

Notes for the speaker from the ACR.

- This is a text-intensive PPT deck.
- It was designed to be printed and handed out to attendees so that they can follow along and take more detailed notes.
- Please do not feel obligated to read every word on every slide!

Slide 2:

Notes for the speaker from the ACR, con't.

This presentation is designed to be modular, so that it can be delivered in shorter segments of 10-15 minutes each:

Slide #s	Slide Content
3-4	Introduction and Disclosures
5-9	Background on PAMA legislation
10-19	CDS, Imaging 3.0 and Healthcare Transformation
20-35	Clinical Decision Support and Prior Authorization
36-45	How Radiologists can help with CDS Implementations and Respond to Common Objections
46-54	CDS and Private Payers
55-65	R-SCAN and Links to Additional Resources

Notes on Slide 2:

Slide 3:



A Quick Tutorial for the Final Stretch before the PAMA deadline of Jan. 1, 2020

Clinical Decision Support for Appropriate Ordering of Imaging

A presentation for <<forum name>> on <<August 30, 2019>>

<<Your Name>>

<<Your Day-job Title>>

<<Your ACR title(s) if you have any>>

Notes on Slide 3:

Slide 4:

Disclosures

Dr. <<your name here>> has no disclosures.

Notes on Slide 4:

My other disclosures are.... <if you have any>.

Or

I have no disclosures to make today.

Why are we here today? PAMA of 2014



Notes on Slide 5:

In 2014, President Obama signed H.R. 4302 into law.

- It mandated a change that for all Medicare patients needing advanced imaging care (CT, MRI, PET) that:
 - Physicians will only be paid for advanced imaging exams if the examination was ordered through an approved clinical decision support tool.
 - For those who don't consult CDS, the alternative would be a new preauthorization process similar to what we have seen for years with private payors.

PAMA was a success for our patients and our specialty because:

- It improves care by leveraging the ACR Appropriateness Criteria (AC) and its digital counterpart that can be embedded in an EHR's ordering workflow
- It kept Medicare from adopted prior authorization and radiology benefits managers for imaging
 - Previously, MedPAC and two presidential administrations recommended to CMS that Medicare use radiology benefits management (RBM) preauthorization (in addition to imaging cuts).
 - The Trump Administration is now targeting all services vulnerable to overutilization with prior authorization and outlier policies.
 - But because of PAMA, diagnostic imaging will *not* be included in these broad-based cuts.

Slide 6:



Notes on Slide 6:

Finally, the bill provided a permanent fix to the SGR formula problem that had dogged us on Medicare reimbursement for some time.

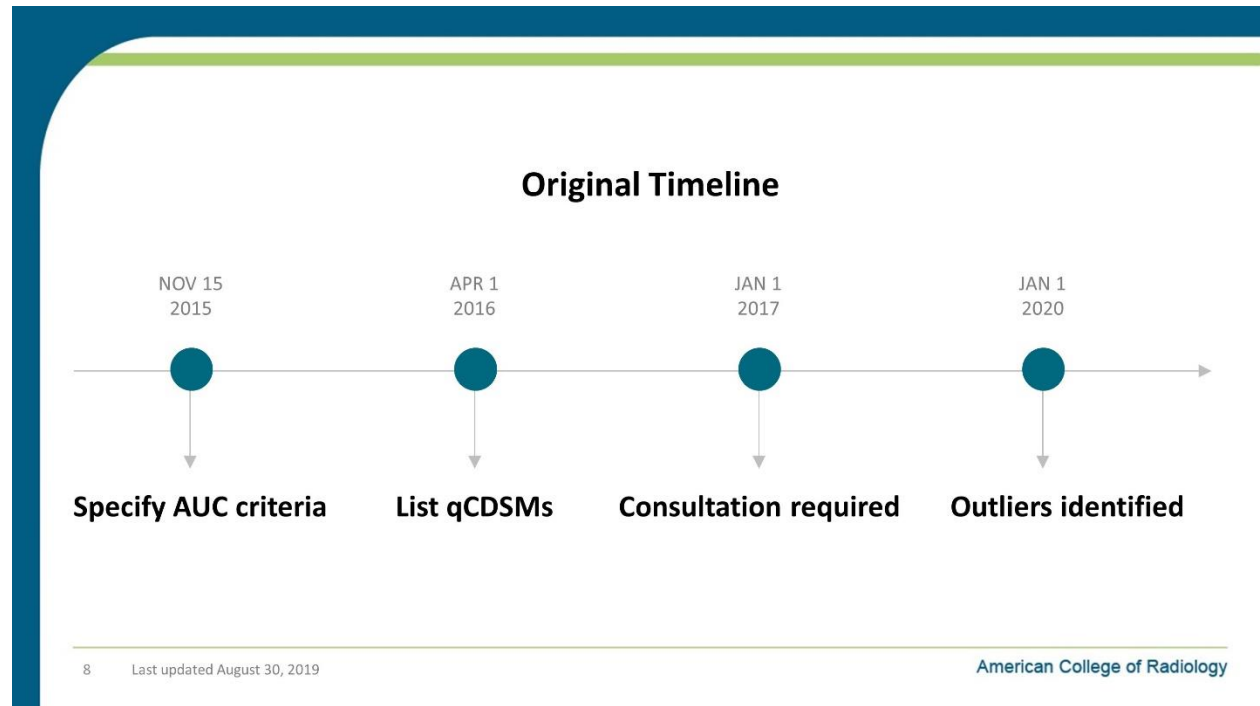
Slide 7:



