

Special Requirements for Electronic Health Records in Dermatology

Mark D. Kaufmann, MD*, and Shraddha Desai, MD†

Government incentives and mandates to increase the meaningful use of electronic health records (EHR), with subsequent disincentives by Medicare, have made a significant push for dermatologists to adopt this technology into their practices. EHRs were originally developed for primary care physicians; however, owing to the unique features of dermatology, specialty-specific systems are a must. In this article, we discuss the special needs of dermatologists when choosing an EHR system.

Semin Cutan Med Surg 31:160-162 © 2012 Elsevier Inc. All rights reserved.

KEYWORDS electronic health records, dermatology, health information technology, software, MARS, Mohs software, dermatopathology software, integration, EHR extender products, EHR certification

Few issues in dermatology practice management evoke as much emotion as the topic of the use of electronic health records (EHRs). Ever since the Office of the National Coordinator of Health Information Technology was created in 2004 by executive order of President George W. Bush, a healthy debate on this issue has taken place within the house of medicine, as well as within the specialty of dermatology.¹ EHRs have the potential to use information technology to help deliver quality health care to patients, and with \$27 billion from the American Recovery and Reinvestment Act (ARRA) of 2009, adoption of EHRs is now being incentivized.² Moreover, the Centers for Medicare and Medicaid Services have defined “meaningful use” criteria for EHRs that include documentation of problem lists and active diagnoses, e-prescribing, and order entry with drug–drug interaction checks to help facilitate their use.³⁻⁶ Regardless of these interventions, many practitioners are still hesitant to implement the programs. To be useful, additional dermatology-specific

EHR criteria must be met. This is because of the field’s broad coverage of both surgical and medical care, heavy reliance on clinical photos and diagrams, and close interaction with other specialists, such as dermatopathologists and Mohs surgeons. Consequently, EHRs that include a drawing tool function, the capability to upload and annotate files and photos, and easily interface with specialists would be most beneficial. Currently, many dermatologists have adopted large comprehensive systems that are more geared toward other medical specialties or hospitals. These include companies such as Epic and Allscripts. Although, they have their place in medicine, the programs can be cumbersome and overwhelming for dermatologists, especially for older physicians who feel that they have already met practice efficiency with paper-based practices. In order for them to make the switch to EHRs, a program geared toward dermatologists is essential.

Evolution of EHRs in Dermatology

Most dermatologists, who were using EHRs in 2004, were unimpressed by their utility with regard to the average dermatology practice. In 2009, with the American Academy of Dermatology taking the lead, we were able to prevail on the only certification body for EHRs at the time, the Certification Commission for Health Information Technology (CCHIT), to develop certification criteria more in line with the needs of the dermatologist.⁷ For 2 years, one of the authors (MDK) served as Co-Chair of the Dermatology Work Group of CCHIT. After much hard work, they developed a whole list of

*Department of Dermatology, Mount Sinai School of Medicine, New York, NY.

†Division of Dermatology, Loyola University Medical Center, Maywood, IL.
Conflicts of Interest Disclosures: The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Kaufmann has received stock/stock options from Modernizing Medicine as a member of their Medical Advisory Board. He is also the Chair of the American Academy of Dermatology (AAD) EHR Implementation Task Force for which he receives no compensation. Dr Desai has nothing to disclose.

Correspondence Author: Shraddha Desai, MD, Division of Dermatology, Loyola University Medical Center, 2160 South First Avenue, Building 54, Room 100, Maywood, IL 60153. E-mail: shradds5@gmail.com.

criteria ranging from the ability to incorporate photos, to being able to draw on a body diagram. Although the work group was satisfied with the finished product, it only had a minimal impact on EHR vendors. There are several reasons for this. CCHIT chose to have this certification available to vendors only as an “add-on” certification. This meant that to qualify for this specialty certification, the vendor would have already passed a more rigorous, and less dermatology-specific, ambulatory care certification. In addition, when President Barack Obama took office in 2009, the Office of the National Coordinator of Health Information Technology decided that they were not satisfied with CCHIT being the only recognized certifying body for EHRs, and proceeded to name 5 other entities that would also serve as certifying bodies. The ARRA also helped to define the certification requirements for EHRs, and the requirements set by Congress were at a lower bar than had been set by CCHIT, thereby making ARRA certification easier to obtain than CCHIT certification.³ Only 3 vendors (NextGen, VeraSuite, and NexTech) have achieved dermatology certification from CCHIT, and we do not expect that number to change in the current environment.⁸

