

# **Imaging Appropriate Use Criteria: A Proven Replacement for Prior Authorization**

William T. Thorwarth, Jr., MD, FACR  
CEO, American College of Radiology

eHealth Initiative Roundtable

Oct. 31, 2018

Washington DC

# DISCLOSURES

- The American College of Radiology has been developing Appropriateness Criteria since 1993 for diagnostic imaging and is a CMS approved “Qualified Provider Led Entity” and is one provider of AUC to the National Decision Support Company who have developed “Care Select Imaging”, a CMS approved “Qualified Clinical Decision Support Mechanism”

# Time for Action: PAMA Mandate

- Starting Jan. 1, 2020 -- referring providers **must** consult appropriate use criteria (AUC) prior to ordering advanced diagnostic imaging services (ADIS: CT, MRI, NM, PET) for Medicare patients.\*
  - This must be done (**and documented**) via a CMS approved qualified clinical decision support mechanism (qCDSM) using AUC from qualified provider led entities (qPLE).
  - Calendar year 2020 an “Education and Operations” period.  
*\*Exemptions: Inpatient and EMTALA services; lack of Internet connectivity.*

# Key Goals for Imaging AUC Policy

- **Evidence-based point of care** alternative to prior authorization.
- Aids movement towards **value-based care** rather than Fee-for-Service.
- **Protects patients** from unnecessary procedures and radiation.
- **Promotes care coordination and referrer education.**

Volume-Based Care



Value-Based Care

# AUC and Congress

- Imaging AUC provisions enacted into law with Protecting Access to Medicare Act (PAMA) of 2014
  - **No national medical specialty society opposed** the AUC approach during legislative process
  - Policy received **strong bipartisan, bicameral support** on Capitol Hill
  - AUC designed to be the first of many “system-wide” changes in health care **focusing on value-based care**

# Fundamentals

- Requires ordering physicians to ***consult, but not adhere to***, imaging AUC prior to referring Medicare beneficiaries for advanced diagnostic imaging services (ADIS).
  - Rendering physician/facility (e.g. radiologist, hospital) bears all financial risk
  - Law and CMS regs give preference to AUCs developed by “**qualified Provider-Led Entities**” (e.g. national medical specialty societies, NCCN, some academic facilities)
  - Promotes use of electronic “**Clinical Decision Support Mechanisms (CDSMs)**” for seamless integration within electronic order entry

# CMS Rules for AUC Program

- **Ordering professionals must consult AUC.**
  - Via qCDSM software integrated in EHRs or via stand-alone web-based portals
  - CDS mechanisms **must offer no cost web-based portals**
  - ACR anticipates qCDSM will provide **unique identifier for the exam order**
- **Exemptions:** Inpatient and EMTALA services; lack of Internet connectivity.
- Tool must provide **immediate feedback** to ordering professional on appropriateness guidance (no delay like PA)
- Multiple qCDSMs **integrate directly into, or operate seamlessly with, existing health IT systems.**

# AUC Implementation Now Imminent

- **CMS has moved *steadily* to get feedback** from stakeholders to ensure minimal burden to implement.
- **Latest implementation schedule:**
  - **July 2018-December 2019:** Voluntary reporting period for early AUC adopters (**with MIPS credit!**)
  - **January 2020:** New start date for AUC program beginning with one year “Educational and Operations” testing period (AUC required but no penalties on rendering physicians)



# AUC is Ready for Prime Time

- CMS allowed ordering physicians **six years** to prepare for implementation (*PAMA 2014 – 2020 start date*).
- Meanwhile, AUC-qCDSMs successfully adopted EHR integration in over *500 health systems and 2,000 acute care facilities in all 50 states*.
- Available via a free web portal.



*Collaboration between CMS, CDSM vendors, as well as ordering and rendering physicians, helped piece together an effective AUC policy.*