Notes on Slide 7:

- For a long time, we (radiologists) had been too much of the outskirts of the work that was happening in Washington and in our communities to reshape the US healthcare system.
- Which is too bad, because we bring a ton of insight and value to the table.
- But we hadn't consistently communicated that value to all of the stakeholders in the US healthcare system.
- PAMA was a huge milestone in radiologists getting a much bigger seat at the table.
- For fans of the musical show *Hamilton*, PAMA helped us get in *The Room Where It Happens*.

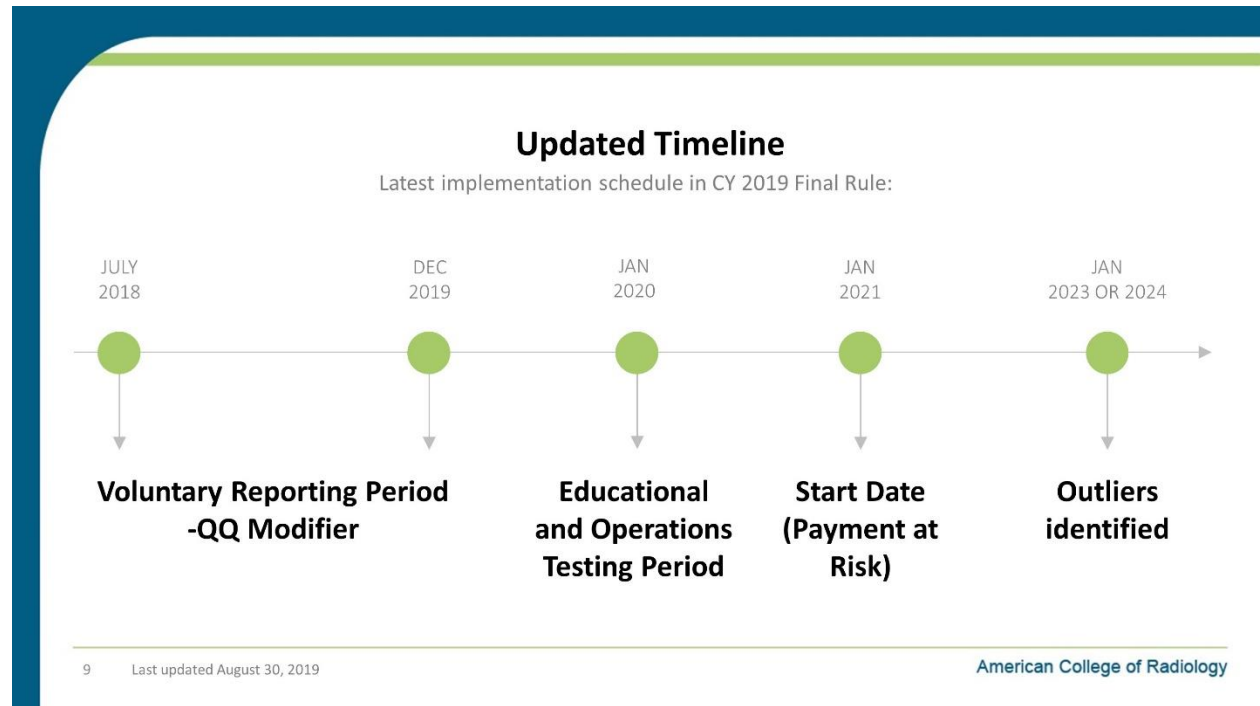
Slide 8:



