said. Once the app is ready for commercial use, physicians can use the app data to pinpoint the circumstances that may put excessive strain on an athlete’s heart with more precision than a 1-time ECG taken in a physician’s office, she explained.

Because a smartphone ECG app already has been approved, it’s disappointing that the interassociation task force did not address the role of mobile technology in their guidelines, she said.

“The NCAA should be acknowledging that we can very nimbly and continuously and on demand record ECGs from athletes that allow for discovery and understanding of syndromes [related to SCD], and this was a missed opportunity for research and learning,” Saxon said.

Prystowsky also appreciates the value of mobile technology in tracking ECGs. Student athletes whose preparticipation evaluations have raised questions are often referred to him, and he uses implantable loop recorders to assess their heart rhythms over time. Such devices, which are about the size of a USB driver and battery-powered, are inserted beneath the athletes’ skin and can record the heart’s rhythm for up to 3 years (Mofrad PS. Circulation. 2012;126:e472-e474).

Hainline is skeptical about the reliability of student athletes’ do-it-yourself ECGs using a smartphone app. Mobile technology is still evolving, he said. If mobile ECGs get to the point where they are as informative as ECGs conducted with 12-point leads and are interpreted by an expert, such apps may become useful diagnostic tools, he said.

Currently, however, ECG apps are no substitute for carefully conducted ECG screenings that are coupled with a personal history and read by clinicians educated in interpreting results who can provide follow-up care, Hainline said.

**Interpreting ECGs**

Ultimately, what’s important is not whether ECGs are mandated, but that they’re performed and interpreted correctly and athletes with abnormal results receive appropriate follow-up care, said Drezner.

This is why, for those colleges like University of Washington that require participation ECGs for student athletes, the interassociation consensus statement recommends that ECG data be assessed by clinicians versed in the ACC/AHA/Heart Rhythm Society ECG standards and interpretation guidelines (Kligfield P et al. Circulation. 2007;115:1306-1324).

“The knowledge base of how to interpret an ECG is all over the place,” Hainline said. “Sports cardiology as a discipline is relatively new, with rapidly emerging data on how to interpret an ECG in an elite athlete versus a nonathlete.”

This variability in interpreting ECGs is a significant reason why, after all the discussion, the task force ultimately decided against recommending universal screenings, he noted.

“ECG provides a benefit when it is done well,” Drezner said. “And it has the potential to cause problems when it is not done well.”

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**The JAMA Forum**

**Changing Physician Behavior Is Harder Than We Thought**

Gail Wilensky, PhD

Two recently released unrelated reports serve as stark reminders of how challenging it has been to change physician behavior in a sustained and purposeful way. This isn’t to suggest we shouldn’t keep working to find strategies for delivering US health care more effectively and efficiently, but the reports’ findings underscore the importance of setting realistic expectations.

The first report (http://bit.ly/1XUE3kx) featured the midterm assessment of the Comprehensive Primary Care initiative (http://1.usa.gov/IViLwdj), a 4-year effort that began in October 2012, funded by the Centers for Medicare & Medicaid Innovations (CMMI). The purpose of the project, part of a large multipayer initiative that used several types of support, is to determine how offering care-management fees affects the cost and quality of care provided in approximately 500 primary care practices taking part in the initiative. Unfortunately, despite having paid the participating practices a median of $115,000 per clinician in care-management fees over 2 years, the midterm assessment found that practices have not demonstrated any net savings after taking the incentive payments into consideration.

This is not surprising. Other pilot projects (including the Medicare Group Practice Demonstration (http://1.usa.gov/1sah9cB) and the CMMI’s Pioneer Accountable Care Organization [ACO] initiative [http://1.usa.gov/25whmq2]) have shown that it is challenging even for large, seasoned group practices to produce savings (http://bit.ly/1YZVbUa).

