AHRQ National Webinar on Transforming Guidelines Into Action: Clinical Decision Support at the Point of Care

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Patricia C. Dykes, Ph.D., R.N.
Brigham and Women's Hospital
Shareable, Interoperable Clinical Decision Support for Older Adults: Advancing Fall Assessment and Prevention Patient-Centered Outcomes Research Findings into Diverse Primary Care Practices (ASPIRE)

QUESTION: Who is responsible for the continued maintenance and updating of the clinical decision support (CDS) tools and is there a business model to continue to support these projects for the foreseeable future?

ANSWER: We have started working with our innovations office on that, but that is a problem with many of us researchers. We think about how to design the CDS and how to make them fit beautifully into the workflow, but when it comes time for a business plan for the future, we've done less around that. We have started meeting with our innovations office and we are working on that.

QUESTION: In the context of turning guidelines into action, how can guideline developers use your study's findings to improve their guidelines and/or related derivative output to assure implementation actions occur?

ANSWER: Ours is a good example of trying to put guidelines into action. For example, in our STRIDE study, we work directly from the British Geriatric Society and American Geriatric Society fall prevention guidelines. However, these are paper-based guidelines that were not very actionable. We ended up with algorithms that were difficult to implement in the primary care setting and then not much thinking around how we would integrate these into a workflow. We were very deliberate with ASPIRE to start with looking at things like "what are the five major risk factors?" We already had the algorithms on paper, but which ones are actually feasible for clinical decision support? It seems like there should be another step, right? You have these practice guidelines, and the evidence is rated, but maybe we need to also rate the degree to which they are computable.

What we found is that fall-risk increasing drugs (FRIDs), osteoporosis, and activity and mobility to some extent, were actionable given the data that are commonly available in electronic health records (EHRs). Today we do not have enough individualized clinical decision support. We could start with the guidelines that are being used in practice and find which components not only have good evidence behind their effectiveness but can also be implemented because you have the data you need in the EHR.

QUESTION: Is the application open-sourced on GitHub? Is there a link?

ANSWER: ASPIRE fall-prevention CDS artifacts are available through CDS Connect: https://cds.ahrq.gov/cdsconnect/org/brigham-and-womans-hospital.

QUESTION: What interoperability platform was used to integrate this CDS into the EHR? Was it CDS Hooks, Smart on FHIR, or an Epic specific web service?

ANSWER: We developed middleware that used FHIR services.

QUESTION: Can you share the list of electronic health records (EHRs) that are interoperable with the ASPIRE tool?

ANSWER: Epic and Athena Practice.

QUESTION: Is there an alert or flag based on a threshold of risk of falling that would encourage providers to launch ASPIRE? Or is it totally based on the provider's choice to look for the icon to launch?

ANSWER: ASPIRE is available if the patient fails their fall risk screening.

QUESTION: Does ASPIRE have a long-term evaluation plan on the effectiveness of fall prevention?

ANSWER: We are hoping to use it in a clinical trial in 2024 to 2027.

QUESTION: How were the patients selected to participate in the projects?

ANSWER: We use patient and family advisory council (PFAC) patients for early qualitative work. We then interviewed patients who had an appointment during the pilot period; this was not a random sampling.

QUESTION: Are social determinants of health (SDOH), such as social isolation, lack of access to proper food, contributing factors to seniors experiencing falls?

ANSWER: I suspect they are, but they are not routinely captured in the EHR to drive CDS.

QUESTION: Because the fall-prevention program implemented in the rural areas and communities was successfully launched, is there coordination between the community utilizing ASPIRE and the healthcare institution when these identified patients visit the healthcare institutions?

ANSWER: The ASPIRE tool targets primary care. We are looking at refining for addressing care transition from rehab to community. Inpatient risk factors are different, but we should look at linking that to ASPIRE.

QUESTION: Given that time during a primary care visit is at a premium, have there been discussions about engaging or presenting information to relevant patients ahead of time through patient portals? This could better focus discussions during the visit and save time.

ANSWER: Some of our patients complete the fall risk screening in the portal. Great idea to get them started with thinking about what they need to do to prevent a fall and hopefully raise the discussion with their provider in case they do not bring it up!

QUESTION: Does this CDS present as a type of "Alert" (i.e., interrupting workflow until they click some button) or is it accessible by choice of the provider in another area in the EHR?

ANSWER: No alert, the CDS is available from the office encounter screen if the patient fails their fall risk screener.