Notes on Slide 8:

The original deadline for implementation of CDS was January 1st of 2017.

Slide 9:



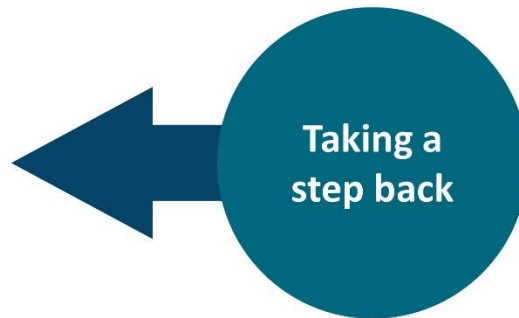
Notes on Slide 9:

This deadline has been moved back a few times and is now January 1st of 2020.

Slide 10:

● How and why did we get to this point?

● Why is it a good thing that we are here today?



Notes on Slide 10:

So let's take a step back and answer a couple of key questions:

- Why is it a good thing that we are here today?
- How and why did we get to this point?

What is our mission as physicians?



Notes on Slide 11:

You all are incredibly busy people. You work hard every day to:

- Deliver great care to your patients and
- Run a successful practice

There are a number of different types of activities that compete for your time.

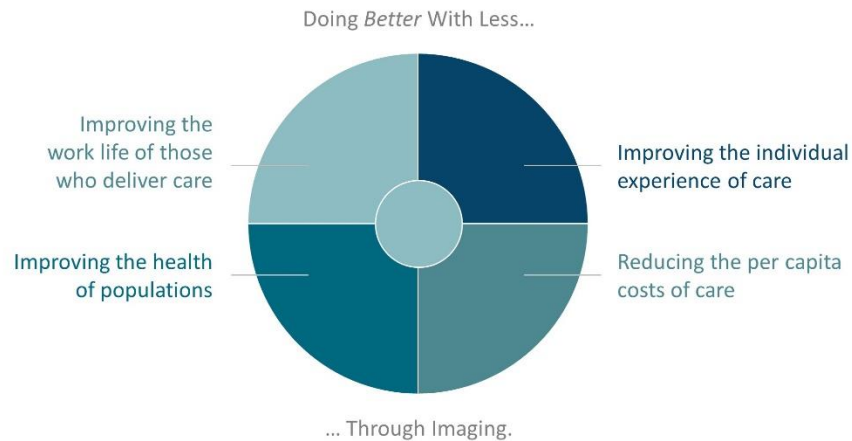
You don't have time to work on them all, so you have to decide which ones are the most important, knowing that none of them are unimportant!

So why should you care about CDS? What's in it for you? Why does it deserve your attention?

Here's the bottom line:

- We do 3 basic things in medicine:
 - First - Keep people from getting sick
 - Second – When they are sick, get them healthy as soon as possible
 - Third - When they have a chronic condition, keep their condition well managed and their quality of life high
- But the world is a complicated place and, unfortunately, we can't just come into work every morning and just practice medicine 100% focused on our patients and getting them well.

The Quadruple Aims



Notes on Slide 12:

Instead we come to work every day and have to fight for our patients against larger forces that are driven by economics and the bureaucracies that grow out of those economic conditions. But there is good news:

First, there is a lot of alignment in the US healthcare system about what changes we want to see in our healthcare system, even if there is an absence of agreement in how we get there.