# CareSelect Imaging Adoption

**Epic**

**Cerner**

**MEDITECH**

**Allscripts**

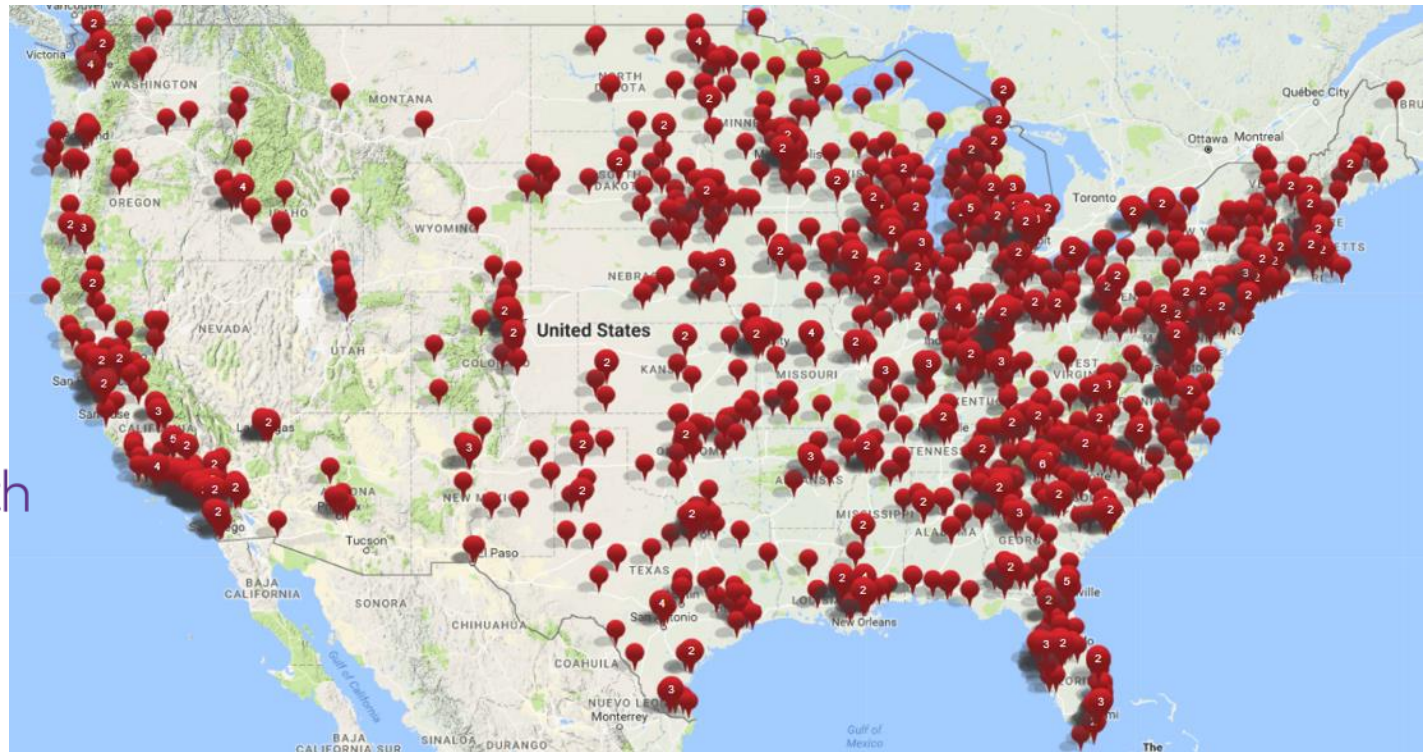
**athenahealth**

**eClinicalWorks**

**MEDENT**

**MEDHOST**

**NEXTGEN**  
HEALTHCARE




More than 500 Health Systems, 5000 Hospitals  
Informing more than 5 million monthly decisions

 **ACRselect**

 **SPR** The Society for  
Pediatric Radiology

 **AMERICAN  
COLLEGE of  
CARDIOLOGY**

 **SNM  
MI** SOCIETY OF  
NUCLEAR MEDICINE  
AND MOLECULAR IMAGING

 **NCCN** National  
Comprehensive  
Cancer  
Network®

 **Choosing  
Wisely**

*An initiative of the ABIM Foundation*

 **CareSelect**  
imaging

# This is NOT Prior Authorization!

- Ordering physicians prefer CDS to prior authorization programs of radiology benefit management companies (RBMs):
  - Point of care, **NO DELAYS**
  - No FTEs sitting on phones
  - No “hard stop”
  - An educational tool for physicians and patients

# Physicians Fed Up With Prior Authorization

Patient Clinical Outcomes Shortchanged by Prior Authorization, Says AMA Physician Survey

<https://www.ama-assn.org/survey-patient-clinical-outcomes-shortchanged-prior-authorization>



