Clinical-Evidence Overview and a Case Study Review Supporting the Merits of *DynaMed* at the Point-of-Care

Review of *DynaMed’s* evidence-based process and analysis chart

Case Study—*DynaMed* in a Clinical Setting, presented by Dr. Brian Yeaman, Norman Regional Health System (Norman, Oklahoma)

The Value of Current Information in Patient Care
Analysis of *DynaMed’s* Systematically-Reviewed Content and Evidence-Based Process

**A Leader at the Point-of-Care**

*DynaMed* is a clinical reference tool designed to provide the best available information at the point-of-care. Updated daily, *DynaMed* balances the latest content and resources with validity, relevance and convenience, making *DynaMed* an indispensable resource for answering most clinical questions during practice.

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### DynaMed’s 7-Step Evidence-Based Methodology

*DynaMed* monitors the content of over 500 medical journals on a daily basis through Systematic Literature Surveillance, and strictly adheres to the 7-step evidence-based methodology protocols to determine the best available evidence. In order for a clinical reference resource to truly be called evidence-based, conclusions must be based on the best available evidence. Conclusions can be based on the best available evidence only if the evidence is consistently and systematically identified, evaluated and selected.

The *DynaMed* editorial process applies the following strict protocols:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Systematically identifying the evidence</td>
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<tr>
<td>2</td>
<td>Systematically selecting the best available evidence from that identified</td>
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<tr>
<td>3</td>
<td>Systematically evaluating the selected evidence (critical appraisal)</td>
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<tr>
<td>4</td>
<td>Objectively reporting the relevant findings and quality of the evidence</td>
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<tr>
<td>5</td>
<td>Synthesizing multiple evidence reports</td>
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<td>6</td>
<td>Deriving overall conclusions and recommendations from the evidence synthesis</td>
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<tr>
<td>7</td>
<td>Changing the conclusions when new evidence alters the best available evidence</td>
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</tbody>
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**Updated Daily**

**Drug Database**

**Mobile Device Access**

*Mobile application included (supports all current device platforms)*

**Remote Access**

**Citation Links to the Original Research Article**

**Systematic Literature Surveillance**

**Full-Text Links**

**Medical Calculators**

500+

**Context Linking in Electronic Medical Record**

Included

**Standardized Templates**

**Transparent Evidence-Based Methodology**

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*See back page for examples of current information*
Emergency Department Presentation to Inpatient Admission
A 48 year-old male patient presents to the emergency department with shortness of breath, dyspnea on exertion, fever and cough. The patient reveals that he currently smokes a pack of cigarettes every day, and has a 25-year pack history. The emergency physician places the initial orders in Provider Order Management—the patient is admitted to the hospital under the initial admission diagnosis of pneumonia.

A busy ED doctor calls the patient’s primary physician to establish initial inpatient care, providing the following information:

- 48 year-old male patient presents with five days of fever and cough; chest x-ray shows pneumonia and I’m putting him in to you on the pneumonia care map.

The patient’s primary physician presents to the hospital for the admission. The analyses of the data shows PNA community acquired, but underlying this condition, the physician believes there is a reason that his 48 year-old patient is getting an upper-lobe pneumonia. Reading the data, the differential diagnosis is forming—TB, HIV, aspergillosis, histoplasmosis, COPD, asthma, sarcoidosis or possibly cancer. The physician is familiar with how to diagnose/treat asthma, HIV, TB and COPD—he will follow up with the lab, order a PPD, chest CT, treat the patient with broad spectrum antibiotics, place the patient in isolation, check for HIV and do a sputum culture.

However, he has not recently thought about aspergillosis, histoplasmosis and sarcoidosis, and wonders if he has missed something regarding the early warning signs of ARDS. He questions if there is a need to run any specialized studies first line or if he should wait. He also wonders if he should be treating the patient with high-dose IV steroids—which could help or hurt depending on the diagnosis.

Access the Evidence at the Point-of-Care — Medical Record Review with DynaMed
To answer his questions and gain insight into those diagnoses that he is less familiar with, the physician accesses DynaMed at the point-of-care from the EMR and initially searches “vital signs, respiratory rate.” COPD yields a top result; he first checks to see if there are any new drugs available that he should be aware of. He then does a search for aspergillosis and for histoplasmosis—results determine that those diagnoses are a low likelihood for the patient as the patient does little gardening or hiking, and the initial tests cover this spectrum of diagnosis.

