The Problem List beyond Meaningful Use: Part 2: Fixing the Problem List

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By Casey Holmes

Yesterday's problem lists aren't suited for tomorrow's electronic systems. Standardizing the content and use of problem lists will help leverage new tools, and new tools can help improve problem list accuracy.

The problem list, that cheat sheet to patient health, originated with Lawrence Weed's problem-oriented medical record in the late 1960s and has since become a standard component of patient medical records. Part 1 of this article (February 2011) reviewed the benefits of problem lists as well as areas of controversy over what should and should not be included on them.

The controversies described in part 1, such as whether to include sensitive problems or undiagnosed long-term symptoms, are certainly nothing new to medicine. In general, the variation in the problem list across practitioners is a readily accepted part of practicing medicine. However, the emergence of electronic health record systems, being accelerated by federal incentives that encourage their adoption, makes this the ideal time to forge consensus on problem list content.

Leveraging an accurate, up-to-date, and consistent problem list within the EHR will allow organizations to identify their diseased patient populations with increased accuracy, which has major implications for the success of decision support and population management tools.

Yet, achieving consistency cannot occur via policy alone. With the benefits of computers, new opportunities exist in applications and online portals to help the healthcare community create consistent and accurate problem lists across their entire patient base.

Why Standardize?

The acceptance of variations in the problem list is a legacy of the paper medical record system. Healthcare organizations that use paper records have almost no incentive to standardize the problem list because it would require significant amounts of resources to review and modify records by hand, a vast amount of work for the perceived benefit.

However, EHRs present new means to solve these long-running issues in a practical, cost-effective manner. Up to now the problem list appears to be largely overlooked in the medical record's digital transition. It is largely used no differently in digital form than it has been on paper.

The federal EHR incentive effort recognizes the importance of problem lists to patient care. Professionals and hospitals participating in the meaningful use program must code problem lists as part of meeting stage 1 requirements. Specifically, they must maintain up-to-date problem lists of current and active diagnoses based on ICD-9-CM or SNOMED CT, clinical coding standards designed to classify diseases, symptoms, and other relevant factors about a patient. At least 80 percent of all unique patients must have at least one entry or an indication of none recorded as structured data.

While pushing problem lists to a common dictionary will be a useful step toward developing uniform problem lists, the variation in content and utilization is still a hindrance to fully realizing their potential in the digital health age. At a foundational level, practitioners will need uniform problem lists to provide consistent care across patients. Further, the market driver behind any standardization initiative will be the need for problem lists to provide clinical decision support and population management tools with a precise method for identifying diseased patient populations.

The Inadequacies of Proxy Methods

Currently healthcare organizations are using proxy methods such as medication lists and billing codes to identify their diseased patient populations. Both of these methods, however, come with a high amount of false positives and negatives. For instance, the use of medication lists to identify target populations is highly inaccurate because a diseased patient may not be taking medications or may be receiving treatment elsewhere. The medications thus may not be listed in the EHR.

A nondiseased patient also may be assigned a particular medication for a very different problem. For instance, if a healthcare organization attempts to identify all their asthmatic patients by looking at who was prescribed an inhaler, they are likely including a group of patients who had persistent coughs, not asthma.

Another common proxy method is the use of diagnoses from billing codes. This method also contains great uncertainty, as billing codes often do not precisely reflect clinical information as it is most relevant to providers. In addition, a single misdiagnosis on one visit could throw off all further reporting. This situation can be a particular problem if providers miscode a diagnosis they are considering that then gets ruled out by later diagnostic studies. A query for a diseased patient population based on that initial billing code would then treat this patient as diseased.

Dave deBronkart, or "E-Patient Dave," a blogger on the participatory medicine movement, exemplified the reality of trying to use billing data as clinical information when he attempted to move his health files from a hospital onto Google Health in early 2009. The result was a smattering of erroneous information because the hospital was transferring billing data, not clinical data.[1] With these issues, using billing data to identify a diseased population of patients will come with a high amount of error.

If EHRs continue to rely upon these proxy methods, they will hinder the acceptance of decision support and population management tools. For example, if a healthcare center installs a simple decision support tool to remind its practitioners to give asthmatic patients a flu shot, using one of these proxy methods will miss a certain segment of the at-risk population. Further, that decision support tool will create pop-ups on irrelevant cases, annoying the doctors and making them less likely to pay attention to future reminders.

For decision support tools to be most effective, they must be extremely accurate-providing the right advice in the right scenario at the right time. As problems represent a true declaration of a patient's health, the problem list presents the best opportunity within a patient record from which to gain the most precise information for decision support and population management tools. Yet, the problem list cannot be helpful until the current variation in content and use is addressed.

Addressing the Inaccuracies

Even if a healthcare organization creates policies around the content of problem lists, achieving uniformity ultimately will require changing provider behavior. It would be difficult for practitioners to comply completely with any standardizing policies, because they are not easy or intuitive requests.

In general, practitioners find that entering standardized data rather than free text typically takes more effort (e.g., more clicks) and often does not express the data in a way that best matches their thought processes. With the problem list, policies to standardize will likely meet the same issues. Practitioners have developed their own problem list styles, and any policy inherently cannot meet the preference of all practitioners at all times. Therefore, even with good intentions, practitioners' personal preferences would quickly win over organizational standards in day-to-day practice.

Further, natural human error keeps problem lists from achieving full accuracy. The most common error today is simply forgetting to add conditions as they are diagnosed. Other less frequent errors include using incorrect terms to describe a problem or placing a condition on a patient's problem list that never occurred.

Fortunately, the EHR provides new solutions for these very old problems. To achieve uniformity, the healthcare industry must create systems and tools that encourage consistency and completeness in the problem list as well as policies to address disagreements in utilization.