QUESTION: After the initial encounter using ASPIRE, and after the patient and clinician develop a plan, is a note or documentation generated so other providers could access patient information in the future? Or is the plan captured another way for review?

ANSWER: It is captured and saved as a progress note; it would be ideal to do more here.

Alex C. Spyropoulos, M.D.
The Feinstein Institutes for Medical Research
Implementation of a Novel Multi-Platform Evidence-Based Clinical Decision Support System

QUESTION: Who is responsible for the continued maintenance and updating of the CDS tools and is there a business model to continue to support these projects for the foreseeable future?

ANSWER: I would have to agree that the easy part is creating the CDS and creating it as perfect as you can; the real difficult part is maintaining it over time. We are also working within our innovation's lab group, as well as some of the key informatics components, to see how we can extend the CDS and then expand it to places like the Epic App store. In theory there could be a commercial component to these tools and even if they are available freely, they could be tweaked and implemented in certain ways. I think going from an academic research model to a maintenance and commercialization model is problematic**.**

QUESTION: In the context of turning guidelines into action, how can guideline developers use your study's findings to improve their guidelines and/or related derivative output to assure implementation actions occur?

ANSWER: Keeping in mind that when the results of a clinical trial are published, there is always a time lag by the time they get to the guidelines. What some of us on this panel are taking great effort to do is to actually conduct pragmatic, or in my case a cluster randomized trial, to prove the effectiveness of a CDS tool. Guidelines start getting interested when they see an improvement in patient outcomes using the tool as part of a formalized impact analysis. It is not enough to say that there is increased tool adoption; what is the end result of that adoption? Is there a decrease in lung cancer, or in my field is there a decrease in thrombotic events? The importance of our trial is that we powered it for clinical outcomes, which is why we needed nearly eleven thousand patients.

For us, the upcoming International Union of Angiology guidelines that will be published forthcoming in 2023, the use of CDS technology will be part of these guidelines because of these randomized clinical trials (RCTs) that are being conducted. So, the most important part is conducting the RCT evidence in order to inform the guidelines.

QUESTION: Have you looked at or considered using standards-based integration points between EHR and EvidencePoint Platform (specifically CDS Hooks)?

ANSWER: We use SMART on FHIR.

Kensaku Kawamoto, M.D., Ph.D.
University of Utah
Scalable Decision Support and Shared Decision Making for Lung Cancer Screening

QUESTION: Who is responsible for the continued maintenance and updating of the CDS tools and is there a business model to continue to support these projects for the foreseeable future?

ANSWER: We are fortunate because we are also part of the health system operations. In general, we build everything with the intent to keep it running and to operationally maintain it. This does mean you get a call at 3 AM if something is broken and you have to get up and fix it, but we're fortunate.

If we were a traditional research-only model, it would be a challenge because it does cost money and effort, and research typically does not have this notion of how you sustain it. The most important thing is during the research project, get it to the point of having sufficient value so that people will be incentivized to spend money to keep maintaining it. Maintenance is going to be needed and the main thing is having somebody who is willing to pay for it. It is a challenge and commercial issues are something to consider. I have typically been an open-source guy, but we are starting to think about commercialization options simply because open-source sounds great, but nobody wants to pay for it because it is free.

QUESTION: In the context of turning guidelines into action, how can guideline developers use your study's findings to improve their guidelines and/or related derivative output to assure implementation actions occur?

ANSWER: It is actually quite relevant for lung cancer screening, in that oftentimes guideline developers are forced to simplify their recommendations so that they can be implemented without too much tool support. In the lung cancer screening example, there are active discussions around "should we get rid of shared decision making as a requirement, because people are finding it too hard?" Rather than saying "hey, should we actually start considering individualized risks of things like colorectal cancer and breast cancer screening?"

It is important to reflect and show that these kinds of approaches can be used to do more nuanced risk-driven approaches to care, rather than saying "if we want people to adopt it, we need to make clinical practice guidelines, and the recommendations are something that humans can reliably do without computer support." That is an important part and something that should be done. It has a lot of policy implications because we hear people say all the time, "the complexity makes it so people can't do it, let's make it simpler," even if a more complicated and nuanced approach might actually be better for population health if we can make that happen.

QUESTION: Was it hard for primary care physicians to adopt and accept the screening alerts for lung cancer?

ANSWER: It was not hard; it was a typical implementation.

QUESTION: Are there any surprise results that your team did not anticipate beforehand?

ANSWER: One surprise was that the effect was higher than expected.