Arrhythmia care in a value-based environment: Past, present, and future

Developed and endorsed by the Heart Rhythm Society (HRS)

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1. Introduction

The Medicare Access and CHIP Reauthorization Act (MACRA), passed by Congress in 2015, establishes the Quality Payment Program (QPP), which represents a significant change in how physicians are paid by the Centers for Medicare and Medicaid Services (CMS).[1] Since the introduction of Medicare, there have been concerns about financial sustainability. In 1997, the Sustainable Growth Rate (SGR) formula was established to match physician expenditures to

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economic growth.[2] Under the SGR law, if total expenditures exceeded the calculated SGR, reductions in physician payment would be triggered. Congress repeatedly legislated alternatives to payment reductions to avoid the potential for decreased access to care for patients covered by Medicare, but this created uncertainty within the health care system. MACRA eliminates the SGR, which is a reason why it received broad support in the medical community.[3]

QPP introduces something new into the Medicare payment system: value-based reimbursement. Previous Medicare payment models compensated physicians on the basis of fees for services provided (volume-based). QPP provides 2 pathways for payment: Merit-based Incentive Payment System (MIPS) and Advanced Alternative Payment Models (APMs). The goal of both pathways is to incentivize delivery of high quality care at lower costs.

The medical community's initial enthusiasm for QPP now has given way to concern as the practical realities of implementation come into sharper focus.[4] It is projected that only a small number of physicians will be eligible to participate in an Advanced APMs. MIPS, designed to be budget neutral, requires that as some physicians receive more compensation, others must receive less. In addition, the reporting requirements for MIPS may be expected to add considerable administrative burden and be cost prohibitive for small practices.

As payment models shift toward value, there are important implications for cardiac electrophysiologists. Electrophysiology procedures require expensive technology. In some cases, the benefits are subjective and hard to quantify. In other cases, benefits are not seen for years, well outside the usual follow-up periods. There is concern that these new payment models may disincentivize physicians from offering higher cost procedures.

There is a great deal of uncertainty within the health care field right now. Legislation has been introduced to replace the Affordable Care Act (ACA). While it is possible that alteration of the ACA may lead to changes in the implementation of MACRA (a separate law with bipartisan support), the concept of value-based payment is here to stay. Heart rhythm specialists need to be proactive to ensure that the significance and value of their work is recognized by the health care system to ensure that patients have continued access to the care they need in the future. A step-by-step process for preparing for QPP implementation is provided in Appendix 1.

2. Past National Efforts to Improve Hospital and Physician Quality

The Joint Commission's ORYX initiative, launched in 1998, was the first national program to require hospitals to report standardized core measure sets. It empowered hospitals to track their progress over time, compare their performance to national benchmarks, and focus quality improvement efforts accordingly. In 2004, the Joint Commission made the data available to the public, and CMS initiated financial penalties to hospitals that failed to report the Joint Commission measures to CMS.[5–7]

CMS launched the Physician Quality Reporting System (PQRS) in 2006 to measure quality at the level of health care providers, offering financial incentives to providers who participated. The ACA, passed in 2010, added penalties to those providers who failed to submit data.

Unintended consequences of quality measurement reporting at the hospital and physician levels are well documented. Casalino et al[8] reported that US physician practices spend more than $15.4 billion annually on the reporting of quality measures. Different payers measuring the same area of performance use different measures, complicating data collection, review, and reporting. The US Government Accountability Office[9] confirmed the misalignment of quality measures among payers and other stakeholders. Potential contributory factors include disparate decision making among payers and other stakeholders, variation in data collection/reporting errors, and perception that quality measures are not linked to meaningful improvements in health care quality.[9]

The impact of early pay-for-performance initiatives on improving outcomes has been mixed. A systematic review of pay-for-performance programs implemented in countries around the world showed improvement in process-of-care outcomes in the ambulatory setting and reduced readmissions in the hospital setting but no consistent effect on patient outcomes.[6] In the United States, improvements have been seen in medications prescribed at discharge for specific patient populations (eg, acute myocardial infarction and heart failure), as well as reduction in door to balloon time.[7,10] In addition, in the National Scorecard on Rates of Hospital-Acquired Conditions, 2010 to 2015, the Agency for Healthcare Research and Quality[11] reported a 21% decline in Hospital-Acquired Conditions. This was estimated to have saved $28 billion and prevented 125,000 in-hospital deaths. Nonetheless, the effectiveness of these early proposals remains controversial.