Clarifying Responsibilities

In a shared medical record system, the issue of who is responsible for maintaining problem lists can be contentious. Many primary care providers (PCPs) believe that both specialists and PCPs should add problems to the list. Conversely, many specialists have suggested that the problem list is solely the PCP's responsibility and feel it would be intrusive to add their own problems.

In this controversy, AHIMA recommends that accountability for maintaining accurate problem lists be assigned to the PCP. However, if a medical record is shared, mechanisms allowing specialists to provide recommendations for problem list additions would be preferred.[2] While this is happening through informal communication between PCPs and specialists, the process is not a medical standard and the multiple steps to actually placing a problem on the problem list perpetuates inaccuracies.

To reduce the potential for error, organizations should implement policies clearly delineating the responsibilities of both PCPs and specialists. They also need to create methods through which clear communication can occur. In the case of recommendations from a specialist to a PCP, an EHR application that supports such a process (e.g., a prompt within the specialist's encounter note to supply a suggestion to the PCP) would streamline this process, ease the responsibility question, and increase accuracy.

Promoting All Problems

Even practitioners who pay excellent attention to the problem list are prone to mistakes, such as forgetting to add a problem. The persistence of human error is another area where the digital problem list can surpass its paper counterpart. Decision support tools that increase the completeness of problem lists can help avoid simple mistakes.

One such tool under development at Brigham and Women's Hospital is the Maintaining Accurate Problem Lists Electronically project. MAPLE is an EHR application that alerts physicians to potential problem list gaps during the documentation process based on the diagnoses, vitals, medications, and tests entered in the encounter note. MAPLE is currently under a nonblinded cluster randomized clinical trial.[3]

Stéphane Meystre and Peter Haug at the University of Utah also worked to address the inconsistencies in problem lists by studying the use of natural language processing (NLP) to draw out potential medical problems from free-text medical documents within an EHR. Their study, published in 2006, reported achieving high, but not perfect, rates of recall and precision for identifying a set of 80 medical problems.[4] Further development of tools like MAPLE and NLP likely will be the key to reducing human errors in problem lists.

Of course, not all providers will welcome computer involvement in clinical documentation. As with the debate over documentation templates for patient encounters, some practitioners argue strongly against the computer guiding the practitioner in the decision-making process. This is an important debate that requires more testing and experience to properly weigh the costs and benefits.

A more immediate and addressable concern when considering these tools is that such applications can be the impetus for tremendous clinical documentation errors.

On paper, documentation errors remain isolated to that particular patient encounter. With EHRs a glitch in a program, misinterpretation of information, or disregard of instructions can lead to rampant error in medical documentation that if continued unchecked could pose a risk to patient care. Thus any EHR system that suggests diagnoses to providers for the problem list must be monitored for accuracy.

Patient Review

The next defense against inaccuracies in the problem list is regular review. PCPs typically review problem lists during physicals. Yet, the high portion of the population without a dedicated PCP combined with many people not receiving annual physicals makes this review process unreliable for creating up-to-date problem lists across the entire patient population. Patient review of problem lists can help increase accuracy. But allowing patients to review their own problem lists is controversial among providers.

In particular, some providers are concerned that patients may not understand the medical jargon and react badly to diagnoses they perceive as insulting, such as obesity or alcohol abuse. This situation could strain the patient-doctor relationship.

Yet, while these concerns are valid, the emergence of online patient portals significantly eases the process of a patient reviewing a problem list for errors. For instance, portals allow patients to review their information in their home, not the doctor's office; patients will have more time to look up disease definitions and other information.

Further, portals can be designed for the patient. Portals can be programmed to show definitions when the patient scrolls over or clicks on a problem, or they can include language translation tools to aid non-native speakers.

Problem lists have been accessible to patients online at medical centers such as Beth Israel Deaconess Medical Center for some time without serious issue in regards to patient-practitioner relations. While some practitioners remain concerned that a shareable problem list will lead to controversy that adds to their already stretched appointment times, that same controversy can serve as the impetus for productive conversations between practitioners and patients about the patient's condition.

Right now, Tom Delbanco, MD, at Beth Israel Deaconess Medical Center is conducting Open Notes, the largest study ever undertaken on the effects of patients viewing their full medical records via online portals.[5] The results will be very informative about the adoption of patient-viewed portals and consequently the online review of the problem list.

A Perfect Tool for the EHR

The healthcare industry is undergoing a digital revolution. The result will likely be vast changes in how people interact with medical records.

The continuity in care movement, for example, is pushing practitioners to use the EHR as the main medium for communication with other providers. Administrators are relying on medical records to measure the success of quality improvement projects in real time. Patients are now getting a chance to view their medical records online, gaining a new understanding of their diagnosed health. Finally, patients may have a complete medical record across all practitioners through the possibility of health information exchange.

With all these changes, the medical record is under stress to serve the increasing demands of numerous stakeholders. A record that was formerly a PCP's personal notes is now of interest to specialists, administrators, researchers, government officials, payers, patients, and the hospital next door. Further, every stakeholder brings to the table a new set of demands for information. As a consequence, tolerance for inaccurate, inconsistent, or ambiguous parts of the medical record is rapidly decreasing and the need for standardization across the medical record is knocking at the door. The problem list exemplifies this trend.

Lawrence Weed was truly a visionary who created a perfect tool for the EHR. Yet, the variations in today's problem list make it unusable as a resource to further improve patient care. In order to reap the benefits of upcoming decision support and population management tools, as well as meet the larger trends in medicine, healthcare centers need to address the issues in content and utilization as well as develop the policies and tools to standardize the problem list.

Part 1 of this article, "The Problem List beyond Meaningful Use: The Problems with Problem Lists," appeared in the February issue.

Notes

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