The Quadruple Aims outlined here are our guideposts. What we need is:

- To improve the health of populations
- To improve our patient's individual care experiences
- To reduce the cost per capita that we spend on care, and
- To improve the work life of those who deliver care

The second piece of good news is that:

- With accountable care, we're now being financially incented to do the right things for our patients and those paying for their care

The third piece of good news for radiologists is that:

- For the entire system to succeed at accountable care and the Quadruple Aims, our healthcare system needs to use imaging as efficiently and effectively as possible. Which means we have a LOT of value to add.
- And we can finally get out of this zero-sum-game thinking about carving up the limited dollars the healthcare pie.
- Instead we can create a situation where we all win: Patients and their families. Healthcare systems. Referring physicians. Radiologists. Employers. And payors.

What is Imaging 3.0?



Imaging 3.0 is a vision and game plan for providing optimal imaging care.

"Our goal is to deliver all the imaging care that is beneficial and necessary and none that is not."

3 Key Actions:



Culture Change



Portfolio of IT Tools



Alignment of Incentives

Notes on Slide 13:

So as many of you may already know, radiology as a specialty has developed our own point-of-view on how to get to the other side of healthcare transformation, and we are acting on it every day.

It's called Imaging 3.0.

Imaging 3.0 is both the vision and game plan to achieve our goal. And our goal as radiologists, to put it succinctly, is:

- To provide optimal imaging care from the moment a clinician considers ordering an imaging study or treatment
- until that referring physician receives *and*
- understands an actionable report with evidence-based recommendations.

Imaging 3.0 is about "delivering *all* the imaging care that is beneficial and necessary and *none* that is not."

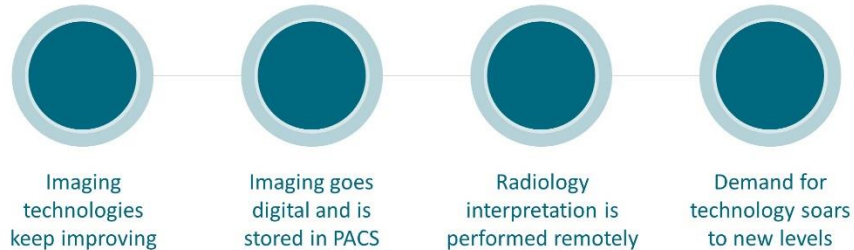
It's the way that radiologists have been rapidly moving from volume to value.

And we're getting there by doing three key things:

- First, we're changing the culture in radiology *and* the entire healthcare system.
 - Specifically, we're more tightly integrating radiologists *and their knowledge* into healthcare delivery.
- Second, we're rolling out informatics tools like Clinical Decision Support for the ordering of images, Clinical Decision Support for the interpretation of images and patient data registries.
- And third, as you already saw in the opening slides, we're changing the policy conversation in Washington about how imaging is paid for.

The Growth of Modern Imaging (Imaging 2.0)

Technology Explosion Starts Around 1990



Notes on Slide 14:

Continuing our step back to look at how we got here, the modern period of imaging (which we often call Imaging 2.0) starts around 1990.

This is when we see

- CT, MRI and PET go mainstream.
- Imaging goes digital and we start storing images in PACS databases.
- And because of PACS, radiology interpretation starts being performed remotely.
- When we put it all together, demand for imaging and radiologists to interpret those images goes way up.

Who Wins with Imaging 2.0?



Notes on Slide 15:

So there are some winners in the Imaging 2.0 era.
The biggest winners are patients and their providers who get better diagnostic tools.

MRI and CT Scanning

AT THE INTERSECTION OF HEALTH, HEALTH CARE, AND POLICY

HealthAffairs

Physicians' Views Of The Relative Importance Of Thirty Medical Innovations

A survey of leading general internists provides a useful consensus on the relative importance of innovations to their patients.

By Victor R. Fuchs and Harold C. Sox Jr.

