

What's New in the Patient Safety World

September 2018

More Clinical Decision Support Successes

It seems we've done all too many columns on the unintended consequences of healthcare IT. So we're happy to highlight this month some success stories for clinical decision support systems (CDS).

Cedars-Sinai Medical Center integrated select recommendations from the Choosing Wisely campaign as CDS alerts into their EHR. This included many alert-based CDS interventions, both inpatient and ambulatory. Providers, when presented with an alert, had the option to cancel, change, or justify the order. They analyzed the impact of these CDS alerts on inpatient encounters ([Heekin 2018](#)). The researchers found that encounters in which providers adhered to all alerts had significantly lower total costs, shorter lengths of stay, a lower probability of 30-day readmissions, and a lower probability of complications compared with nonadherent encounters. Full adherence to Choosing Wisely alerts was associated with savings of \$944 from a median encounter cost of \$12,940.

Another recent study ([Wachsberg 2018](#)) demonstrated that an educational intervention, combined with real-time clinical decision support (CDS), reduced blood utilization among hospitalized solid tumor cancer patients without adversely affecting outcomes. The odds of receiving a transfusion were cut by almost half in the postintervention cohort. There were no significant differences in readmission, outpatient transfusion within seven days of discharge, or inpatient mortality. Patients in the postintervention cohort also had lower odds of ICU transfer (OR = 0.29).

And another study in a large academic medical center ([Eaton 2018](#)) showed a mixed impact of nonintrusive clinical decision support systems on laboratory test utilization, reminding us to focus on areas where a positive impact is seen and avoid unnecessary alerts that don't change outcomes. The study focused on CDS for red blood cell folate, hepatitis C virus viral loads and genotypes, and (blood) type and screens. Appropriate indications for these labs were incorporated into text that accompanied the laboratory orders in the hospital's EHR. There was a 43% decrease in the rate of hepatitis C virus tests per monthly admissions after the CDS was implemented. But there was no significant change in type and screen orders or folate orders. The authors stress that nonintrusive CDS should be evaluated for individual laboratory tests to ensure only effective alerts continue to be used so as to avoid increasing EHR fatigue.

The last point is very important. Avoiding alert fatigue is critical in any clinical decision support program. We stress to hospitals that they need to have an interdisciplinary group

that works with their IT staff to evaluate the impact of every new CDS rule implemented. That means looking to see what the adherence/override rate is for each alert and whether the alert results in the desired change in ordering.

These three studies, however, clearly show that careful planning, implementation, and evaluation of clinical decision support tools can be beneficial to patient care and can be done in a manner that is nonintrusive.

See some of our other Patient Safety Tip of the Week columns dealing with unintended consequences of technology and other healthcare IT issues:

- June 19, 2007 “[Unintended Consequences of Technological Solutions](#)”
- May 20, 2008 “[CPOE Unintended Consequences – Are Wrong Patient Errors More Common?](#)”
- June 17, 2008 “[Technology Workarounds Defeat Safety Intent](#)”
- August 26, 2008 “[Pattern Recognition and CPOE](#)”
- September 9, 2008 “[Less is More...and Do You Really Need that Decimal?](#)”
- December 16, 2008 “[Joint Commission Sentinel Event Alert on Hazards of Healthcare IT](#)”
- February 2009 “[Healthcare IT The Good and The Bad](#)”
- March 3, 2009 “[Overriding Alerts...Like Surfin’ the Web](#)”
- October 2009 “[A Cautious View on CPOE](#)”
- November 24, 2009 “[Another Rough Month for Healthcare IT](#)”
- April 20, 2010 “[HIT’s Limited Impact on Quality To Date](#)”
- March 22, 2011 “[An EMR Feature Detrimental to Teamwork and Patient Safety](#)”
- January 24, 2012 “[Patient Safety in Ambulatory Care](#)”
- June 26, 2012 “[Using Patient Photos to Reduce CPOE Errors](#)”
- June 2012 “[Leapfrog CPOE Simulation: Improvement But Still Shortfalls](#)”
- July 17, 2012 “[More on Wrong-Patient CPOE](#)”
- January 2013 “[More IT Unintended Consequences](#)”
- April 30, 2013 “[Photographic Identification to Prevent Errors](#)”
- October 8, 2013 “[EMR Problems in the ED](#)”
- March 11, 2014 “[We Miss the Graphic Flowchart!](#)”
- October 2014 “[Ebola Exposes Fundamental Flaw](#)”
- January 2015 “[Beneficial Effect of EMR on Patient Safety](#)”
- March 2015 “[CPOE Fails to Catch Prescribing Errors](#)”
- March 31, 2015 “[Clinical Decision Support for Pneumonia](#)”
- August 2015 “[Newborn Name Confusion](#)”
- December 2015 “[Opioid Alert Fatigue](#)”
- January 12, 2016 “[New Resources on Improving Safety of Healthcare IT](#)”
- January 19, 2016 “[Patient Identification in the Spotlight](#)”
- February 9, 2016 “[It was just a matter of time...](#)”
- April 5, 2016 “[Workarounds Overriding Safety](#)”
- May 2016 “[Name Confusion in the Pharmacy](#)”

- May 3, 2016 “[Clinical Decision Support Malfunction](#)”
- May 24, 2016 “[Texting Orders – Is It Really Safe?](#)”
- August 23, 2016 “[ISMP Canada: Automation Bias and Automation Complacency](#)”
- November 22, 2016 “[Leapfrog, Picklists, and Healthcare IT Vulnerabilities](#)”
- January 2017 “[Joint Commission Thinks Twice About Texting Orders](#)”
- February 28, 2017 “[The Copy and Paste ETTO](#)”
- March 2017 “[Yes! Another Voice for Medication e-Discontinuation!](#)”
- April 2017 “[How Much Time Do We Actually Spend on the EMR?](#)”
- June 27, 2017 “[Texting – We Told You So!](#)”
- August 1, 2017 “[Progress on Wrong Patient Orders](#)”
- January 2018 “[Can We Improve Barcoding?](#)”
- January 16, 2018 “[Just the Fax, Ma’am](#)”
- January 30, 2018 “[Texting Errors Revealed](#)”
- June 19, 2018 “[More EHR-Related Problems](#)”

References:

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<https://www.ajmc.com/journals/issue/2018/2018-vol24-n8/choosing-wisely-clinical-decision-support-adherence-and-associated-inpatient-outcomes>

Wachsberg KN, O’Leary KJ, Buck R, et al. Impact of Real-Time Clinical Decision Support on Blood Utilization and Outcomes in Hospitalized Patients with Solid Tumor Cancer. *The Joint Commission Journal on Quality and Patient Safety* 2018; Published online: August 17, 2018
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