Phase I Implementation — NHLBI Asthma Guidelines at Yale Specialty Clinic — In Progress

The GLIDES project is now into the first phase of implementation—integrating the NHLBI Asthma guidelines into clinical workflows and computer systems at Yale’s Pediatric Asthma Clinic.

The process of implementing clinical guidelines in a clinical setting has been likened to a “black-box”. Narrative guidelines are fed into one end, and “magic” happens to interpret the guidelines and embed them in clinical workflows and information systems. The problem, of course, is that this magic requires experts, skilled in both clinical processes and systems, to accurately interpret the guidelines and oversee their implementation. It can be challenging finding sufficient trained experts to perform this, and even experts have difficulty implementing guidelines consistently across clinical sites.

The GLIDES project is helping to open up this “black-box” and replace it with systematic and repeatable steps to make the implementation process simpler and more reliable.

In the prior phase of the project, we used the Guideline Elements Model (GEM) to assess the guidelines and decompose them into semi-structured information—a clear and unambiguous re-statement of their core logic. During implementation we are translating that semi-structured logic into semi-formal and formal logic that can be implemented in clinical workflows and systems at both Yale and Nemours.

Clinical Guideline Implementation—Opening The Black Box

As expected, implementation is challenging. Although the guideline recommendations have now been clearly structured and readied for implementation, there are many “local factors” that must be considered, including clinical workflows, policies and staff preferences and the functionality of Yale New Haven Hospital’s (YNHH) information systems.

These local factors must be understood and reflected in the further decomposition of guideline logic before they can be effectively implemented at the Pediatric Asthma clinic.

We are working with YNHH clinical and IT staff to document and redesign clinical workflow and EHR system screens. This helps us understand local challenges and design effective solutions to meet them.
GLIDES Team In The “Implementation Zone”

Addressing these local factors is sometimes referred to as working in the “zone of localization”. There are many challenges. One of the first is to understand how existing Asthma decision support is used. A key tool is to perform a “baseline survey” of clinical staff. In doing so, we learned some important information that is shaping our implementation work. For example, existing systems are used very differently by specialty pulmonologists and primary care physicians, reflecting their different backgrounds and perspectives. Does that mean the guidelines should be implemented differently, to meet the needs of each group? Possibly, although that is not addressed directly in the guidelines themselves, and so becomes an important implementation decision.

Another important factor is how to design workflows and screen flows to best ensure adherence to the guidelines. Experience shows that some clinicians resist using systems that are too rigid and don’t allow sufficient room for clinical judgement. One design technique that can be deployed to address this is “critiquing”, in which workflow is designed to enable clinicians to make their own decisions and record them in the system. The system then compares them to the guideline’s recommendations and informs the clinician on any significant discrepancy.

These factors will be considered for all implementation phases, at both YNHH and Nemours. The GLIDES team will assess and document best practices that can be applied in the “zone of localization.”

GLIDES Meets with AHRQ Technical Expert Panel (TEP)

One of the key goals of the AHRQ-funded GLIDES project is to help identify tools and techniques which can make the process of implementing clinical guidelines more systematic and replicable. To help meet this goal, AHRQ has assembled a technical expert panel (TEP) with deep experience in clinical decision support, with whom the project team is meeting regularly to discuss our progress, findings and recommendations.

GLIDES leaders from YCMI, YNHH and Nemours held their first review with the AHRQ TEP on July 11th, at the AHRQ headquarters in Rockville MD. Also participating in the meeting was the Clinical Decision Support Consortium (CDSC), a sister project to GLIDES which has also received funding from AHRQ. The CDSC team is led by Partners HealthCare CIO Blackford Middleton.

At the meeting, both project teams presented their progress to date and the TEP members provided feedback and insight. The GLIDES team’s presentation focused on the success we have had with the Knowledge Transformation process, and the local challenges we are now addressing in the implementation phase. Discussion and feedback received at the meeting was wide-ranging and very helpful to our project.

We expect to meet with the TEP regularly during the lifetime of the project to help sharpen our recommendations and plan their dissemination across the clinical guideline design and implementation community. Members of the TEP, and their institutional affiliations, are listed in the next column.

TEP Members
Charlie Safran (AMIA)
Chuck Friedman (ONCHIT)
Clement McDonald (NLM)
Dave Davis (AAMC)
Doug Owens (Stanford)
Doug Rosendale (VA)
Eduardo Ortiz (NHLBI)
Eta Berner (UAB)
Greg Downing (HHS)
Greg Pawlson (NCQA)
Helen Burstin (NQF)
Hon Pak (DoD)
Jim Dove (Cardiology)
Norman Kahn (CMS)
Virginia A. Moyer (USPSTF)