Rank	Innovation	Mean Score	Most	Not most or least	Least
1	MRI and CT scanning	0.878	75.6%	24.4%	0.0%
2	ACE inhibitors	0.767	54.2	44.9	0.9
3	Balloon angioplasty	0.758	53.8	44.0	2.2
4	Statins	0.736	48.0	51.1	0.9
5	Mammography	0.733	47.6	51.6	0.9

Notes on Slide 16:

Just talk to doctors who practiced medicine before CT and MRI. They'll tell you how invaluable they are.

This is a study where internists were asked to name the most important innovations in medicine.

- What you'll see is that MRI and CT came in first place *by a pretty wide margin*.
- Just try fighting cancer without imaging
- Or when was the last time you heard someone say, "I'm having exploratory surgery because my doctor can't figure out what's wrong with me and has to open me up to see what's what?"

Imaging 2.0: Downsides



Healthcare spending
goes way up

Some level of inappropriate imaging occurs due to:

- Lack of good decisions support tools
- Difficulty sharing images
- Defensive medicine
- Misaligned incentives

Notes on Slide 17:

But there are also some downsides to the Imaging 2.0 era

- Some level of inappropriate imaging occurs due to a number of factors:
 - Lack of good decisions support tools
 - Difficulty sharing images
 - Defensive medicine and
 - Misaligned financial incentives
- And this is the same period where healthcare spending goes way up.
 - And imaging definitely plays a role in this until about 2006 when the growth rate for spending on imaging really starts to level off compared to other categories of healthcare spending.

Citations:

- Kaiser Fact Sheet Publication (#7692-02). Trends in Health Care Costs and Spending, March 2009, http://kaiserfamilyfoundation.files.wordpress.com/2013/01/7692_02.pdf.
- AJR Am J Roentgenol. 2013 Dec;201(6):1277-82. doi: 10.2214/AJR.13.10999.
Comparative analysis of Medicare spending for medical imaging: sustained dramatic slowdown compared with other services. Lee DW, Duszak R Jr, Hughes DR.

Slide 18:

WELL | Medical Radiation Soars, With Risks Often Overlooked

Well


PERSONAL HEALTH | AUGUST 20, 2012, 4:02 PM | 51 Comments

Medical Radiation Soars, With Risks Often Overlooked

By JANE E. BRODY

E-MAIL
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PERSONAL HEALTH
Jane Brody on health and aging



Radiation, like alcohol, is a double-edged sword. It has indisputable medical advantages: Radiation can reveal hidden problems, from broken bones and lung lesions to heart defects and tumors. And it can be used to treat and sometimes cure certain cancers.

But it also has a potentially serious medical downside: the ability to damage DNA and, 10 to 20 years later, to cause cancer. CT scans alone, which deliver 100 to 500 times the radiation associated with

GRAND BUDAPEST

PREVIOUS POST
Baby Boomers Urge Get Hepatitis C Test

ASKWell
Your health questions, journalists and experts

Ask a question

Related Questions

After 20 years of resists being told my cholesterol the chart I was at extreme check-up I was told my new way physicians use what are the factors that
Asked by threadheadnet from

What is the radiation/ca consuming food products Japan?
Asked by S from New Jersey

With very little risk for cc

Notes on Slide 18:

In this period, we also start paying more attention to risks of excessive and unnecessary radiation exposure.

Slide 19:



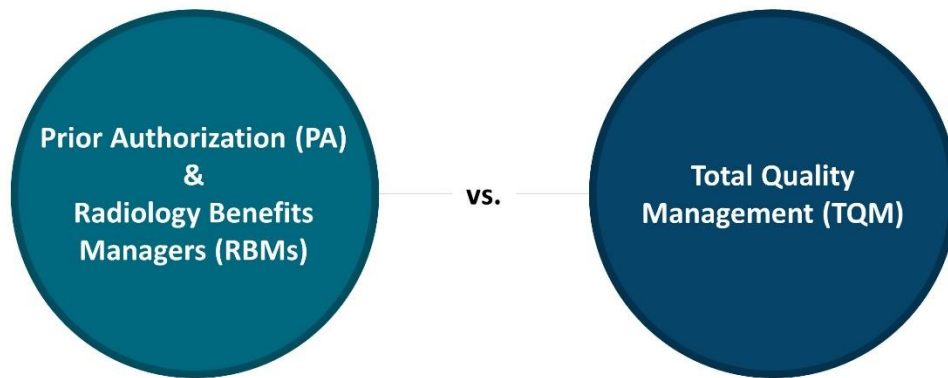
“The Invisible Radiologist”