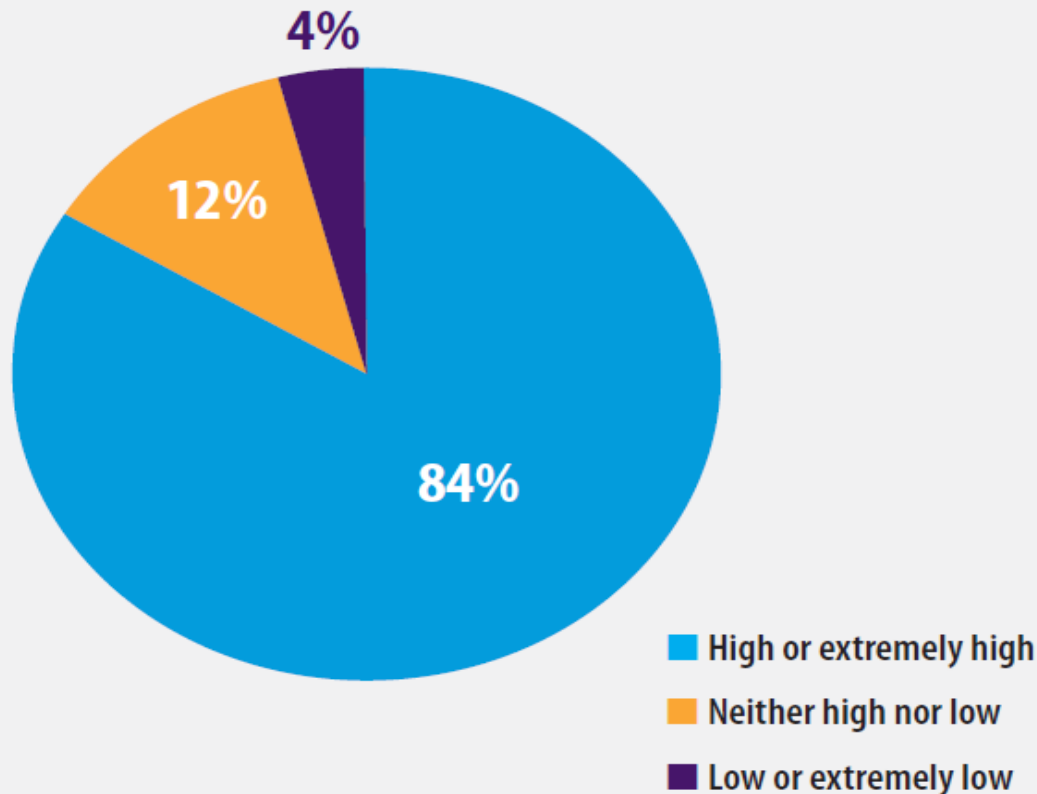
FOR IMMEDIATE RELEASE

March 19, 2018

# Physicians Fed Up With Prior Authorization

## Physician perspective on PA burdens

**Q:** How would you describe the burden associated with PA for the physicians and staff in your practice?



Patient Clinical Out  
<https://www.ama-assn.org>



FOR IMMEDIATE RELEASE

Survey  
[Authorization](#)

March 19, 2018

# AUC CONSULTATION VIA CDS CONFORMS TO AAFP POLICY



Search AAFP News



Sign

CME

Journals

Patient Care

Med School & Residency

Practice Management

Advocacy

Events

AAFP News

AAFP NEWS

AAFP Leader Voices  
Blog

Fresh Perspectives Blog

Family Doc Focus

## New AAFP Policy Takes Aim at Prior Authorizations

May 26, 2017 01:55 pm [News Staff](#) – What's the single most frustrating part of modern medical practice for U.S. physicians?

# Physicians Fed Up With Prior Authorization



Search AAFP News



Sign

“The American Academy of Family Physicians (AAFP) believes prior authorizations should be standardized and universally electronic throughout the industry to promote conformity and reduce administrative burdens.

...when prior authorizations are clinically relevant, the AAFP believes they should be evidenced-based, transparent, and efficient to ensure timely access and ideal patient outcomes”



# Cerner EHR integration

The screenshot displays a Cerner EHR interface for patient ASTER, BEVERLY MARION. The patient's demographic information is shown at the top: Female, 20-JAN-1946, 71 Years, and MRN: 1022098. The main content area is titled "Decision Support for CT Head or Brain w + wo Contrast". Below the title, there is a search prompt "Please select a reason for exam" with an input field and a search icon. Two buttons are visible: "I can't find a match" (blue) and "Cancel CT Head or Brain w + wo Contrast" (red). A section titled "Common Indications (14)" contains a list of checkboxes for various clinical reasons:

- Confusion/delirium, altered LOC, unexplained
- Decreased alertness
- Facial fracture(s)
- Headache, dental / sinusitis / mastoiditis
- Headache, new, immunocompromised or cancer
- Headache, new, meningitis or encephalitis suspected
- Intracranial hemorrhage
- Mass or lump, head
- Neoplasm - CNS primary
- Neoplasm: head, CNS, suspected
- Neuro deficit(s), subacute

An "okay" button is located at the bottom of the list. The interface also shows a left sidebar with navigation options like "Orders" and "Med", and a right sidebar with "Status" and "Admission" buttons. The bottom of the screen features a "Formulary Details" section and buttons for "0 Missing Required Details", "Dx Table", "Orders For Cosignature", and "Orders For Nurse Review".