3. Present

3.1. National Environment of Medical Care

The primary challenge of physician reimbursement is the development of a paradigm that incentivizes appropriate, efficient, and effective care with appropriate payment. Ideally, the judicious use of medical resources that improves the quality of care as well as curbing the cost of care should be rewarded or incentivized by a payment paradigm.

At the present time, the ACA provides the current overall structure for health care delivery in the United States and fundamentally has 3 major aspects. First, it provides coverage and insurance reform, mandating all Americans to participate, requiring all insurers to accept all applicants regardless of preexisting medical conditions, eliminating lifetime caps on payments and allowing children to stay on their parents' insurance until age 26. Second, the law mandated delivery and payment reform, which would fund initiatives that would pay for quality rather than volume. Third, the law mandated identification of sustainable financing strategies for the provisions of health care reform.

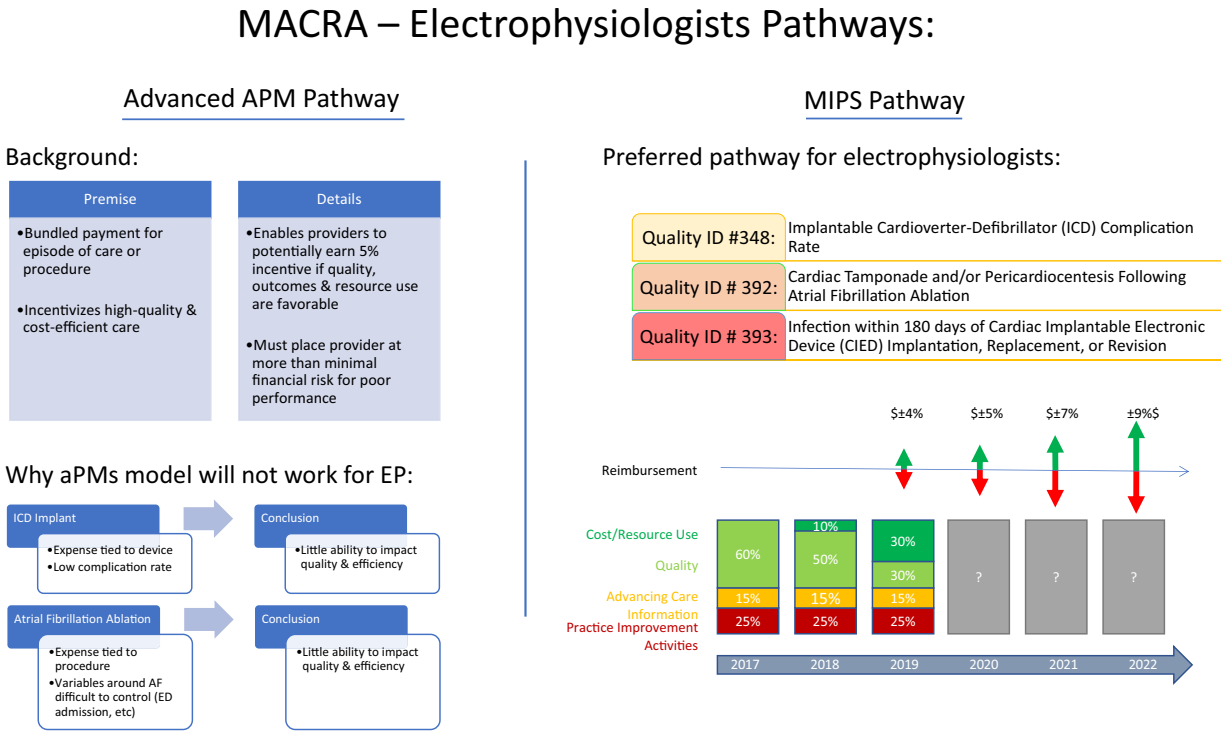

Figure 1 Centers for Medicare and Medicaid Services offers 2 pathways to meet Quality Payment Program requirements: Merit-based Incentive Payment System (MIPS) and Advanced Alternative Payment Models (APMs). The APM bundled payments for episodes of care to incentivize high-quality, cost-efficient care. Heart Rhythm Society evaluation of a bundled payment model for implantable cardioverter-defibrillator (ICD) implantation and atrial fibrillation (AF) ablation revealed that they are unlikely to succeed because of the high fixed cost of the ICD and the tremendous clinical variability in AF management beyond the control of the electrophysiologist (EP; emergency department [ED] visits, hospital admissions, etc). Under the MIPS pathway, electrophysiologists have the option of selecting the 3 Physician Quality Reporting System quality measures specific to heart rhythm care. Performance in 4 domains—quality, cost/resource use, advancing care information, and practice improvement activities—is combined to determine the payment adjustment. Relative weights of the 4 domains will change over time, with results from 2017 reflected in 2019 reimbursement rates.