Notes on Slide 19:

There's one other important loss in this period that's often overlooked:

- When the images go digital, the radiologist's work lists in their PACS becomes their main interface.
- It's a powerful interface, but it's not a particularly collaborative or patient-centric.
- And that face-to-face collaboration with the ordering physician in the reading room largely goes away.
- Some of us become what's known as “The Invisible Radiologist” in a basement reading room that no other doctors ever visit.

**Every Action has an Equal and Opposite Reaction.
But the reaction is not always the most helpful one!**



Notes on Slide 20:

So what happens in response to the growth in imaging utilization?

We see an equal and opposite reaction: Payors implement a roadblock that's intended to stop "runaway" imaging orders.

The fundamental issue is that while inappropriate imaging is a problem of healthcare quality and cost control is an issue as well, prior authorization is a terrible solution.

If you look at the ideas of Total Quality Management (TQM) which revolutionized business and organizations, what it says that, "When the process is broken, you don't patch up the low-quality outputs after they roll off the factory line. You find the source of the quality problem and fix it!"

If too many inappropriate images are being ordered, then fix the way that we order the images so that doctor orders the right imaging study the first time.

Don't spend your best energy trying to correct the order after it has been created!

Slide 21:

The screenshot shows the AAFP website interface. At the top, there is a navigation bar with links for 'Primary+', 'Pay Dues', 'Membership', and 'Join AAFP'. On the right side of this bar are 'Shop' and 'View Cart (0 Items)'. Below the navigation bar is the AAFP logo and a search bar labeled 'Search AAFP News' with a magnifying glass icon and a 'Sign In' button. A secondary navigation bar contains links for 'CME', 'Journals', 'Patient Care', 'Med School & Residency', 'Practice Management', 'Advocacy', 'Events', and 'AAFP News'. The main content area features a news article with the title 'Medicare Advantage Plans Must Rein in Prior Authorizations' and a sub-headline 'AAFP, Others Urge Quick Action by CMS'. The article text reads: 'March 08, 2019 04:55 pm News Staff – The AAFP and nearly 100 other medical professional organizations presented a united front recently in asking CMS Administrator Seema Verma, M.P.H., to provide appropriate direction to Medicare Advantage plans on their use of prior authorizations through the agency's final 2020 call letter.' At the bottom left of the slide, it says '21 Last updated August 30, 2019'. At the bottom right, it says 'American College of Radiology'.

Notes on Slide 21:

I don't have to show you evidence about how much everyone in the provider world (and patient world) truly hates prior authorization.

Watch the timeclock on this prior auth call!



Notes on Slide 22:

I know I don't need to belabor the point of how much clinicians and patients hate prior authorization.

And there has been a lot of research done on the inordinate burden of time that this puts on the system, not to mention huge frustration for everyone involved.

But the best way to sum it up might be to show you some clips from a YouTube video posted by Dr. Ryan Neuhofel, a Family Medicine physician in Kansas.

In this video, he spends 20 minutes trying to obtain prior authorization for a CT scan for a patient who clearly needs one. Why?

Because the patient has a gross physical abnormality on his skull.

And the end result of his 20-minute call to the insurer's RBM—which by the way contained maybe 30 seconds of clinical content—the doctor is told that they will fax him paperwork which he should fill out and send back!

Slide 23:

A New President and Health Care Reform

K.K. Wallace testifies for ACR before House Ways & Means



Notes on Slide 23:

Radiology's response to this challenge dates back to the Clinton Administration's attempt at healthcare reform.

In response to this, the ACR tells Congress that we're going to do our part to find a responsible solution that helps both patients and taxpayers.