The physician then performs a search for sarcoidosis. While quickly scanning the evidence in DynaMed, he notes that the patient is African American, in his forties and has a family history of severe lung disease. He also notes that the CXR had a lot of mediastinal haziness; this information leads him to believe that a diagnosis of sarcoidosis is a strong possibility.

Reviewing the evidence, the physician determines that an alpha-1 antitrypsin will help differentiate early onset COPD, and in quickly scanning the sarcoidosis information, finds that an ACE level may help diagnose sarcoidosis. He also determines that a bronchoscopy is needed, and decides to consult the pulmonologist right away instead of later.

Access the Evidence at the Point-of-Care — Diagnosis with DynaMed
The physician receives the test results at the point-of-care—alpha-1 antitrypsin is negative, as are the fungal tests, PPD (TB) and HIV. However, ACE level is positive. Sarcoidosis is the most-likely underlying issue threatening the patient’s life. Referring to DynaMed for further testing options, the physician recommends a biopsy of a mediastinal lymph node, which confirms his diagnosis. High-dose steroids are used to treat the patient.

Through DynaMed, the physician has positively diagnosed the patient—as early as possible—with sarcoidosis. ARDS is narrowly avoided. The CT chest image reveals a large necrotic mass in the left anterior mediastinum and bilateral hilar lymphadenopathy, and the biopsy from the lymph nodes shows multiple non-caseating granulomas with multinucleated giant cells and histiocytes.

Patient Education at the Point-of-Care
Upon diagnosis, the physician accesses Patient Education Reference Center (PERC) and prints evidence-based handouts regarding PNA and sarcoidosis for the patient and his family five days prior to discharge. These educational materials provide the patient and the family with tangible information to help demystify what just happened; the family had no idea that his symptoms were so serious—they assumed he had a bad cold and would leave the ED with an antibiotic.

“When you can look another person in the eye and they thank you for saving their life, and you know you went the extra mile and did something right—that you utilized every tool at your disposal—that is a great feeling; second to none. The best part is you know that you didn’t get lucky, you applied the best science available."

— Dr. Brian Yeaman, Norman Regional Health System
The Value of Current Information in Patient Care

In order to provide patients with the best-possible care, it is essential to ensure that the resources used in a clinical setting are updated as frequently as possible with the most current information. Updated multiple times each day, DynaMed provides the latest, most-reliable information directly at the point-of-care.

**DynaMed Weekly Update — Designed to Keep Physicians Current through Strong Evidence**

DynaMed Weekly Update is a free newsletter service offered by the DynaMed editorial staff that compiles one to five articles selected from DynaMed’s Systematic Literature Surveillance as “articles most likely to change clinical practice.” This service highlights timely and significant updates—including high-profile changes—within days of publication. A subscription to DynaMed is not required to subscribe to the newsletter.

Samples of high-profile alerting within days of publication provided through DynaMed’s Weekly Update:

**August 26, 2011 Weekly Update**

**Prophylactic Azithromycin Reduces COPD Exacerbations in High-Risk Patients**


**Independent Studies Show that DynaMed is the Most-Current Evidence-Based Clinical Reference Source**

DynaMed™ Daily Updates Prove Critical to Quality Care

"Our citation analysis showed that DynaMed clearly dominates the other products. Slowness in updating could mean that new relevant information is ignored and could thus affect the validity of point of care information services."  

British Medical Journal 2011 Sep 23;334:d5856

"Six tools claimed to update summaries within 6 months or less. For the 10 topics selected, however, only DynaMed met this claim."  


Sample FDA Alert Update

**Citalopram**

Updated 2011 Aug 25 07:35:00 AM:

- FDA warns citalopram (Celexa) associated with potentially fatal abnormal heart rhythm (FDA MedWatch 2011 Aug 24) view update

Sample Guideline Update

**Heatstroke**

Updated 2011 Aug 30 02:15:00 PM:

- American Academy of Pediatrics (AAP) recommendations on climatic heat stress and exercising children and adolescents view update (Pediatrics 2011 Aug 8 early online) view update
- review of heat-related illnesses (Am Fam Physician 2011 Jun 1) view update
- EFNS guidelines on diagnostic approach to pauci- or asymptomatic hyperCKemia (National Guideline Clearinghouse 2011 Jan 24) view update

Sample Topic Updates

**COPD**

Updated 2011 Aug 31 10:07:00 AM:


**Thromboembolic prophylaxis in atrial fibrillation**

Updated 2011 Aug 16 01:02:00 PM:

- rivaroxaban may be as effective as warfarin for preventing stroke or systemic embolism in patients with nonvalvular atrial fibrillation (N Engl J Med 2011 Aug 10 early online) view update