# Feedback and Alternate Test Selection

ASTER, BEVERLY MARION - 01022098 Opened by Brossard, Patti

Task Edit View Patient Chart Links Notifications Options Current Add Help

Home Physician Worklist Dynamic Worklist Referral Management HealthRegistries MyExperience Activities and Interventions Diabetes Worklist Uptodate Mpages Mobile PMLaunch Exploremenu Propo: 1 Messa: 0

Discern: ASTER, BEVERLY MARION (1 of 1)

ASTER, BEVERLY MARION Female 20-JAN-1946 71 Years MRN: 1022098

### Decision Support for CT Head or Brain w + wo Contrast

Please select a reason for exam

Enter Reason for Exam

Common Indications (14)

- Confusion/delirium, altered LOC, unexplained
- Decreased alertness
- Facial fracture(s)
- Headache, dental / sinusitis / mastoiditis
- Headache, new, immunocompromised or cancer
- Headache, new, meningitis or encephalitis suspected
- Intracranial hemorrhage
- Mass or lump, head
- Neoplasm - CNS primary
- Neoplasm: head, CNS, suspected
- Neuro deficit(s), subacute

Appropriateness rankings for a 71 year old Female [Display Evidence...](#)

<b>CT Head or Brain w + wo Contrast</b>	<b>1</b>	<input type="button" value="Confirm"/> <input type="button" value="Cancel Order"/>
Cost: \$\$\$	RRL:	
<b>XR Skull &lt; 4 Views</b>	<b>9</b>	<input type="button" value="Replace"/>
Cost: \$	RRL:	
<b>XR Skull Complete</b>	<b>9</b>	<input type="button" value="Replace"/>
Cost: \$	RRL:	
<b>CT Head or Brain w Contrast</b>	<b>1</b>	<input type="button" value="Replace"/>

Formulary Details 0 Missing Required Details Dx Table Orders For Cosignature Orders For Nurse Review

# Epic EHR Integration

Hyperspace - Epic 2016 - EPIC35281 - DREW WALKER

**Epic** Review SlicerDicer

Secure Log Out

EpicCare Search

**Knights, Barbara A**

PCP: Drew Walker, M.D. T: 36.1 °C H: 1.702 m Allergies/Reactions  
 Female, 53 y.o., 07/17/1963, Need Interp: No P: 68 W: 70.3 kg Iodinated Diagnostic Agents [Diagnostic X-ray M...  
 BP: 120/80 BMI: 24.28 kg/m<sup>2</sup> Penicillins Ins: Epic Ins CSN: 510378  
 RR: None Health Maintenance MyChart: Active  
 Registries: Hypertension, Wellness Registry: All, An... Patient Messages: None

**Plan**

BestPractice SmartSets Meds & Orders

Medications

- diltiazem (CARDIZEM CD) 240 mg 24 hr capsule
- levothyroxine (SYNTHROID) 100 mcg tablet
- simvastatin (ZOCOR) 40 mg tablet

Unsigned Orders new orders, reorders, and modifications

After visit Procedures (1 Order)

CT Scan Head Contrast (DSS)  Accept  Cancel

Reason for Exam:

**Common indications**

<input checked="" type="checkbox"/> Abnormal gait	<input type="checkbox"/> Headache, chronic, no new features
<input type="checkbox"/> Cerebral hematoma proven	<input type="checkbox"/> Headache, non-acute, abn neuro exam
<input type="checkbox"/> Cerebral hemorrhage suspected, not confirmed	<input type="checkbox"/> Headache, non-acute, nl neuro exam
<input type="checkbox"/> Confusion/delirium, altered loc, unexplained	<input type="checkbox"/> Headache, non-acute, nl neuro exam, atypical features
<input type="checkbox"/> Dementia, alzheimers possible	<input type="checkbox"/> Headache, non-acute, nl neuro exam, other risk factors
<input type="checkbox"/> Dementia, alzheimers probable	<input type="checkbox"/> Headache, sah proven by lp or imaging
<input type="checkbox"/> Dementia, routine initial eval	<input type="checkbox"/> Headache, sah suspected, not confirmed

**Problem List** + Care Coordination Note

Search for new problem

Diagnosis

- ESSENTIAL HYPERTENSION
- HYPOTHYROIDISM
- HYPERCHOLESTEROLEMIA

Mark as Reviewed  Never Reviewed

**Visit Diagnoses**

Search for new diagnosis

No visit diagnoses.

**Patient Goals**

Search for new goal

No active goals.