This included identification and elimination of fraud and waste as well as development of an Independent Payment Advisory Board.

One of the early products of the ACA was the creation of Accountable Care Organizations (ACOs), which are groups of doctors, hospitals, and other providers that commit to give coordinated high quality care to Medicare patients. The components of ACOs would continue to be paid using the current fee-for-service paradigm. ACOs were then able to share the savings from decreased costs. Gain sharing would only be shared if ACOs respected the patient's right to direct care and if ACOs performed on a small number of quality measures.

Other developments included moving the PQRS and the Meaningful Use program from incentive programs to penalty programs for nonreporters or underperformers, and the development of a Value-Based Payment Modifier (VBM) that would modify payments for hospitals was implemented and proposed for physicians. This VBM accounted for quality, patient satisfaction, as well a total cost of care for patients attributed. The ACA also contains numerous provisions that promote transparency and accountability—including the creation of Physician Compare (https://www.medicare.gov/physiciancompare/), a website mandated to, over time, contain comparative performance and quality measures of physicians.

While the ACA provides an overall framework for health care coverage and payment in the United States, MACRA outlines the process of physician payment for Medicare beneficiaries. Signed into law on April 16, 2015, with broad bipartisan political support, MACRA's primary role was to repeal the SGR, but it also provided a 0.5% payment increase to physicians and funded CHIP (Children's Health Insurance Program) for 2 years. In addition, MACRA combined PQRS, Meaningful Use, and VBM into 1 program called the MIPS with some incentive for high performers and provided an additional incentive for participation in an Advanced APM. MACRA mandated a penalty for providers that did not participate in MIPS or an Advanced APM.

Physicians in MIPS must report performance measures to CMS (Figure 1). Initially the performance measures will be weighted toward quality, with weight placed on resource use or cost, but over a currently planned 4-year period, the weight of quality will be decreased and gradually replaced by adding resource use measures to a 2021 payment year goal of quality of care (30%), resource use (30%), meaningful use of electronic health records (EHRs) (25%), and clinical practice improvement activities (15%). High-scoring

physicians will get a bonus, and low-scoring physicians will incur a penalty. Physicians will be allowed to choose on which quality measures they want to be evaluated. For the calculation of payment bonuses and penalties, the US Department of Health and Human Services will be tasked to develop a composite score for each physician on the basis of these factors. As shown in Figure 1, the relative percentages used for scoring will gradually change over time.

There are significant financial implications for these quality measures. Maximum bonuses and penalties will be 4% in 2019, 5% in 2020, 7% in 2021, and up to 9% in 2022 and beyond. Although bonuses and penalties are supposed to be budget neutral, additional funding of up to $500 million a year will be allocated to separate bonuses for "exceptional performance" from 2019 through 2024.

Physicians choosing to pursue reimbursement in an Advanced APM will have to have "significant financial risk" in the program. An Advanced APM could be an ACO, approved patient-centered medical home, or other entity, where payment is at least partly based on quality performance and total spending. Payment tied to Advanced APM performance must be 25% of a doctor's or group practice's Medicare revenue in 2019, increasing to 75% in 2022. Physicians who join a CMS-approved Advanced APM will get an annual 5% bonus in their fees from 2019 through 2024. And, starting in 2026, physicians in APMs will receive an annual across-the-board fee increase of 0.75%. Physicians participating in MIPS will get a 0.25% annual increase.

MACRA authorizes $100 million for technical assistance to small practices (up to 15 professionals), $20 million per year from 2016 through 2020. Under MIPS, small practices can elect to report together as "virtual groups" and receive a MIPS composite score for their combined performance. The law also authorizes $75 million for physician groups to improve quality measure development.