Specific Needs of Dermatologists

The goal of switching from paper records to electronic records has always been to lead to better patient care through more efficient record keeping with fewer errors. Many dermatologists have stated that “My practice is already more efficient than it could ever be with electronic records.” Although we often wonder this ourselves, we have reached the conclusion that even though at first the learning curve will inevitably decrease office efficiency and productivity, in the long run, the advantages of a complete EHR system outweigh the disadvantages. In addition to the basic templates and functions of a standard program, dermatologists require several key components. The essential challenge here is to choose the right EHR.

Presently, we are seeing more EHR vendors who have dermatologists as chief managing officers and as owners. Regardless of our enthusiasm for dermatologist-owned companies, this is always tempered by the reality of how viable the company will be in the long term, especially because dermatology is such a small piece of the national EHR market. Even so, these particular vendors may still be helpful because they have a better understanding of the unique characteristics of dermatology practices that influence office workflow. First, this field is visual centric and much of our documentation requires specific anatomical sites, especially when identifying an abnormal lesion or biopsy site. Most non-EHR dermatologists use examination forms with anatomic drawing templates that are annotated by the physician. This makes it easier to quickly locate the site of interest. The diagram should include full anterior and posterior views along with a close-up of the face (anterior and lateral views), hands (dorsal and palmar), feet (dorsal and plantar), and ear. The latter is extremely helpful, as many skin cancers develop in this loca-

tion, and often patients may have more than one in the same vicinity. Consequently, an effective EHR must include similar templates instead of typed lengthy descriptions of anatomic locations. Detailed typing alone takes time and may be difficult to interpret without a visual aid, which in turn decreases efficiency.

Physicians collect and evaluate laboratory and radiographic data that are routinely included in the EHR. However, dermatologists more commonly review biopsy results. Depending on the type of practice or whether the dermatologist is trained in both dermatology and dermatopathology, the EHR system must be set up so that information can be easily and accurately accessed. If the dermatologist and dermatopathologist are one and the same, or if the dermatopathologist is affiliated with the same hospital and uses the same EHR, accessing this information is quite simple. However, many private dermatologists outsource their biopsy results to stand-alone companies for reading. In this case, groups such as DermPath Diagnostics or Dermatopathology Laboratory of Central States are used.⁹⁻¹⁰ EHR systems that provide these results electronically to practices are of great benefit.

Additionally, dermatology is not only a medical field, but also a surgical one. General dermatologists may refer patients to Mohs surgeons or other specialists for treatment of skin cancers and other conditions. Regardless of diagnosis, or whether a surgery is required, clinical photos are of the utmost importance. They can correctly identify a site to be treated, be used to compare progress before and after treatment, and in consultation for a difficult case. Dermatoscopic images are also critical.¹¹ The specific features of a lesion under the dermatoscope can help reinforce a clinical diagnosis. As a result, an EHR system is needed that allows physicians to upload, deidentify, annotate, and attach these images to a patient’s record. This should be accessible by any dermatologist at the institution. Additionally, if specialists are not in the same network as the referring dermatologist, an EHR that can print or securely e-mail the images and annotated anatomic templates would be extremely helpful in correctly identifying sites of interest and aid in diagnosis.

Furthermore, instead of traditional vitals, Mohs surgeons specifically collect distinct data, such as skin cancer type, location, size, pathology reports, date of biopsy, number of layers, closure type, and so forth. They also hand draw Mohs maps during tissue processing to identify areas of residual tumor. A system that collects these data and incorporates them into the patient’s medical record would be integral to practice efficiency. We are now seeing the rise of *EHR extender products*, which process information in a parallel system (not an EHR), but are able to place the data into the EHR record.¹² Currently, there is a system called MARS (Mohs Automated Reporting System) that allows for such documentation and the recording of excisions and biopsies.¹³ It has been successfully incorporated into a private physician’s practice. Other procedure-specific and decision-support softwares are also available.¹² This enhances the overall EHR data without having to add an expensive global feature to the EHR.