Go to unsigned orders

# Feedback and Alternate Test Selection

Hyperspace - Epic 2016 - EPIC35281 - DREW WALKER

Epic Review SlicerDicer Knight, Barbara A

PCP: Drew Walker, M.D. T: 36.1 °C H: 1.702 m Allergies/Reactions Iodinated Diagnostic Agents (Diagnostic X-ray M Ins: Epic Ins

Need Interp BestPractice Advisory - Knight, Barbara A

Appropriateness	Procedure	Cost	RRL
5	CT, head, w iv contrast	\$\$	⚠️⚠️⚠️⚠️
8	MR, head, wo/w iv contrast	\$\$\$\$	
7	MR, head, wo iv contrast	\$\$\$	
7	MR, spine, cervical-thoracic-lumbar, wo/w iv contrast	\$\$\$\$	
6	MR, spine, cervical-thoracic-lumbar, wo iv contrast	\$\$\$\$	
5	CT, head, wo/w iv contrast	\$\$\$	⚠️⚠️⚠️
4	CT, head, wo iv contrast	\$\$	⚠️⚠️⚠️
3	PET-CT, head, FDG		⚠️⚠️⚠️⚠️⚠️
2	MR, spectroscopy, head, wo iv contrast	\$\$\$	
2	NUC, brain scan, head, I-123 loflupane, SPECT	\$\$\$	⚠️⚠️⚠️

Click here for ACR Appropriateness Criteria reference information

Remove the following orders?

Remove Keep CT Scan Head Contrast (DSS) Routine

Apply the following?

Order	Do Not Order	Procedure
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MR, head, no iv contrast
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MR, head, w/wo iv contrast
<input type="checkbox"/>	<input checked="" type="checkbox"/>	MR, spine, cervical-thoracic-lumbar, yes iv contrast

Accept Cancel

Go to unsigned orders Signing Orders...

DREW WALKER 1:51 PM

# No Fee Web site

The screenshot shows the CareSelect web application interface. At the top, the browser address bar displays 'test.careselect.org'. The CareSelect logo is in the top left, and 'Logged in as rooke' is in the top right. A left sidebar contains navigation options: Dashboard, Create New Session, Administration, Content, Build, and NDSC Tools. The main content area shows a patient profile for a '26 year old Male' with an 'Edit' button. Below this, it indicates 'Service: Not Selected' and 'Indication(s): Ataxia, slowly progressive or long duration' with an 'Edit' button. The primary section is titled 'Appropriateness rankings for a 26 year old Male' and contains a table with the following data:

Appropriateness	Service	Cost	RRL	Display Evidence...
8	MR HEAD/BRAIN W WO CONTRAST	\$\$\$		Select this service
7	MR HEAD/BRAIN WO CONTRAST	\$\$		Select this service
7	MR WHOLE SPINE W WO CONTRAST	\$\$\$\$		Select this service
6	MR WHOLE SPINE WO CONTRAST	\$\$\$\$		Select this service
5	CT HEAD W CONTRAST	\$\$	☠☠☠	Select this service
5	CT HEAD W WO CONTRAST	\$\$	☠☠☠	Select this service
4	CT HEAD WO CONTRAST	\$\$	☠☠☠	Select this service
3	PET CT BRAIN FDG	\$	☠☠☠☠☠	Select this service
2	MR SPECTROSCOPY HEAD WO CONTRAST	\$\$\$		Select this service
2	NM BRAIN SPECT	\$\$\$	☠☠☠	Select this service
1	US TRANSCRANIAL DOPPLER - INTRACRANIAL ARTERIES	\$\$		Select this service

At the bottom of the table area, there is a 'Feedback' link. The footer of the application states: 'Copyright © 2018 National Decision Support Company. All rights reserved.'

# Referrer Benefit: AUC Integration Within QPP

- 2018 Quality Payment Program (QPP) Final Rule **grants ordering physicians** who consult imaging AUC beginning in July 2018 **“high-level” MIPS improvement activity credit.**

