Integrating Medical and Dental Records: A New Frontier in Health Information Management

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Integrating records of systemic and oral health would improve patient care. It would also open up a new frontier in health information management.

> *A fully integrated patient record and care model for both systemic health (medical) and oral health (dental) is needed for health information technology (HIT) standards, implementation and interoperability to avoid discrepancies between records and to support quality of care, safety, and cost reduction initiatives.*
>
> -Project on Clinical Data Integration Articulating
> Dental and Medical Care and Data for Patients, 2009[1]

As healthcare evolves from a paper to an electronic environment, there is growing recognition of the importance of integrating electronic dental and health record technologies. Although supporting research on the practical and clinical impact of this integration is lacking, there is a movement by EHR vendors toward development of products that will support the seamless integration of these records.

Before this integration can occur, however, health information managers are greatly needed to help develop a universally accepted standardized diagnosis coding and billing system, map codes sets, and help develop privacy and security protocols.

This article examines the importance of integrating medical and dental records in terms of improving patient continuity of care. In addition, it explores implications of this integration for the health information profession in terms of opening up new job markets and employment opportunities, creating new research opportunities, and increasing the HIM professional's role and visibility as a thought leader influencing healthcare policy and legislation.

A Strong Link between Oral and Overall Health

Research has shown that more than 120 systemic diseases originate in the oral cavity. Oral disease has been associated with nutritional compromise, cancer, xerostomia (dry mouth), pneumonia, bacteremia, emphysema, brain abscess, heart problems, diabetes, surgery complications, and mortality. Gum disease has been linked to premature birth, and infected dental tissues may cause periodontal disease that may in turn affect the neck, eyes, and brain. Oral disease increases risk factors for chronic diseases such as cardiovascular and cerebrovascular diseases, diabetes mellitus, and respiratory diseases.[2–10]

Oral disease is further associated with other types of disease likely to show up in teeth first, such as Sjogren's syndrome, certain cancers, eating disorders, bone loss, syphilis, gonorrhea, and substance abuse.[2–10] Oral swabbing can serve as an early indicator for the detection of systemic diseases such as diabetes and cancer.[10]

For these reasons, dental information is valuable to overall patient care. This is especially true in medical specialty areas such as those that treat diabetes or cardiovascular disease, where access to a patient's dental information could assist early detection of these types of chronic conditions.

Awareness Building on the Need for Integration

Despite these advantages, electronic health record data are not systematically integrated with electronic dental record data in most healthcare systems. Medical and dental care information systems have progressed independently of one another with little if any attempt to integrate the two systems of care.[1,11,12]

In recent years EHR vendors have begun to integrate EHR technologies for dental and medical electronic records. In one example, a vendor currently provides integrated EHR and practice management systems and dental record software to more than 250 community health center clients in 39 states and the US Virgin Islands.

Awareness has been building in the provider and academic community as well. In December 2008 a project based at Robert Morris University held a "healthcare-focused community discussion" addressed to the Obama-Biden transition team that advocated for the integration of medical and dental records. Participants noted that the lack of integration often leads to:

- Poor communication among medical and dental providers
- Duplication and inconsistency between the medical record and dental record
- Lack of adherence to best practice guidelines that indicate a dental component
- Structural barriers that make it hard to coordinate medical and dental communication and care[1]

Participants also noted the benefits of integrating records:

- Transparency of real-time health information across medical and dental providers
- Improved patient safety
- Improved clinical decision making
- Improved patient outcomes through prevention, early detection, and proper intervention
- Accurate, thorough, and legible documentation
- Reduced medical and dental errors
- Creation of a single consolidated health record
- Reduced costs to both providers and systems

Possible Roles for HIM Professionals

The need for health IT and HIM professionals across all healthcare practice is rising dramatically. A focused effort to promote and integrate health IT in dental practices will increase that demand and offer new areas where HIM professionals can apply a range of expertise.

An analysis by Hersh and Wright estimates that an additional 40,000 healthcare IT staff and professionals are needed for broad adoption of health IT.[13] The demand is expected to grow 27 percent through 2014. It is estimated that approximately 6,000 new HIM workers are needed each year to fill new positions and replace those who retire or leave the field. This number is expected to grow to 10,000 annually. Currently, there are an estimated 2,200 new graduates in HIM or health informatics programs.[13–15]

Much of the need for health IT expertise is expected in physician offices, where an estimated 36 percent of practices currently have some type of electronic record.[15] The rate varies by size and number of physicians. Approximately 29 percent of solo physician offices have EHRs; among larger practices of 11 to 25 physicians, the share rises to 65 percent.[16]

The federal "meaningful use" EHR incentive program intends to boost those numbers through millions of dollars in federal incentive payments. Much of the discussion to date has focused on physician practices and hospitals, but it is notable that the incentive program was made available to doctors of dental surgery and dental medicine.