3.2. Heart Rhythm Care–Specific Quality Measures

There are several established quality measures that were developed for general cardiology and are related to electrophysiology practice. These measures include the use of evidence-based medications for heart failure, use of periprocedural antibiotics, and anticoagulation for patients with atrial fibrillation (AF).

A Heart Rhythm Society (HRS) strategic goal is to define and develop physician-level performance measures that address heart rhythm care for purposes of quality improvement and public reporting. In 2010, the HRS Quality Improvement Subcommittee conducted a literature review, identified gaps in performance measures, and defined areas for future focus.

HRS formed focus groups, and members provided feedback about the measures. The measures were field tested for validity and reliability. A pilot study at 2 sites was launched for the purpose of quality improvement and validation of the quality measures. Through this process, the measure specifications were finalized, approved by the National Quality Forum, and incorporated into PQRS. The 4 unique heart rhythm care performance measures are as follows:

1. *HRS-3: Implantable Cardioverter-Defibrillator (ICD) Complications Rate* assesses the physician-specific risk-standardized rates of procedural complications following the implantation of an ICD. (MIPS Quality ID #348)
2. *HRS-4: In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device (CIED)* assesses the proportion of adult patients with a new CIED implanted during the reporting period who had an in-person evaluation within 2–12 weeks following the procedure—either by the electrophysiologist or through coordination with another physician. (National Quality Forum #2461)
3. *HRS-9: Infection within 180 Days of Cardiac Implantable Electronic Device (CIED) Implantation, Replacement, or Revision* assesses the rate of infections requiring device removal or surgical revision within 180 days following implantation, replacement, or revision of a pacemaker device, ICD, cardiac resynchronization device, or implantable loop recorder. (MIPS Quality ID #393)
4. *HRS-12: Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation* quantifies the rate of cardiac tamponade and/or pericardiocentesis occurring within 30 days following atrial fibrillation ablation procedures. (MIPS Quality ID #392)

3.3. MIPS: Quality Specialty Measure Sets and Reporting

In the first year of MIPS, the Quality Performance Category is worth 60% of a clinician's final score. To achieve a top score, physicians are required to report 6 quality performance measures, including 1 outcome measure or another high-priority measure if there is no eligibility for an outcome measure. CMS has developed a series of specialty measure sets aimed to assist providers in selecting measures that are meaningful for their practice. If a provider chooses to report on a specialist measure set, he or she will report on all the measures included in the set in lieu of the 6 quality performance measures that would otherwise be required. The Electrophysiology Cardiac Specialist set include 3 measures: (1) HRS-3: Implantable Cardioverter-Defibrillator (ICD) Complications Rate; (2) HRS-9: Infection within 180 Days of Cardiac Implantable Electronic Device (CIED) Implantation, Replacement, or Revision; and (3) HRS-12: Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation.

3.4. Current Use of Heart Rhythm Care Measures

Even though the heart rhythm care community has achieved great success in the development of electrophysiology-specific performance measures, there is concern that few electrophysiologists will likely take advantage of this measure set because they are part of larger practices that will likely opt to report on more general or cross-cutting measures. Ongoing performance measure activities will include

advocating for mechanisms that give individuals in a group more control over measure selection or otherwise recognize the performance of individual physicians. The utilization of electrophysiology-specific measures and development of new risk-adjusted measures is important to estimate the value of electrophysiology care for the management of population health.

4. Future

As hospital systems have worked to build programs and infrastructure to meet federal quality mandates, the national hospital Medicare margin (the relationship between Medicare hospital payments and costs of medical care) reached a low of negative 9% in 2016. This problem is sure to increase, as 7000 new baby boomers become Medicare beneficiaries each day. The MACRA legislation is, in part, intended to better align physician reimbursement with hospital reimbursement so that the 2 are not working at cross-purposes. QPP implementation is not in its final form and is subject to continuing evolution over the coming years, but it will be the immediate tool used to drive a shift toward value-based care. Over time, the amount of financial risk or reward under QPP will be substantial and is predicated on successful demonstration of metrics as defined under MIPS or the Advanced APM structure.