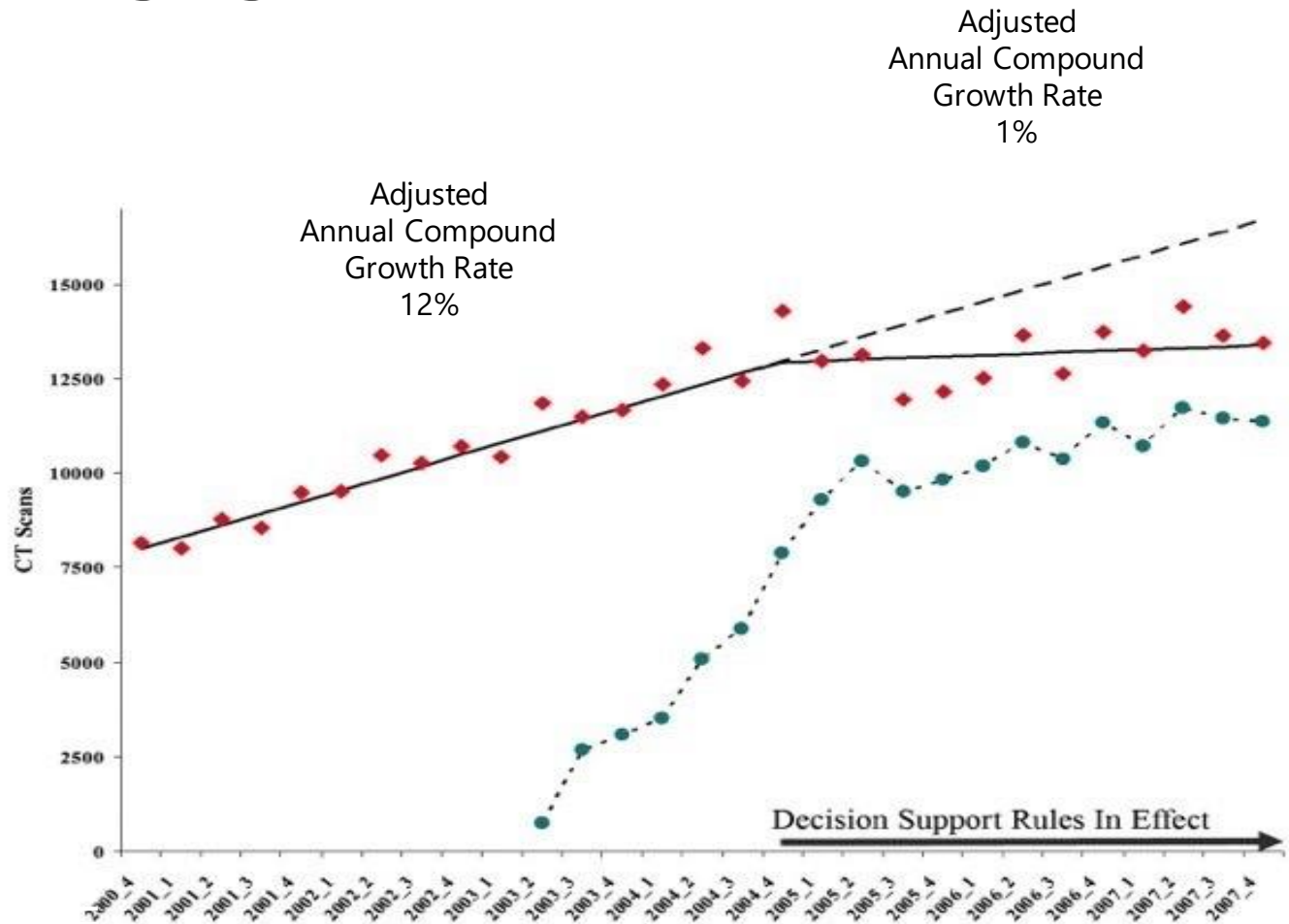
# The Best News

- It really works
  - Optimizing Imaging Utilization
  - Protecting patients from unnecessary or inappropriate tests
  - Educates referring providers
  - Empowers referring providers to address patient insistence



