GLIDES Status Update As Of July 2009

GLIDES is now focused on roll-out of Phase II CDS at Yale and Nemours, and evaluation of Phase I Asthma CDS at Yale Specialty Clinic. Progress overall is satisfactory, although roll-out is running behind schedule by several weeks, as we complete testing and training and deploy strategies to encourage adoption by clinicians. Scope is substantial, with parallel roll-out of CDS for Obesity and Asthma at five clinical locations, across two hospital organizations (Nemours and Yale) using two EHR systems (EPIC and Centricity).

We are now able to evaluate a number of CDS design and implementation techniques in this varied environment. We are on track to complete Phase II roll-out in July, and then commence evaluation. Phase III (which is significantly smaller in scope) will commence in August. The current GLIDES project contract will end in February 2010 by which time we will have met all original objectives.

Nemours Asthma CDS Smart Form

The Asthma SmartForm (ASF) was posted to the Nemours production environment in May and is now in use. Upon launching ASF a pop up window appears displaying the following:

**STEPWISE APPROACH FOR MANAGING ASTHMA IN CHILDREN 0-4 YEARS OF AGE**

### Persistent Asthma: Daily Medication
Consult with asthma specialist if step 3 care or higher is required.  Consider consultation at step 2.

### Intermittent asthma

| Step 1 | Preferred: Low-dose ICS  
| Alternatives: Cromolyn or Montelukast |

*Quick-Relief Medication for All Patients*  
- *SABA as needed for symptoms, intensity of treatment depends on severity of symptoms.*  
- *If viral respiratory infection: SABA 4-6 hours up to 24 hours (longer with physician consult). Consider short course of oral systemic corticosteroids if exacerbation is severe or patient has history of previous severe exacerbations.*  
- *Caution: Frequent use of SABA may indicate the need to step up treatment. See text for recommendations on initiating daily long-term-control therapy.*

### Step 2
Preferred: Medium-dose ICS + either: LABA or Montelukast
Alternative: Cromolyn or Montelukast

### Step 3
Preferred: Medium-dose ICS + either: LABA or Montelukast
Alternative: Cromolyn or Montelukast

### Step 4
Preferred: High-dose ICS + either: LABA or Montelukast
Oral systemic corticosteroids

### Step 5

| Step 6 | Preferred: High-dose ICS + either: LABA or Montelukast  
| Oral systemic corticosteroids |

### Step Up If Needed
- *First, check adherence, inhaler technique, and environmental control.*

### Assess Control
- *Step down if possible (and asthma is well controlled at least 3 months).*

*Close Me!*
Yale Obesity CDS

At Yale, implementation focus has been on Obesity CDS. The quality of the evidence supporting obesity prevention is lower than that supporting much of chronic asthma management. We operationalized the Obesity recommendations as part of a risk determination system. For every child age 2 and older who is receiving a health maintenance visit, the system scans the electronic health record to determine the presence of any of several evidence-based risk factors. If present, they (and their associated odds ratios) are displayed as “alerts” upon opening the “Nutrition and Activity” documentation template in Centricity.

Clinician users are instructed to use this information to decide how best to prioritize nutrition and activity counseling for each patient. A substantial number of counseling interventions are prompted, but the clinician can determine which and how many based on individual risk for development of obesity.

The Yale team prepared the implementation and roll-out plan for the CDS, which was implemented at the Yale Primary Care clinic during June. Communications and orientation of nurse practitioners, residents and attending was performed from June 11th, with the system being available for general use from June 15th.

CDS Challenges

CDS design and implementation is challenging and many detailed problems need to be addressed at a local level. The following reflect some of the more challenging issues we are working through with our Asthma CDS implementation:

**Workflow and Adoption:** At Yale, pulmonologists use their computers only after the patient has left. Consequently, CDS is a post-hoc check rather than real-time guidance. Drivers of this pattern of computer usage are solvable, but their scope is wider than that of the CDS initiative and pertain to general workflow and system adoption challenges at Yale.

**Guideline Applicability:** Guidelines are not rigidly applicable to every patient, and cannot serve as a “gold standard”. Deciding appropriateness of care for each patient is therefore challenging. We are focusing on the internal consistency of the clinician’s approach to the guideline (that is, do they use guideline-appropriate terminology, do they choose the guideline-appropriate treatment for their assessment of patient’s status). The Asthma guideline also assumes symptoms consistent with asthma are always caused by asthma. This is a main source of disagreement with guideline recommendations (i.e. cough due to URI/seasonal allergies/etc., not asthma).

**System Challenges:** We have no effective way to identify time stamp of data entry into Centricity. Evaluation consequently requires direct observation to determine when data was entered.