



**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.

*See back page for examples of currency

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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	✓

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:

- 1** Systematically identifying the evidence
- 2** Systematically selecting the best available evidence from that identified
- 3** Systematically evaluating the selected evidence (critical appraisal)
- 4** Objectively reporting the relevant findings and quality of the evidence
- 5** Synthesizing multiple evidence reports
- 6** Deriving overall conclusions and recommendations from the evidence synthesis
- 7** Changing the conclusions when new evidence alters the best available evidence

DynaMed in a Clinical Setting—Case Study

The following is a case study on the merits of using DynaMed via EMR presented by Dr. Brian Yeaman of Norman Regional Health System in Norman, Oklahoma.

Emergency Department Presentation to Inpatient Admission

A 48 year-old male 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 5 days prior to discharge. These education 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.**”

No longer should evidence and the EMR exist on separate islands of care. Technology allows us to bring them together and provide the highest-level quality of care for each patient, which leads to the ultimate finish line—improved outcomes.”

— 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

June 23, 2010 Volume 5 - Issue 27

DynaMed Weekly Update
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For the week ending June 18, 2010

Last week 754 articles were evaluated via *DynaMed's* Systematic Literature Surveillance and 324 were added to *DynaMed* content.

Based on the editors' criteria of selecting "articles most likely to change clinical practice," one article of significant interest was selected for the *DynaMed* Weekly Update.

Feature Article

Initial Oral Corticosteroid Treatment Appears as Effective as Initial IV Corticosteroids for Patients Hospitalized with Acute Exacerbation of COPD

High-dose oral corticosteroids are widely prescribed for patients with acute exacerbation of COPD, despite guidelines recommending lower doses for a synthesis of 3 guidelines (Chest 2010; May 24;COPD;ACUTE10). A 2008 study of 1,355 hospitalized patients who received 2 days, median doses (prednisone 40 mg and prednisolone 30 mg) of oral steroids, while only 8% initially received IV steroids, found that oral treatment was as effective as IV steroids during the first 30 days, median doses (prednisone 40 mg and prednisolone 30 mg) of oral steroids, while only 8% initially received IV steroids, found that oral treatment was as effective as IV steroids during the first 30 days. Treatment failure occurred in 10.3% of the IV group (not significant). In-hospital mortality was significantly lower in the oral group (1% vs. 1.4%, $p = 0.01$).

To control for potential baseline differences, a subgroup analysis compared patients from the 2 groups that were matched by "propensity scores" for initial treatment with oral steroids. Propensity scores were based on patient characteristics (including demographic and insurance factors), comorbidities, all other early treatments and diagnostic tests, and hospital characteristics. In this comparison, initial treatment with oral steroids was associated with reduction in risk of treatment failure (odds ratio 0.84, 95% CI

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Physicians: 0.25 AMA PRA Category 1 Credit(s)[™]
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Release Date: June 23, 2010
Expiration Date: June 23, 2011
Estimated Completion Time: 15 minutes

There is no fee for this activity.

To Receive Credit

In order to receive your certificate of participation, you should read the information about this activity, including the disclosure statements, review the entire activity, take the post-test, and complete the evaluation form. You may then follow the directions to print your certificate of participation. To begin, click the CME icon at the end of the article.

Program Overview

Learning Objectives
Upon successful completion of this

June 18th Weekly Update

Initial Oral Corticosteroid Treatment Appears as Effective as Initial IV Corticosteroids for Patients Hospitalized with Acute Exacerbation of COPD
(*JAMA* 2010 Jun 16;303(23):2359)

July 7, 2010 Volume 5 - Issue 27

DynaMed Weekly Update
Powered by EBSCOhost

For the week ending July 2, 2010

Last week 571 articles were evaluated via *DynaMed's* Systematic Literature Surveillance and 260 were added to *DynaMed* content.