4.1. Initial Advanced APM Analysis for Paroxysmal AF Ablation, AF Management, and ICD Implantation

By establishing payment incentives for participation in Advanced APMs, CMS is now faced with the challenge of creating opportunities for broad participation. Thus far, specialty-focused Advanced APMs have been approved for comprehensive end-stage renal disease, oncology, as well as episodic payment programs around comprehensive care for joint replacement. Episodic payments are typically discounted relative to historical reimbursements and adjusted on an annual basis to account for patient complexity and quality of care delivered. They are meant to incentivize process efficiency, standardization of techniques and equipment, waste reduction, and better care transitions to minimize total cost of care. Recently, episodic payment models have been designed for cardiac care including myocardial infarction, coronary artery bypass surgery, and cardiac rehabilitation, although their implementation has been delayed.

HRS recognizes the importance of high-value care and is actively engaged with CMS to explore possible Advanced APMs for heart rhythm care. The HRS MACRA Task Force was created to identify potentially viable Advanced APMs within the criteria defined by QPP. The group sought to incorporate clinically meaningful measures of quality that were achievable and scalable across a wide range of practice settings.

The MACRA Task Force partnered with an outside consultant to explore 2 procedures as potential clinical episodes of care that might be attractive to CMS as an Advanced APM: (1) ICDs for the primary prevention of sudden cardiac death and (2) catheter ablation for paroxysmal AF (PAF).

4.2. ICD Implantation for Primary Prevention

ICD implantation and its subsequent care are substantial drivers for health care costs that affect thousands of patients at risk of sudden death annually. This made primary prevention ICD implantation attractive as a potential Advanced APM. Reimbursement was modeled as a single global payment for all care incurred during the episode, with the episode beginning at implant and encompassing the first 3 months of follow-up. This Advanced APM lends itself to remote monitoring and perhaps even telemedicine to avoid in-office wound checks. Quality measures included existing criteria related to lead dislodgments or perforations and device-related infection within 90 days.

To evaluate this proposed Advanced APM, all patients with ICD implantation or replacement code were identified in a Medicare data set from 2014. Medicare Part A and Part B claims in the subsequent 90 days were examined. The outpatient costs were highly concentrated in the ICD implantation procedure itself with low incidence of revisions and low variability in cost of the procedure itself, suggesting little opportunity for cost savings. Thus, the predicted probability of success as an Advanced APM was low, and this potential Advanced APM was rejected.

4.3. Ablation for PAF

AF affects more than 3 million people in the United States, and catheter ablation for symptomatic PAF is a class IIa recommendation as first-line therapy and a class I recommendation for drug-refractory patients.[12] A recent analysis of Medicare beneficiaries from 1999 to 2013 found that patients were more commonly treated with catheter ablation, and although the median expenditure per beneficiary for AF increased from $2932 to $4719, during this same period health-related outcomes such as in-hospital mortality, hospital readmission, 30-day mortality, and 1-year mortality also improved.[13] To minimize heterogeneity among patients and procedures, the group hoped to limit the ablation Advanced APM to patients with PAF. The episodes of care focused on the first 90 days and encompassed periprocedural studies, procedure cost, hospital cost, and postdischarge care. Any additional costs incurred in the first 90 days as a direct result of procedural complications or arrhythmia recurrence would be incorporated into the episodic payment. The group then modeled a subsequent phase of 6 months following the first 90 days, during which AF-related costs would be tracked but reimbursed in the usual fee-for-service manner. This extended follow-up would allow monitoring of repeat catheter ablation, cardioversions, readmissions, and late complications in an effort to account for outcomes and safety. The follow-up data could be utilized for quality adjustment of future payment rates.

To assess feasibility of this Advanced APM, all patients receiving catheter ablation for AF were identified in a 2014 Medicare data sample, and all Medicare payments made in the subsequent 90 days were summed. While significant variability exists in ablation approaches and periprocedural

services, the bulk of the cost was felt to be "sunk" in the procedure itself. Unfortunately, because of the limitations of the *International Classification of Diseases, Ninth Revision* and claims-based data analysis, separating a specific group of patients with PAF from the larger group of all patients with AF receiving catheter ablation was difficult. Regardless, catheter ablation for PAF was determined to have a low probability of success as an Advanced APM because of relatively low volume and little opportunity for cost savings, and this Advanced APM was rejected.