# Massachusetts General Hospital High Cost Imaging

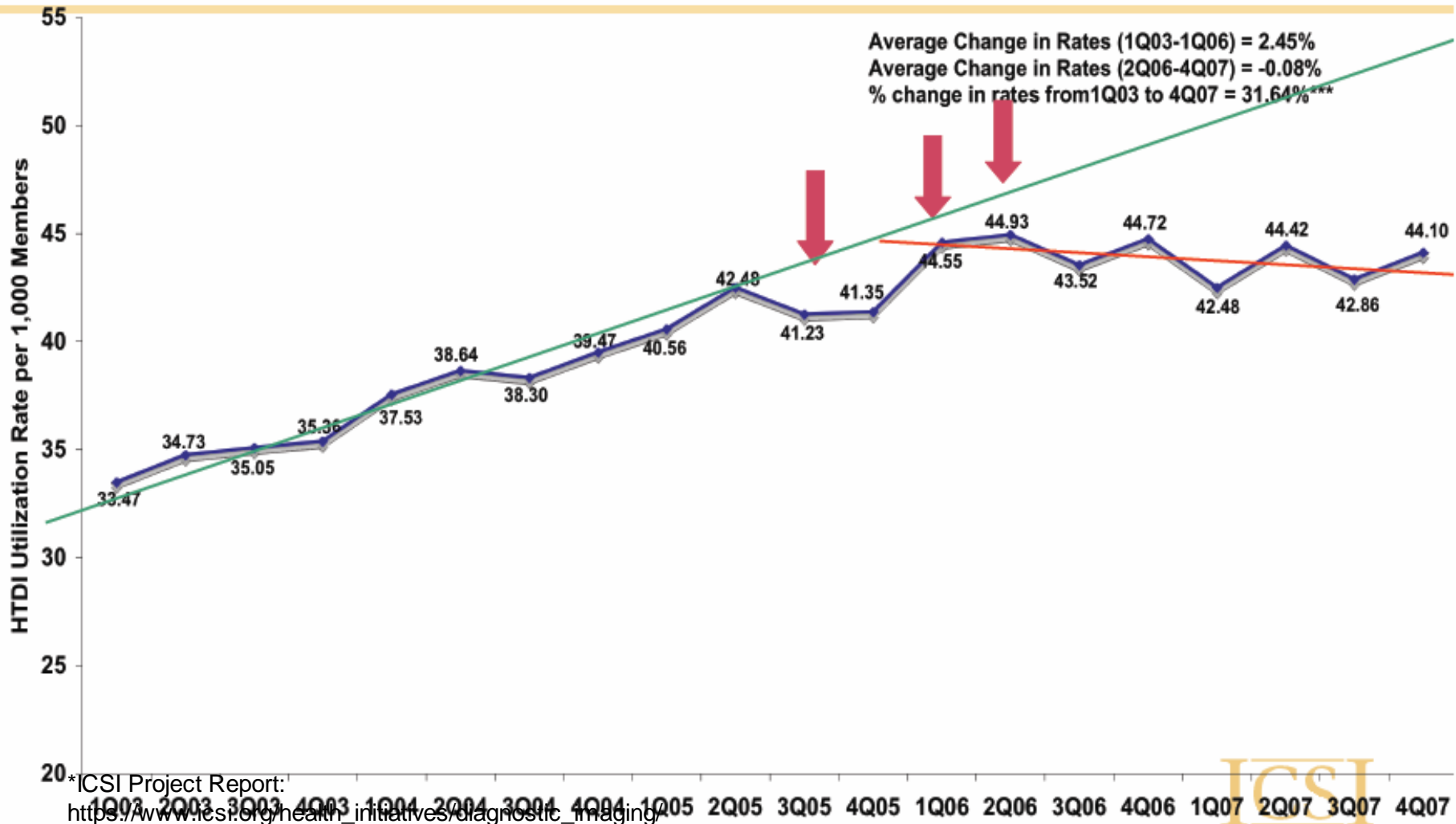
Effects of CDS  
2000 - 2007





# INSTITUTE FOR CLINICAL SYSTEM IMPROVEMENT (ICSI)

## IMPACT ON HI TECH DIAGNOSTIC IMAGE ORDERING



\*ICSI Project Report:  
[https://www.icsi.org/health\\_initiatives/diagnostic\\_imaging/](https://www.icsi.org/health_initiatives/diagnostic_imaging/)

# RSCAN Example Results

October 2016

**Case Study: The Benefits of Collaboration**

**IMAGING3.0™**

*Radiologists and emergency department physicians partner on an R-SCAN™ project—successfully reducing unnecessary imaging by 52 percent.*

By Amena Hassan

**Key Takeaways:**

- At Baylor College of Medicine, radiologists partnered with emergency department (ED) clinicians to conduct an R-SCAN quality improvement project focused on reducing inappropriate image ordering for patients with possible pulmonary embolisms (PE).
- Inappropriate imaging decreased by 52 percent after an educational intervention directed ED clinicians to order a D-dimer test before a CT scan for patients with a low probability of PE.
- R-SCAN is funded through a Transforming Clinical Practice Initiative (TCPI) grant. TCPI is a program through the Centers for Medicare & Medicaid Services (CMS) that helps health care providers achieve transformational change.

A 2012 study published in the journal *Emergency Medicine Practice* found that each year in the U.S., as many as 900,000 people will suffer from acute pulmonary embolism.<sup>1</sup> The classic presentation of PE is the abrupt onset of pleuritic chest pain, shortness of breath, and hypoxia. However, most patients with PE have no obvious symptoms at presentation.

To begin diagnosis and treatment of PE, emergency medicine physicians often immediately order chest imaging; however, not all of those scans are warranted, according to evidence-based appropriate use criteria. Here's how one large academic medical center leveraged the Radiology Support, Communication, and Alignment Network (R-SCAN) step-by-step action plan to collaborate with physicians in its emergency department (ED) and reduce inappropriate imaging by more than 52 percent.

**Choosing the First Topic**

Reducing inappropriate imaging is a "passion project" for L. Alexandre Frigini, MD, director of quality assurance and a member of the quality committee at Baylor College of Medicine in Houston, Texas. An associate professor in the department of radiology at Baylor, Frigini teaches quality improvement to medical students and radiology residents and has created a quality improvement and patient safety "boot camp," which incorporates principles from Imaging 3.0<sup>™</sup>, the Choosing Wisely<sup>®</sup> and Choosing Gently<sup>™</sup> campaigns, clinical decision support, and practice quality improvement (PQI) projects.