We pledge that the ACR will:

- Take a leadership role in defining the most cost-effective and beneficial ways of utilizing radiologic services
- Design a system of patient care guidelines to eliminate inappropriate utilization of imaging services

And we follow through.... in a big way.

AUC History and Overview

- ACR establishes the Appropriate Use Criteria Task Force in 1993
- Build on best practice methods to create evidence-based guidelines built with
 - **Very high quality process:**
 - Agency for Healthcare Research and Quality (AHRQ) guidelines designed by the Institute of Medicine (now the Academy of Medicine)
 - **High quality scientific inputs, including combination of:**
 - Evidence
 - Expert consensus
 - Input from physicians from other medical specialties



Notes on Slide 24:

The ACR establishes the Appropriate Use Criteria Task Force in 1993

It built on best practice methods to create evidence-based guidelines built with:

A very high-quality process:

Agency for Healthcare Research and Quality (AHRQ) guidelines designed by the Institute of Medicine (now the Academy of Medicine)

High quality scientific inputs, including combination of:

Evidence

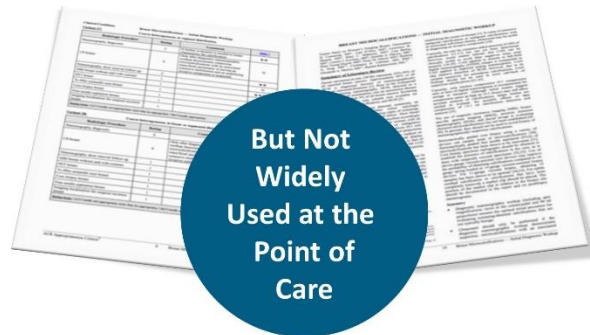
Expert consensus

Input from physicians from other medical specialties

Over the Years: Delivering Clinical Decision Support To Providers

ACR Appropriateness Criteria

- 25 years of continuous work
- Hundreds of clinical experts
- Multi-specialty based
- 5,962 literature references
- Rigorous *Strength of Evidence* methodology
- AHRQ NGC approved
- Continuously updated
- Fully transparent
- Widely referenced



Notes on Slide 25:

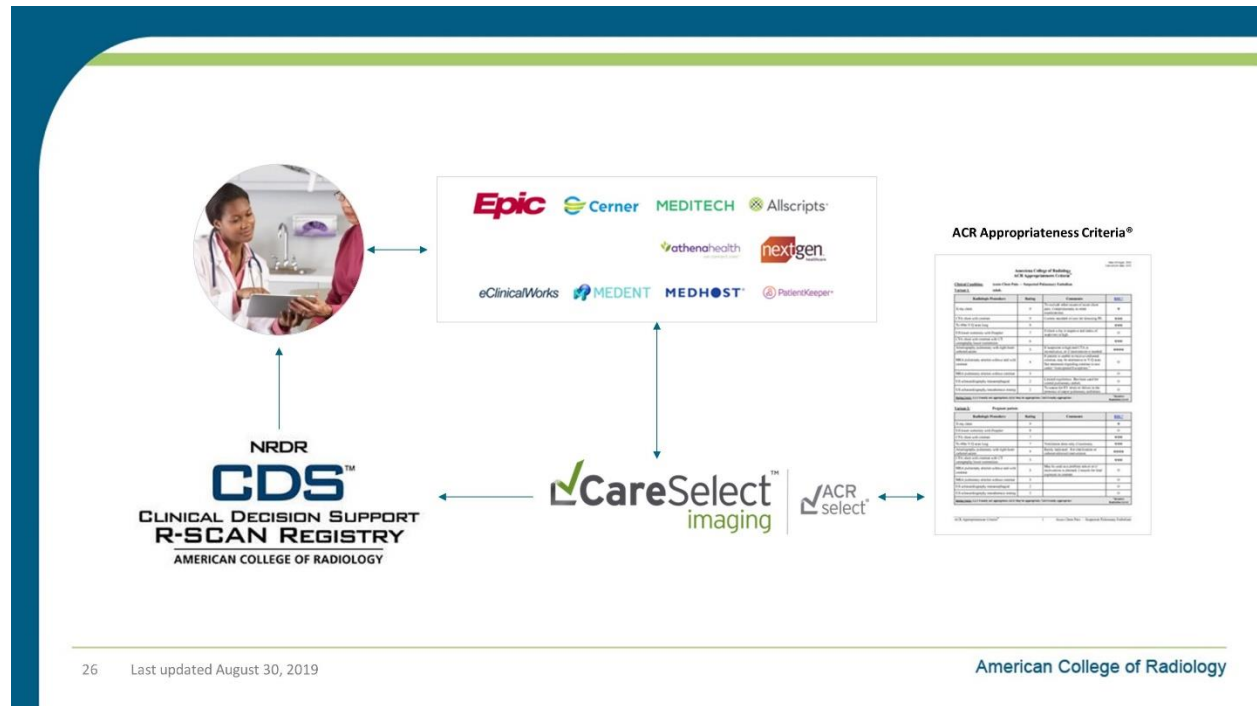
And they get to work creating the ACR Appropriateness Criteria

