Implementation of Clinical Decision Support for the Prevention of Perinatal Group B Streptococcal Disease: A Quality Improvement Perspective

Jane Bigelow MS2
USF MCOM- LVHN Campus

David McLean MD
Lehigh Valley Health Network, David_A.Mclean@lvhn.org

Follow this and additional works at: http://scholarlyworks.lvhn.org/select-program

Part of the Medical Education Commons

Published In/Presented At
Implementation of Clinical Decision Support for the Prevention of Perinatal Group B Streptococcal Disease: A Quality Improvement Perspective

Jane Bigelow and David McLean, MD
Lehigh Valley Health Network, Allentown PA

Study / Results:

A literature search of clinical decision support, computerized decision support, and guideline adherence identified 37 defined clinical decision support tools, and their differences in success rates of the CDS systems with and without 15 potentially important features are depicted in the graph above. Features present in the GBS CDS are indicated with a checkmark. The GBS prevention CDS contains three of the four features found to be statistically and clinically significant in this systematic review.

Acknowledgments:
We would like to acknowledge LVHN Department of Obstetrics and Gynecology for their support in our project.

References:

Act / Conclusions:
CDS systems will almost certainly continue to be important aspects of EHR systems, and their development, integration, and clinical significance will play essential roles in their ability to improve quality of care.

The GBS CDS utilizes two clinically significant general system features correlated with CDS success based on systematic review: integration into the charting or order entry system and computer-based generation of decision support. Benefits of creating a highly integrated CDS, that is, an interface integrated within an EHR, are that it is easily accessible and visible to the provider, and that it provides the platform for efficient data extraction and information output.

The third uniquely significant feature of the GBS tool is its ability to automatically provide decision support as a part of clinician workflow. This feature applies to the GBS CDS because the clinician has access to pertinent information through the EHR, they are prompted to use the CDS at the appropriate time, and they receive the results immediately. Because this project does not include an encompassing analysis of workflow, the evaluation of how well the CDS fits into clinician workflow is a potential component for future research.

The only clinically significant provision the GBS CDS does not follow is request for documentation of reason for not following system recommendations. The probable cause being that the CDS requires all information for guideline adherence; there would not likely be a defendable reason to challenge the recommendation. Though there certainly are circumstances that lead to non-adherence such as incorrect CDS input information, or a patient delivering before recommendations are carried out, these types of cases are outside the scope of this project.

At this point, external algorithm processing is a necessary to overcome deficiencies in available EHRs, but an additional benefit of the model used for this CDS is that the same organization that created the guideline also built the CDS to follow it. This attribute enforces usage of the guideline in the manner the CDC intended it, and facilitates keeping the CDS up-to-date with the most current guidelines. One final benefit of the unique implementation of the GBS tool at LVHN is that the CDC receives the data in real-time, which they are able to use in population based studies. The next step for the LVHN GBS CDS is to complete their Epic implementation, and continue using the GBS CDS to collect critical data.