Alliance CDS Implementation

GLIDES worked Alliance of Chicago to implement clinical decision support interventions. Alliance investigators began with the Yale-designed Asthma CDS, and customized and reused it for implementation across the Alliance network, noting barriers and facilitators of transferring a working CDS from one site to another where both sites use the same vendor-supplied EHR (GE's Centricity).

Key Challenges and Lessons Learned
Alliance investigators were able to successfully adapt the CDS content from Yale. Revised CDS forms (and additional content such as Handouts for Asthma Action Plan and Asthma Control Test) were developed and reviewed by Alliance subject matter experts. Form and content was reviewed by usability-testers who provided feedback to shape the final product. Although Alliance was able to work within the overall framework and structure of the Yale CDS, several detailed changes were incorporated into Alliance's version of the EHR "Asthma Management Form". These various changes illustrate the types of "on the ground" changes needed to customize a CDS application to allow it to operate effectively from one clinical context to another:

- **The Control and Severity Form was added as a single tab in the Alliance Asthma form**. This required:
    - Navigation changes: Removed radio buttons to select "visit type"; Removed radio buttons to jump to other forms; Added display to show previous Severity to enable providers to better select if Severity has been assessed; Added simple option to document Severity Classification in the case it had been determined by a provider prior to patient being seen in the clinic; Updated chart note translation to be easier to read and to reflect if both Control and Severity were documented in a single visit.
    - Changes to the look and feel of the Control/Severity including: Shortening the descriptions of some questions, adding popup buttons to offer the additional information that was removed; Added functionality to have provider accept the Control Assessment and the Severity Assessment; Shortened some responses to fit into available space (this resulted in the need to modify the 'calculation' to determine Control and Severity); Added pop up buttons with help in use of the form.
    - Functions to be updated to remove logic related to EHR document summary lines specific to Yale workflows: The Yale workflows had specific Encounter types for new Asthma visits that would default a specific summary line, thus triggering functions to load. Since Alliance cannot rely on a standard Encounter type used by all sites, this logic had to be removed and developed elsewhere; Text Components getting loaded into the update based on the summary line had to be moved to Visual Form Editor function library so that the library would be loaded whenever the form was added to any update.

- **Changes to the Medication form**: Removed radio buttons to select visit type; Removed radio buttons to jump to other forms; Updated look and feel to match Alliance Standard (button colors and fonts); Removed Refill buttons from individual lines and added a global button at the bottom of the tab; Functions moved to Visual Form Editor function library; Updated Text Files with new GPI codes to ensure all medications are added when selected; Updated functions to check if medication already on medication list and prompt user to update the medication list; Updated logic to add medications to observation terms.
- **Changes to the Assessment Form**: Removed radio buttons to select visit type; Removed radio buttons to jump to other forms; Updated look and feel to match Alliance Standard (button colors and fonts); Reduced size of 'image' to have tab without scroll bar; Removed items to display previous Control Classification, Impairment and Risk, and Severity Classification, Impairment and Risk. The Alliance form has a summary page that displays this information. Added just display for classification of Severity and Classification. Updated logic for displaying recommendations to simplify based on provider classification. Moved functions to Visual Form Editor function library and form. Added section for documenting education of inhaler, control and medication adherence.

Local Factors: The extent of these changes necessary to be made to the Alliance version of the CDS reflect the importance of differences in technical, workflow, clinical policy and other factors that vary from one implementation organization to another. This demonstrates that successful configuration and implementation of sophisticated CDS is a complex challenge, and not just a question of "plug and play" of software modules.

Guideline Complexity/Need For Testing: Despite the "head-start" provided by leveraging the Yale CDS, the complexity of the content and calculations included within the CDS application still required extensive testing within the Alliance environment.

Clinician Buy-In: Expert opinion and buy in from clinical providers was still critical for success when adapting EHR decision support. As with other implementations, few providers have significant free time to volunteer on calls, testing draft content, and provide specific feedback.