Based on the editors' criteria of selecting "articles most likely to change clinical practice," one article of significant interest was selected for the *DynaMed* Weekly Update.

Feature Article

Rosiglitazone Associated with Increased Stroke, Heart Failure, and Death Compared to Pioglitazone in Elderly Patients

The thiazolidinediones rosiglitazone (Avandia) and pioglitazone (Actos) have become popular drugs for type 2 diabetes in recent years for their potential to improve glycemic control by increasing insulin sensitivity. Concern over the safety of rosiglitazone was raised by a 2007 meta-analysis of 42 trials associating the drug with increased risk of myocardial infarction (MI) and cardiovascular death (*N Engl J Med* 2007 Jun 14;356(24):2457).

A new, large cohort study compared the safety of rosiglitazone vs. pioglitazone in 227,571 elderly patients (mean age 74 years) with diabetes who began taking 1 of the 2 drugs between July 2006 and June 2009. During a follow-up period of up to 3 years, there were 8,667 events of MI, stroke, heart failure, or death. The incidence rate per 100 person-years for the composite of these outcomes was significantly higher for rosiglitazone than for pioglitazone (9.1 vs. 7.42, $p < 0.05$) (level 2 [mid-level] evidence). The number needed to harm (NNH), calculated as the number of patients treated for 1 year to generate 1 excess event, was 60 for the composite outcome. Rosiglitazone was also associated with increased incidence rates of stroke (1.27 vs. 0.95, $p < 0.05$; NNH 313), heart failure (3.94 vs. 3.0, $p < 0.05$; NNH 106), and death (2.85 vs. 2.4, $p < 0.05$; NNH 222). Incidence rates of acute MI were not significantly different (1.83 vs. 1.63) (*JAMA* 2010 Jun 23;303(25):2657).

Also recently published was an update of the 2007 meta-analysis of additional trials comparing treatment with vs. without rosiglitazone. Rosiglitazone was associated with increased risk of MI (odds ratio 1.2, CI 1.02-1.63), but there was no significant difference in cardiovascular (Arch Intern Med 2010 Jun 28; early online).

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Program Overview

Learning Objectives
Upon successful completion of this

July 2nd Weekly Update

Rosiglitazone Associated with Increased Stroke, Heart Failure, and Death Compared to Pioglitazone in Elderly Patients
(*JAMA* 2010 Jun 28 early online)

Sign up for the **FREE** *DynaMed* Weekly Update newsletter at www.ebscohost.com/dynamed/weeklyupdate.php

Sample FDA Alert Update

Weight loss medications withdrawn from market

Updated in *DynaMed* 2010 Oct 08 02:47:00 PM:

- sibutramine withdrawn from market in United States
(*FDA Press Release* 2010 Oct 8) [update](#)
continued peer review
- rimonabant associated with increased risk of suicide (*Lancet* 2010 Aug 14) [update](#)

Sample Guideline Update

Rheumatoid arthritis (RA)

Updated in *DynaMed* 2010 Sep 10 03:23:00 PM:

- hormonal replacement therapy may reduce risk for progression to RA in women with early arthritis who carry human leukocyte antigen (HLA)-DRB1-01 and/or HLA-DRB1-04 alleles
(*Ann Rheum Dis* 2010 Sep) [update](#)
- 2010 American College of Rheumatology/European League Against Rheumatism (ACR/EULAR) classification criteria for rheumatoid arthritis (*Ann Rheum Dis* 2010 Sep) [update](#)
- rheumatoid nodules of the cervix and vagina (*Obstet Gynecol* 2010 Aug) [update](#)

Sample Topic Update

Glycemic goals in patients with type 2 diabetes

Updated in *DynaMed* 2010 Aug 13 06:52:00 AM:

- intensive glycemic control modestly reduces risk for microvascular events in type 2 diabetes (*Lancet* 2010 Aug 7) [update](#)

(The Diabetes topics in *DynaMed* were updated over 300 times in 12 months.)