Surprisingly, there are no systematic studies at a national level that measure adoption of EHRs by dentists; however, it is believed that adoption rates are low. With many of the nation's 150,000 dentists still to implement EHRs, a concerted effort to implement and integrate health IT in dental practices would open a major new market for HIM professionals that centers on the use of electronic dental records and the integration of those records with electronic medical records.

Little if any work has been done on how to integrate medical and dental health information. However, the federal push for health IT suggests this integration is inevitable in time.

For HIM professionals, the integration will provide an opportunity to participate in the early stages of creating standards for dental records, protocols for implementation and integration, and policies and legislation related to privacy and security. Within these roles, HIM professionals can offer expertise in:

- Evaluating workflow in the IT adoption phase and exchange of provider information and record review and data capture
- Evaluating data models to support objectives
- Developing academic health IT courses and training for dental students and other dental professionals
- Evaluating extensibility of EHR systems to support an oral health record
- Assessing implementation and training efforts
- Formulating budgets and return on investment
- Developing universally accepted coding systems and standards

Key Research Questions

As a result of the lack of integration between dental and medical records in practice, there is a paucity of research examining either the practical or clinical effects or impact of integrating medical and dental records on patient care. Existing research seems to be focused on the use of probabilistic modeling to link e-dental records and e-medical records data.[17] While this research is important, it does not address issues related to quality of patient care.

Although government panels and academicians are in general agreement that the separation of dental and medical records leads to "incomplete, inaccurate, inefficient and inadequate treatment of both medical and dental disease,"[1] no systematic research adequately supports this position.

As the profession most directly concerned with the management of health information and the exchange of health data between providers, the HIM professional is central in designing research examining the integration of dental and medical records. The research initiatives and design must begin by addressing the development of a universally accepted coding system, standards and protocols necessary to the seamless and interoperable exchange of dental information to other dentists and the medical record.

An initial and fundamental need is to establish the standards for dental EHRs. For example, research could establish what current certification standards can be directly adopted for dental EHR products.

The HIM professional is important in addressing questions related to the seamless implementation and adoption of e-dental records and the exchange of information between dental and medical care providers. Research here would begin by addressing the following questions:

- What workflow redesign must occur to enhance the effectiveness and efficiencies of EHR adoption in both medical and dental offices?
- What are the major barriers to integration of medical and dental records and how can they be addressed?
- What is the cost of interfacing medical and dental e-health records?

Finally, research questions from the HIM perspective would deal with issues of quality care and patient safety. Research would ask how the integration of dental and medical EHRs improve patient care and reduce costs and utilization in:

- Patient safety
- Chronic disease management
- Integration with personal health records
- Duplication of services (diagnostic and treatment)
- Reduction of ER visits and unscheduled doctor office visits

Policy Implications for HIM

The integration of medical and dental EHRs also opens opportunities for HIM involvement in legislative and policy decision making. Areas where HIM professionals may contribute expertise and knowledge include defining:

- Interoperability standards, taxonomies, and language for dental health records similar to those for medical records
- Policies and security protocols for e-dental records and the interface between medical and dental health records
- Privacy and security policies for dental records and the exchange of dental information between providers
- Policies and funding for the detection of fraud and abuse

Within the dental industry there is a significant lack of standards for patient information, an HIM core competency. Currently, there are no universally accepted diagnosis coding sets. The Current Dental Terminology (CDT), which is not universally used, is essentially a controlled vocabulary for dental treatment procedures.

Additionally, health information professionals may play a central role in developing meaningful use measures compatible with the established definitions for medical practice. They also can contribute expertise in defining and understanding the necessary certification criteria for use of electronic health records. Health information professionals could play a pivotal role in the development of certification criteria and processes for dental EHR products.

Riding the Wave

In the quality improvement literature there is a scenario where a large tsunami wave is crashing into the shore. The individuals on the shore are given three options:

- Give up and be engulfed by the wave
- Try to run away from the wave
- Hop on and ride the wave and enjoy the experience

Health IT is one such wave, and the expansion of health IT into the dental field offers HIM professionals who want to ride it an opportunity to grow intellectually, expand the current job market, and increase the demand and visibility of the profession. Hopping on this wave as it is building will affirm the HIM role as the guardian of health information and as an expert in information exchange and privacy and security.

Notes

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