After the rejection of 2 original Advanced APM proposals, general AF management was considered. CMS has already taken specific measures to track costs of AF. Using a Medicare Standard Analytic File 5% Sample for 2013–2014, AF-associated physician services hospital outpatient costs were $1.28 billion while costs of AF physician services were $102.4 million. For the subpopulation of patients undergoing pulmonary vein isolation and associated care, there were $245.6 million in hospital costs and $2.72 million in physician costs among 19,800 procedures. While resource utilization for AF management is substantial, developing a clearly defined APM proved difficult. The extent to which electrophysiologists can control costs is unclear. As with other chronic conditions, the ability to track patients across disparate systems and EHRs and to use predictive analytics to identify high utilizers is an area that warrants further investigation.

4.4. The Pursuit of Value

While improved quality is a goal of all in the medical community, agreeing upon what constitutes "quality" can be challenging. Common discussions around quality measures might include perioperative infection rates, patient satisfaction, or medication reconciliation. The relative value placed on these measures is a matter of perspective, with various stakeholders feeling more strongly about one or the other. A more robust discussion can be held when describing value, a concept that informs outcome per unit cost. Unfortunately, measuring value is challenging since good cost data are hard to come by, and outcomes measurement can be slow and resource intensive. Instead, surrogate process measures have been used in health care despite an absence of validated outcomes.

Looking forward, recording many of the existing quality metrics (infection rates, readmissions, etc) will likely be automated, perhaps easing administrative overhead. The methods for aggregate monitoring must be constantly reviewed to ensure continued validity and relevance. Take, for example, the efforts toward reducing heart failure readmissions, which has recently had significant Medicare reimbursement implications. A recent analysis showed no difference in quality of care and clinical outcomes between hospitals that performed well and those that performed poorly. Even more concerning, the authors found that 1-year mortality rates were higher in centers with low readmissions rates.[14] This calls into question the validity of these measures to justify payment penalties and again bolsters the argument for outcome-based goals that are backed by prospective data. These real-world effects underline the importance of maintaining expert involvement in the formation of the payment rules and the continued input and negotiations between various stakeholders. As scientists and clinicians, we need to be wary of cognitive errors driven by cost concerns, which lead to invalid assumptions and resulted unintended consequences of payment penalties.

4.5. The Unintended Consequences of Well-Intentioned Policy

Defining a new model for physician payment is quite complex, and this inherent complexity can lead to a poor understanding of risks and rewards, unintended incentives, and wasted resources on the part of health systems.

Consider the value proposition of the EHR and the gap between its promise and current reality. A transition to EHRs, with the ability to e-prescribe, to directly communicate with patients in a HIPAA (Health Insurance Portability and Accountability Act of 1996)–compliant manner through a portal, and to integrate data across disparate systems is a worthy goal. Unfortunately, the rollout of EHRs has proven incredibly expensive and interoperability is not yet a reality. The average provider now spends 3- to 4-fold more time managing an electronic chart and doing clerical work that they do with face-to-face outpatients in the office.[15]

In addition, perverse incentives can be created by systems that reward cost reduction, potentially leading to suboptimal care of patients. These aspects are of most concern when clinical judgment runs counter to incented behavior or the financial incentives are to ration care rather than improve operational efficiencies or drive better outcomes, particularly when the methods and incentives leading to optimal outcomes remain unproven.

4.6. Inherent Overhead of QPP

QPP will require health systems and providers to monitor quality and engineer processes across the continuum of care. This may require manual aggregation of data from medical claims and different medical records software that have not been designed with interoperability in mind. While most systems have already made substantial investments in the necessary infrastructure to extract and track these data, the transition to value-based care promises to be resource and time intensive. This may necessitate additional administrative staff, population health software, and more information technology support, and it may result in diversion of provider resources away from patient care and toward requirements for appropriate reimbursement.

HRS recognizes this financial burden, and the need to include this in the aggregate analysis of the effects of QPP implementation. While the implicit goal of MACRA and other legislated health reform initiatives—reduction in health expenditures and improved outcomes—is laudable, there is no "one size fits all" blueprint for execution. Moreover, in

an era where resource utilization is being increasingly scrutinized, it further underscores the need for careful analysis of cost-effectiveness and evidence-based process change. The authors believe that a major benefit of HRS is to serve as a venue for sharing experiences and best practices in this regard and to promote legislative advocacy.

4.7. National Policy and an Unpredictable Future

Currently the ACA remains in effect, broadly requiring all Americans to have insurance coverage or undergo financial penalty. If efforts to repeal and replace the ACA are successful, private payers may well find some regulatory reprieve. Nonetheless, given that MACRA and the ACA are largely independent, it is conceivable that private payers will adopt value-based care models predicated on lessons learned under QPP. In fact, the transition from volume to value should be seen as more than just checking boxes to meet federal mandates. Rather, there is an opportunity to improve the health care system to achieve less waste, greater efficiency, and better outcomes.