When Frigini first heard about R-SCAN, he knew it provided an invaluable platform to bring together the radiology team with referring physicians in implementing a PQI project to reduce inappropriate imaging. One of the Choosing Wisely topics available under R-SCAN is CT Angiography (CTA) for PE. Frigini determined that he and his team should begin their R-SCAN quality improvement journey with that topic.



L. Alexandre Frigini, MD, director of quality assurance at Baylor College of Medicine, led his team to reduce unnecessary scans after partnering with ED leaders for the launch of R-SCAN project.

**Partnering with the ED**

The Baylor radiologists chose the PE topic due to a perception that patients were receiving too many unnecessary scans, thus making it one of the areas that would provide the most impact to the hospital. Frigini and his radiology colleagues, in partnership with ED leaders, chose to focus on the PE topic as their first project for two reasons.

First, radiologists believed that too many unnecessary scans were being ordered for ED patients that did not meet the CT pulmonary angiography (CTPA) criteria protocol. Second, the team wanted to partner with an

Continued on next page

ACR  
1891 Preston White Drive  
Reston, VA 20191  
703-648-8900  
www.acr.org/imaging3

©Copyright 2016  
American College of Radiology  
Media contact: pr@acr.org

Radiologists and emergency department physicians partner on an R-SCAN™ project.

More than 18% of CTPE exams were inappropriately being ordered without a D-Dimer test. In many cases, receiving a scan despite a negative D-Dimer test.

As a result of the practice improvement initiative and intervention a reduction in CTPE of over 52% was achieved.

# AUC Delivers Real Results




**\$600k**  
Saved<sup>1</sup>

**17%**  
Reduction in  
Low Utility  
Ordering<sup>2</sup>



**50%**  
Increase in  
Diagnostic  
Efficiencies<sup>2</sup>



# AUC Delivers Real Results

**38%**

Reduction in Imaging  
for Low Back Pain

Baylor College of Medicine radiologists worked with referring physicians to reduce unnecessary imaging for low back pain through R-SCAN™.

A mid-sized health system in Wisconsin successfully mitigated the over-ordering of CT scans for uncomplicated headache through the targeted use of guidelines delivered through CareSelect Imaging.

**63%**

Reduction in Imaging  
for Uncomplicated  
Headache

**43%**

Increase in Provider  
PECARN Adherence

Einstein Healthcare Network leveraged their implementation of CareSelect Imaging to develop a custom PECARN subroutine to determine the appropriateness of CT for pediatric patients with minor head trauma.

**It's time to unleash the benefits of AUC!**

# Example results

## ■ University of Virginia

Table 1. Frequencies and percentages for the number of low utility, marginal utility, and indicated appropriateness score categorizations observed during the pre-intervention (ie, silent mode) study period and during the intervention (ie, feedback mode) study period

Appropriateness Score	Study Period			
	Pre-Intervention		Intervention	
Categorization	Intervention	%	Intervention	%
Low utility	746	11.0	918	5.4
Marginal	1655	24.5	2134	12.6
Indicated	4353	64.5	13857	82.0
Total	6754	100.0	16909	100.0

[https://www.jacr.org/article/S1546-1440\(18\)30387-9/pdf](https://www.jacr.org/article/S1546-1440(18)30387-9/pdf)

## ■ IL Hospital

2018 Ambulatory Prior Authorizations Benchmark	CDS Scores			Total Scored
	Not Appropriate	May Be Appropriate	Appropriate	
	1 - 3	4 - 6	7 - 9	
	Approved	308	314	
Denied	3	3	1	7
Withdrawn	0	4	7	11
<b>Grand Totals</b>	311	321	1354	1986

- 1,986 exams were scored by CDS
- 68% met AUC with scores 7-9, and the PA was Approved (1346 of 1986)
- 16% met AUC with scores 4-6, and the PA was Approved (314 of 1986)
- 16% did not meet AUC with scores 1-3, yet the PA was Approved (308 of 1986)

# Aggregate Results

- Directly Eliminating over \$170m annually in wasteful advanced imaging services
  - Provider acted on feedback
- Identified more than \$4.5b in potential savings across all consultations
  - Potential savings through feedback
- Being adopted by many health systems and plans in support of 'gold card' initiatives based on data indicating UM effect of CDS to be equivalent or better than current UM approach
  - Payer supported gold card based on effect of evidence based medicine into the workflow

# Unmanaged Imaging Utilization Is Not An Option

- Payment cuts and prior authorization threaten patient access to imaging and create huge headaches for referrers.
- Failure to address this through AUC/CDS will lead to more widespread use of prior authorization, interfere in the doctor-patient relationship and delay patient care.

***Let's work together to make this happen.***

**Thanks**

**Questions?**