The Choosing Wisely® Initiative: An Evolution in “Reactive” Clinical Decision Support

The 1999 Institute of Medicine publication, “To Err Is Human,” represented a milestone in U.S. healthcare reform, bringing concerns over healthcare quality directly to the American people. Driven by extensive lay media coverage, the public was horrified to learn that as many as 98,000 hospitalized patients died annually as a result of preventable medical errors and that these avoidable mistakes were a leading cause of death. More recently, “the other shoe dropped” with the publication and media coverage of a study of preventable diagnostic errors in the ambulatory healthcare setting. This 2014 report conservatively estimated that annually, 1 in 20 American adult outpatients (5%) were victims of an error, delay, or misdiagnosis at the hands of their ambulatory physician. Given that 80.5% of Americans visit their doctor, at least 12 million people are not correctly diagnosed in a timely fashion each year. The authors projected that one half of these errors (6 million people) are potentially serious (delaying treatment of significantly threatening conditions). Together, these two landmark studies implicated physicians and other clinical providers in failing to avoid preventable inpatient and ambulatory morbidity and mortality for millions of patients.

Research suggests that this delivery of suboptimal care is not the result of physicians failing to order enough tests, procedures, and services; rather, physicians too frequently are ordering the wrong tests, procedures, and services. More than 80% of healthcare costs result from events triggered by care decisions made by physicians, so if physicians are routinely ordering processes which provide little or no clinical value to their patients, the associated financial waste is likely significant. A 2014 study of Medicare claims estimated that $1.9B was spent ordering from among only 26 tests and procedures which evidence had previously demonstrated were of little clinical value in certain clinical settings. This very limited pool of “low value services” (again, only 26) suggests that the actual cost of all tests, procedures, and services which provide little or no value to patients most certainly is magnitudes greater. But more than massive financial waste results from low and no-value physician orders. The resulting delays in correct diagnosis and/or appropriate therapy likely negatively impacts clinical outcomes for a subset of patients (as well as results in additional cost due to delayed diagnosis and/or treatment). Put succinctly and in lay terms, physicians and other clinical providers frequently order tests, procedures, and services that are of little or no clinical benefit to their patients, which delay accurate diagnosis and necessary treatment, and waste enormous amounts of money.

The current suboptimal care delivery environment offers an enormous opportunity for “Clinical Decision Support.” The concept of Clinical Decision Support (CDS) is simple: the active provision of clinical guidance to physicians to drive higher quality, more cost efficient healthcare delivery. CDS may further be categorized as “proactive” and “reactive.” Proactive CDS helps guide physicians in “what to do” when caring for a specific patient in a specific clinical situation. For example, proactive CDS would indicate that the physician should consider a colonoscopy in addressing a stable patient diagnosed with a partial large bowel obstruction. Reactive CDS helps guide physicians in “what not to do” when caring for a specific patient in a specific clinical situation. In our example, reactive CDS would indicate that the physician should not order an upper gastrointestinal tract contrast imaging...
study on the stable patient diagnosed with a partial large bowel obstruction, as this diagnostic procedure is of low or no value in this specific patient scenario.

Much of medical education (medical school, internship, residency, and fellowship) is focused on proactive CDS; that is, teaching students “what to do” in patient-specific situations. Much less often are students taught “what not to do,” other than the avoidance of a test or procedure that places the patient at clear and significant risk. Thus, today’s physicians are much more focused on including appropriate tests and procedures in their diagnostic work-up and treatment plans than they are on ordering additional low or no-value tests and procedures. For example, a physician is more concerned that a magnetic resonance imaging study (MRI) of the brain is included in the diagnostic work-up of a patient with the acute onset of a severe headache than he/she is worried about also ordering an electroencephalogram (EEG), which is of little or no value in this clinical setting.

In its most generic form, reactive CDS is already very familiar to physicians, as their electronic medical records routinely bombard them with medication order “alerts.” Physicians have become openly hostile to such generic (not patient-specific) reactive CDS, which is viewed not only as of little true clinical value, but as annoying (as the computerized ordering of virtually any medication triggers a list of potential side-effects and drug-drug interactions, rapidly leading to physician “alert fatigue”).

But reactive CDS has evolved. Today we have the ability to provide significantly more sophisticated, patient-specific, relevant reactive CDS which guides physicians in a clinically meaningful way, reducing low and no-value tests and procedures which results in reduced financial waste and, potentially, improves the timely delivery of appropriate clinical care. Reactive CDS based on the American Board of Internal Medicine’s Choosing Wisely® initiative, which includes more than 300 evidence based guidelines from more than 60 professional medical societies, is much more specific to patient scenarios and far broader in reach than pharmaceutical “don’t do” alerts. For example, Choosing Wisely®-based reactive CDS reminds the physician that carotid artery imaging is a low or no-value test for patients presenting with syncope in the absence of additional neurologic symptoms. Experienced physicians recognize this as one of dozens (if not hundreds) of common ordering decision errors arising in today’s emergency departments and outpatient offices. In this example, not only is the ordering of the low or no-value radiology study costly, it may delay appropriate diagnostic procedures (cardiac syncope evaluation). In another example, Choosing Wisely®-based reactive CDS reminds physicians to avoid blood transfusions in hemodynamically stable patients with hemoglobin levels greater than 7mg/dL. Inappropriate blood transfusions are a significant problem in U.S. healthcare despite decades of repeated clinical evidence supporting this Choosing Wisely® recommendation. Not only do inappropriate transfusions waste significant amounts of money, they deplete this critical and limited resource, and unnecessary transfusions expose patients to meaningful clinical risk (transfusion reactions, infection, and cancer recurrence resulting from transfusion-associated immunosuppression).

Today’s reactive CDS solutions are further empowered by and available additional functionality: analytics. By collecting and stratifying reactive CDS alerts data; users, administrators, and strategists are all able to gain a deep appreciation of opportunities for improvement within their own healthcare delivery systems. Whether looking at a health network, specific group of providers, or an individual clinician, analytics provide a clear understanding not only of the frequency of specific reactive CDS messages, but also of the clinical decisions made in response to those alerts. Such an understanding drives quality improvement and cost efficiency. For example, high incidence alerts may support the development of group, hospital, and/or
network clinical care guidelines aimed at educating providers and resulting in reduced waste and care delays. The impact of introducing such uniform care improvement plans can be measured and followed through ongoing alert analytics. The impact of analytics on the understanding of care improvement opportunities, as well as the utility of analytics in measuring and monitoring the impact of care improvement plan delivery, is an enormous addition to today’s new reactive CDS solutions.

It is critical that we overcome physicians’ understandable initial hesitancy to this new advanced reactive CDS capability, a hesitancy based upon their current experience with generic, pharmaceutical-focused, alert fatigue-inducing reactive CDS. Today’s Choosing Wisely®-based reactive CDS, especially when combined with now-available actionable analytics, represents an evolutionary step in CDS, empowering physicians in the improvement of both the quality and cost efficiency of their clinical care delivery.


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