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Appendix 1: Initial Practice Evaluation Prior to QPP Implementation

Most electrophysiologists will report as a group under a single tax identification number and participate under QPP's MIPS. For those employed or affiliated physicians reporting under an Advanced APM (eg, a next-generation Accountable Care Organization), payer contracts will be focused on demonstrating population level or disease-focused value. Each practice can take steps to position itself for early success.

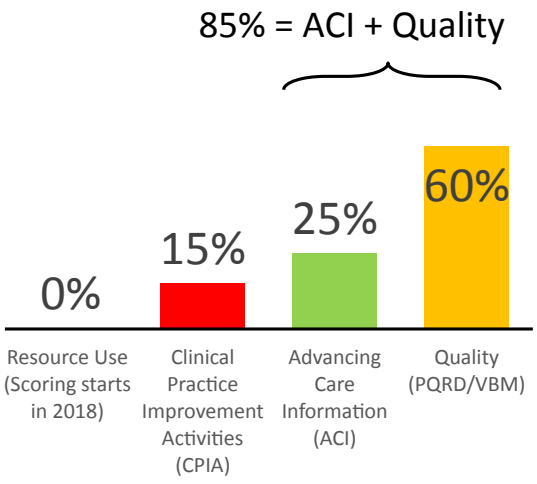
General Considerations for 2018

- Outline a strategy with your practice administrator for success under QPP as soon as possible
- Educate your colleagues and encourage discussion in your practice group about the new regulation
- Determine whether you have $90,000 or less in Medicare charges *or* 200 or fewer Medicare patients annually. If so, you are exempt from MIPS participation
- Determine whether you want to participate as an individual or group. If participating and reporting as a group, all physicians in the group must report on the same measures across all 4 categories
- Implement certified EHR technology. To report on advance care information, do you have a well-designed certified EHR that can help providers fulfill Meaningful Use and PQRS requirements with much less effort?
- How will the group provide the resources to allow a practitioner to earn a maximum base score in the Advancing Care Information category?
- Does the administration understand the implication of 4% decrease in payments? How will this impact our practice revenue?

Let's Get Ready for MIPS

The MIPS composite performance score will factor in performance in 4 weighted performance categories on a 0- to 100-point scale.

Category	Weight	Notes
Quality	60% in 2017 and 50% starting from 2018	Report 6 quality measures or 3 measures from heart rhythm care set
Resource use	0% in 2017 and 10% starting from 2018	Similar to quality
Clinical practice improvement activities	15%	Activities that improve clinical practice
Advancing care information	25%	Formally known as Meaningful Use



Quality

- Meet current quality reporting program measures. Do I have a method of reporting the 3 electrophysiology quality measures?
  - HRS-3: Implantable Cardioverter-Defibrillator (ICD) Complications Rate
  - HRS-9: Infection within 180 Days of Cardiac Implantable Electronic Device (CIED) Implantation, Replacement, or Revision
  - HRS-12: Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation
- If you are not tracking the 3 HRS quality measures, do you have a process to choose and track 6 additional quality measures? The quality measures may relate to cardiology.
- Access and review the 2015 annual PQRS feedback reports to see where improvements can be made. CMS has provided a tool to review and select MIPS-approved quality metrics at https://qpp.cms.gov/mips/quality-measures.

Clinical Practice Improvement Activities (CPIA)

- Are you aware how many improvement activities your practice requires?
- Most participants: Attest that you completed up to 4 improvement activities for a minimum of 90 days.
- Groups with fewer than 15 participants or if you are in a rural or health professional shortage area: Attest that you completed up to 2 activities for a minimum of 90 days.
- Will the staff require training for the new EMR edition? What will be the cost of an upgrade and associated changes? How will the new edition change workflows?

- How will the group be submitting CPIA data? In 2017, CPIA will be met by attestation.
  - Which CPIA should the group or individual choose to report?
  - What are the steps necessary to connect the EMR to a clinical registry and health information exchange?