Moreover, dermatology is a high-volume, rapidly-paced, outpatient specialty. Patients are often checked in by nurses and medical assistants, and although the examinations are performed by physicians, at times, ancillary staff and residents are used to scribe the notes. This means that individuals with varying levels of education will be working with the same EHR. As a result, an effective EHR must be easy to use by all staff members and effortlessly annotated by the dermatologist.

Finally, with new tablet technology, the Apple iPad (Apple, Cupertino, CA) and Samsung Galaxy (Samsung Electronics USA, Ridgefield Park, NJ) (among others) can be integrated into the office. EHRs can be downloaded directly onto the tablets, which can be easily transported to and from patient rooms. Consents can be signed for procedures and photos directly onto the tablets, thus allowing for more face-to-face interaction with the patient. This is essential to physicians who feel that the art of patient care is lost with EHRs. Many believe that their focus is divided between proper data entry into the EHR and their patient. With the tablet, physicians will limit the amount of time with their backs turned to the patient and more time engaging them instead. Moreover, the new-generation iPad 3 (Apple, Cupertino, CA) has a 5-megapixel camera that can take photos and upload them to the EHR directly, all without the use of cables and wires.¹⁴ This technology will likely continue to advance in the years to come.

Future Trends

With current government incentives and looming disincentives, now is an ideal time to make the switch from paper-based practices to EHRs. Some retirement-age physicians may be understandably leery of incorporating EHRs into their practice, but with increased technology and the potential for government penalties, there is no better time to convert. EHRs that encompass the specific needs of dermatolo-

gists are especially necessary. Although initial adoption may be slow, practices will more than likely increase their efficiency in the long run. It is our hope that increased innovation will make this inevitable process worthwhile and efficient.

References

1. Grosshandler JA, Tulbert B, Kaufmann MD, et al: The electronic medical record in dermatology. *Arch Dermatol* 146:1031-1036, 2010
2. Buntin NB, Jain SH, Blumenthal D: Health information technology: Laying the infrastructure for national health reform. *Health Aff (Millwood)* 29:1214-1219, 2010
3. Chiang MF, Boland MV, Brewer A, et al: Special requirements for electronic health record systems in ophthalmology. *Ophthalmology* 118:1681-1687, 2011
4. Committee of Data Standards for Patient Safety, Board on Health Care Services, Institute of Medicine: Key Capabilities of an Electronic Health Record System. Washington DC, National Academies Press, 2003, pp 1-19
5. Blumenthal D, Tavenner M: The "meaningful use" regulation for electronic health records. *N Engl J Med* 363:501-504, 2010
6. Office of the National Coordinator for Health Information Technology. Department of Health and Human Services. Health information technology: Initial set of standard, implementation specifications, and certification criteria for electronic health record technology. Final rule. *Fed Regist*, 2010 28:44589-44654.
7. Certification Commission for Health Information Technology: CCHIT Test Script. For IFR Stage 1 Certification and Dermatology EHRs. For Public Comment, 2010, pp 1-16
8. Certification Commission for Health Information Technology. Available at: <https://www.cchit.org/find-cchit>. Accessed May 17, 2012
9. DermPath Diagnostics. Available at: <http://www.dermopathdiagnostics.com>. Accessed June 1, 2012
10. Dermatopathology Laboratory of Central States. <http://dermpathlab.com>. Accessed June 1, 2012
11. Kaliyadan F, Venkitakrishnan S, Manoj J, et al: Electronic medical records in dermatology: Practical implications. *Indian J Dermatol Venereol Leprol* 75:157-161, 2009
12. Change Doctor. Available at: <http://drlyle.blogspot.com/2012/06/emr-race-is-over-long-live-emr-extender.html>. Accessed June 17, 2012
13. Mohs Automated Reporting System. Available at: <http://mohssoftware.com/index.aspx>. Accessed May 29, 2012
14. Apple Inc. Available at: <http://www.apple.com/ipad/>. Accessed May 31, 2012