More surprising was the finding that the practices participating in the Comprehensive Primary Care initiative have not shown many appreciable quality improvements to date. An exception is that patients with high-risk of diabetes were more likely than patients in a comparison group to receive all recommended tests. In contrast, the Medicare Group Practice Demonstration (http://1.usa.gov/I UdKzXq) and many of the ACOs (http://bit.ly/1KDhzJW) have reported quality improvements.
A New Initiative

In a case of ironic timing, the CMS announced the agency’s “largest-ever multi-payer initiative” to change how primary care is delivered (http://1.usa.gov/1UZdglm) just a few days before publication of the discouraging results from the Comprehensive Primary Care initiative’s midterm assessment (but obviously long after those results were known). This new effort, called Comprehensive Primary Care Plus (CPC+), plans to include as many as 5000 practices in 20 regions and will feature 2 “tracks,” with different requirements and payment options.

Practices in track 1 will receive a monthly care-management fee, along with the usual Medicare fee-for-service payment based on the Medicare fee schedule. Those in track 2 will be paid a monthly care-management fee along with a comprehensive primary care-management fee and a reduced Medicare payment fee. Under both tracks, the practices will be required to ensure that patients have access to services around the clock, to proactively manage the highest-risk patients, and to document and analyze relevant quality and utilization measures, among other requirements.

It remains to be seen whether enough practices will volunteer to participate in the initiative and whether the CPC+ pilot will be more successful than the Comprehensive Primary Care initiative in improving quality and reducing costs. CMS reference the latter in its announcement but did not mention the disappointing midterm assessment or reasons one might expect CPC+ to be more successful.

The report on midterm assessment speculated that the participating practices might need more time to change behavior, which means that the final assessment may show different results. It’s also possible that with the increased focus on costs and quality metrics that was occurring in health care generally, the bar was raised for the practices participating in the initiative.

Another Problem Resistant to Change

The second report, a study reported in the BMJ, estimated that medical errors accounted for 250 000 deaths in 2013 and, thus, should be regarded as the third leading cause of death in the United States, surpassed only by heart disease and cancer (http://bit.ly/IrtW65a). According to the study, the most commonly cited estimate of 44 000 to 98 000 annual US deaths from medical error, from a landmark 1999 report (http://bit.ly/lViqMBI) from the Institute of Medicine (IOM), is both limited and outdated.

The BMJ report’s authors said that the IOM estimate was based not on primary research but rather on 2 earlier studies that gathered data from medical records in 1984 (http://bit.ly/IWOY3FB) and 1992 (http://1.usa.gov/1Ta7OBG). Their own estimate used findings from studies reported after the 1999 report and extrapolated to 2013, based on the number of US hospital admissions in that year. They also indicate even their estimate falls short of the true incidence of medical error–related deaths because it is based on inpatient deaths only and because of errors in the health records.

The BMJ study suggests several strategies to reduce medical error deaths, but one of its major points is the need for more reliable data than is currently available. The problem is that current reporting of causes of death requires one or more International Classification of Death (ICD) codes to be put on the death certificate. But there are no ICD codes for human and system errors. At best, there are a few codes where medical error can be inferred, such as anticoagulation medication causing adverse effects.

To help remedy this, the authors suggest including an additional field on death certificates to indicate whether a preventable complication stemming from the patient’s medical care contributed to the death. Another strategy, they said, would be for hospitals to conduct rapid, independent investigations of deaths to determine potential contributions of errors. They posit that measuring the consequences of medical care on patient outcomes is “an important prerequisite to creating a culture of learning from our mistakes” and that without better measurement, such a culture cannot develop.

What both of these reports have in common is that despite years of focused efforts to address problems in primary care delivery and to reduce medical errors, it is difficult to independently document much improvement. I’m not suggesting that finding out what doesn’t work isn’t critical to finding out what will work. I’m also not suggesting that there has been a lack of will or interest in tackling either of these areas. But it is hard to ignore that there is little evidence that we’ve made much measurable progress in addressing these problems.

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