentive program—stage 3 and modifications to meaningful use in 2015 through 2017. Available at: https://www.gpo.gov/fdsys/pkg/FR-2015-10-16/pdf/2015-25595.pdf. Accessed December 19, 2016.
9. Centers for Medicare and Medicaid Services. Beneficiary engagement and incentives models: general information. Available at: https://innovation.cms.gov/initiatives/Beneficiary-Engagement/. Accessed December 19, 2016.
10. Bentley TG, Effros RM, Palar K, Keeler EB. Waste in the U.S. health care system: a conceptual framework. Milbank Q 2008;86:629-59.
11. Gomez MA II, Hirsch JA, Stingley P, Byers E, Sheridan RM. Applying the lean management philosophy to neurointerventional radiology. J Neurointerv Surg 2010;2:83-6.
12. 113 th U.S. Congress. H.R. 4302. Protecting Access to Medicare Act of 2014. Available at: https://www.congress.gov/113/plaws/publ93/PLAW-113publ93.pdf. Accessed December 19, 2016.
13. Centers for Medicare and Medicaid Services. Medicare program; Merit-Based Incentive Payment System (MIPS) and alternative payment model (APM) incentive under the Physician Fee Schedule, and criteria for physician-focused payment models. Final rule. Available at: https://www.federalregister.gov/documents/2016/11/04/2016-25240/medicare-program-merit-based-incentive-payment-system-mips-and-alternative-payment-model-apm. Accessed December 9, 2016.
14. Centers for Medicare and Medicaid Services. Electronic specifications for clinical quality measures. Available at: https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Electronic_Reporting_Spec.html. Accessed December 9, 2016.
15. Centers for Medicare and Medicaid Services. Medicare program; advancing care coordination through episode payment models (EPMs); cardiac rehabilitation incentive payment model; and changes to the comprehensive care for joint replacement model (CJR); proposed rule. Available at: https://www.gpo.gov/fdsys/pkg/FR-2016-08-02/pdf/2016-17733.pdf. Accessed December 19, 2016.
16. Rosenkrantz AB, Nicola GN, Allen B Jr, Hughes DR, Hirsch JA. MACRA, alternative payment models, and the physician-focused payment model: implications for radiology. J Am Coll Radiol. In press.
17. Hirsch JA, Rosenkrantz AB, Liu RW, Manchikanti L, Nicola GN. The episode, the PTAC, cost, and the neurointerventionalist. J Neurointerv Surg. In press.
18. Physician-Focused Payment Model Technical Advisory Committee. Request for proposals: Medicare physician-focused payment models. Available at: https://aspe.hhs.gov/sites/default/files/pdf/226776/PTACRFP.pdf. Accessed December 19, 2016.

Credits awarded for this enduring activity are designated "SA-CME" by the American Board of Radiology (ABR) and qualify toward fulfilling requirements for Maintenance of Certification (MOC) Part II: Lifelong Learning and Self-assessment. Scan the QR code to access the SA-CME activity or visit http://bit.ly/ACRSACME.