Advancing Care Information (Formerly Meaningful Use)

- Inspect the current EMR to make sure it is a certified EHR technology, which is often referred to as Certified Electronic Health Record Technology. Determine whether it is 2014- or 2015-edition Certified Electronic Health Record Technology.
- Conduct a careful security risk analysis in early 2017. Failure to properly do so will result in a score of zero for this category.

Keep Track of MIPS

To maximize your Medicare bonuses over the long term, keep track of all MIPS requirements and other components of the MACRA legislation, as CMS will update requirements on an annual basis.

Appendix Table A1 Writing Group Author Disclosure Table

Writing group	Employment	Consultant/advisory board/honoraria	Speakers' bureau	Research grant	Fellowship support	Equity interests/stock options	Others
Fred M. Kusumoto, MD, FHRS (Chair)	Mayo Clinic Jacksonville, EP and Pacing Services Orlando, FL	None	None	None	None	None	None
Jim W. Cheung, MD, FHRS	Weill Cornell Medical College, Cardiology, New York, NY	1: Biosense Webster, Biotronik, Medtronic	None	5: Biotronik	2: Abbott/St. Jude Medical, Boston Scientific, Biotronik 3: Biosense Webster, Medtronic	None	None
Steven C. Hao, MD, FHRS (Coach)	Sutter Pacific Medical Foundation, San Francisco, CA	1: Abbott/St. Jude Medical, Biosense Webster, Boston Scientific, Medtronic	None	None	None	None	None
Jonathan C. Hsu, MD, FHRS	Cardiac Electrophysiology Section, University of California, San Diego, La Jolla, CA	1: Abbott/St. Jude Medical, Biotronik, Boston Scientific, Medtronic	None	4: Biosense Webster, Biotronik	None	None	None
Marcin Kowalski, MD, MBA, FHRS	Staten Island University Hospital, Northwell Health System, New York, NY	1: Medtronic, Abbott/St. Jude Medical	None	None	None	None	None
Ruth A. Madden, MPH, RN	Cleveland Clinic, EP and Pacing, Cleveland, OH	None	None	None	None	None	None
Pamela K. Mason, MD, FHRS	University of Virginia Health System, Charlottesville, VA	None	1: Boston Scientific, Medtronic	None	1: Medtronic	None	None
G. Stuart Mendenhall, MD, FHRS	University of Pittsburgh, Pittsburgh, PA	1: Medtronic, Inc.	None	None	None	None	None
Devi G. Nair, MD, FHRS	St. Bernards Heart & Vascular Center, Jonesboro, AR	1: Boston Scientific, Medtronic	1: Boehringer Ingelheim, Boston Scientific, Medtronic, Janssen Pharmaceuticals, Johnson & Johnson	1: Abbott/St. Jude Medical, Medtronic 2: Boston Scientific	None	None	None
Javed M. Nasir, MD, FHRS	Cardiac Electrophysiology and Arrhythmia Service, Stanford University, San Francisco, CA	None	None	None	None	None	1: Abbot Vascular, Abbott, Medtronic

Joshua R. Silverstein, MD	Mount Carmel Columbus Cardiology Consultants, New Albany, OH	1: Medtronic, Abbott/St. Jude Medical, Boston Scientific, Janssen, Pfizer, Amgen, ZOLL Medical 2: Biosense Webster	None	3: Medtronic	None	None	None
David J. Slotwiner, MD, FHRS	NewYork-Presbyterian/ Queens, New York, NY	None	None	None	None	None	None
Brad Sutton, MD, MBA	University of Louisville, Louisville, KY	1: Medtronic, Abbott/St. Jude Medical 2: Boston Scientific	None	None	None	None	None
Khaldoun G. Tarakji, MD, MPH, FHRS	Cleveland Clinic, Cleveland, OH	1: Medtronic, Inc.	None	None	None	None	None
Gaurav A. Upadhyay, MD, FHRS	University of Chicago Medical Center, Chicago, IL	1: Medtronic, Boston Scientific, Biotronik, Abbott/St. Jude Medical, Biosense Webster, ZOLL Medical	None	3: Biotronik, GE Health 4: Medtronic 5: Boston Scientific	None	None	None
Emily P. Zeitler, MD, MHS	Duke University Hospital, Durham, NC	None	None	None	None	None	None

0 = $0; 1 = <$10,000; 2 = >$10,000 to <$25,000; 3 = >$25,000 to <$50,000; 4 = >$50,001 to <$100,000; 5 = >$100,000.