Electronic Health Records—A System Only as Beneficial as Its Data

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Health care innovations can influence patient care, and enhancements in health information technology have avowed to improve patient safety and reduce medical errors.[1] Studies to improve safety and decrease medical errors have been identified as research priorities by the National Academy of Medicine since publishing its report on building a safer health system in 1999.[2] Electronic health records (EHRs) can achieve this vision by improving the efficiency and quality of health care and by streamlining health care processes.[3] Despite health information technology advances, we are still limited by the data that are elicited at the bedside and recorded in the EHR by health care professionals.

In 1995, the Centers for Medicare & Medicaid Services (CMS) established policies tying reimbursement for evaluation and management services to documentation requirements. Since then, CMS rules and regulations have influenced the documentation structure of EHRs. To encourage the implementation of EHR and align financial incentives, the 2009 Health Information Technology for Economics and Clinical Health Act launched the Medicare and Medicaid Meaningful Use reward and incentive program. From 2008 to 2012, a rapid adoption of EHRs among general acute hospitals increased the use of EHRs from 9% to 44%.[4] In principle, the benefits of health information technology seem obvious, eg, it improves quality of care, increases patient safety, leads to fewer medical errors, and reinforces interaction between physician and patient. However, even with the wide adoption of EHRs, there have been mixed results.[3] It is not uncommon to see studies that show that EHRs may lead to inadvertent consequences, resulting in new safety risks and medical errors.[5]

Since its inception, CMS has tried to find ways to reduce the documentation burden associated with evaluation and management services, stating that requirements were often outdated with respect to the practice of medicine and that coding nuances were too complex and ambiguous. Very few peer-reviewed studies have evaluated the veracity of physician documentation within EHRs.[6] The study by Berdahl et al[7] reports on the association of concordance of EHR documentation with emergency physicians' observed behaviors. In November 2018, CMS released the 2019 Medicare Physician Fee Schedule Final Rule,[8] comprising new documentation rules and regulations, which details a new payment methodology for evaluation and management services that will come into effect on January 1, 2021.

There exist 7 elements within emergency department evaluation and management service standards, of which the first 3 are deemed key factors: (1) history, (2) examination, (3) medical decision-making, (4) counseling, (5) coordination of care, (6) nature of presenting concern, and (7) time. Certain sections of emergency physician documentation, such as the review of systems (ROS) and the physical examination (PE), may be more susceptible to errors owing to the widespread use of autopopulated text. The study by Berdahl et al[7] evaluated how well EHR documentation represented the ROS and PE performed by a small group of emergency physician residents. As part of this study, 10 real-time patient-physician encounters were observed per physician resident (9 final-year emergency medicine physicians) per site (2 sites) to quantify the percentage of documentation of the ROS and PE that observers (12 observers, comprising 10 undergraduate students and 2 attending emergency physicians) could confirm with subsequent EHR review. Observers confirmed approximately 40% of ROS and 56% of PE documentation, demonstrating the need for improvement in physician documentation. Unsubstantiated documentation was more common for elements that seemed to be less clinically relevant.

There are limitations and strengths to this study. One of the most significant limitations is that the observed physicians were residents rather than practicing attending physicians. Residents may not be aware of compliance requirements, and this may highlight the need for earlier compliance education in residency training. Another concern is that most observers were undergraduate students who did not have any medical training. Although they were trained by the study team, it is possible that they could have missed some of the information or not realized that a particular PE maneuver was the same as another and, as a result, noted it as missing from the examination (eg, a variation in testing for Babinski sign). Despite these limitations, the authors performed 1 of the few EHR information accuracy investigations using concurrent observation. It is a well–thought-out observational study that overcomes the challenges of data collection, physician resistance to auditing, and the desire to preserve an image of physician infallibility.

It is of vital importance for clinical health services and legal purposes that clinicians document medical record information consistent with the level of care given. While these findings raise the possibility that some documentation did not reflect physician actions, further studies are necessary to see how widespread this occurrence is within all specialties and whether this is also the case for attending physicians. There is also a need to investigate differing health systems. An improved understanding of the root cause of discrepancies between patient report and physician documentation will be helpful in detecting ways to prevent them in the future. Health system accountability is becoming increasingly important for health policy makers and is ultimately necessary to ensure that patients receive the best possible care. Further studies will be vital to better understand physician reporting behaviors and to identify optimal approaches to improve it.

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