- 25 years of continuous work
- Hundreds of clinical experts
- Multi-specialty based
- 5,962 literature references
- Rigorous SOE methodology
- AHRQ NGC approved
- Continuously updated
- Fully transparent
- Widely referenced

The problem was that these tools were not widely consulted by physicians when they actually wanted to write an order for an imaging study for the patient they were sitting with. There were attempts to create interfaces that made it easier to consume this data at the point of care, like a little book that was a Pocket Guide for the ACR Appropriateness Criteria.

But none of these types of tools were ideal since the doctor had to stop and take the time out of their workflow to find the guide, look up the appropriate guideline, read the guideline and then figure out how it fits the presenting patient.

Slide 26:



Notes on Slide 26:

That all changed as EHR systems began to be broadly adopted.

Suddenly we could embed our clinical content directly into the EHR systems so that it could become a part of the workflow of ordering an image

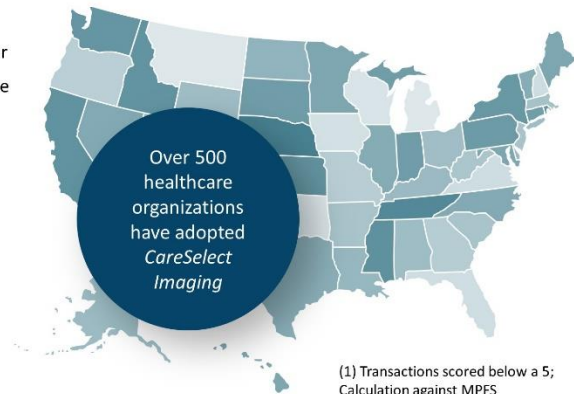
Early in this decade, we started a process of converting this content from the PDF style documents you see on the right into a database of clinical content that can be integrated directly into an Electronic Health Record Ordering System.

And we also set up a national registry on the back-end so that all orders are captured for reimbursement reporting to CMS, for your quality improvement work and for research at a local and national level.

Slide 27:

National Adoption of *CareSelect*® *Imaging* / *ACR Select*®

- The preferred solution by EHR vendors has integrations with every major EHR
- Generates more than 100 million decision support sessions per year
- Across these transactions, the registry of transactions includes more than \$4B in inappropriate imaging⁽¹⁾
- We expect the transaction numbers to rise significantly:
 - Interaction with CDS becomes mandatory in 2020 for advanced imaging for Medicare
 - Additional use cases such as:
 - Accountable care (i.e., risk sharing) increases the imperative to order appropriate imaging
 - CDS can help in the Emergency Department, where payors have dared not mandate prior authorization
 - Private payor adoption of “gold card” plans where CDS supplants part or all of the prior authorization process



Last updated August 30, 2019

American College of Radiology

Notes on Slide 27:

CDS for appropriate imaging orders has seen strong growth in the time since PAMA was passed. *CareSelect*® *Imaging* / *ACR Select*® is the preferred solution by EHR vendors and has integrations with every major HER

It generates more than 100 million decision support sessions per year

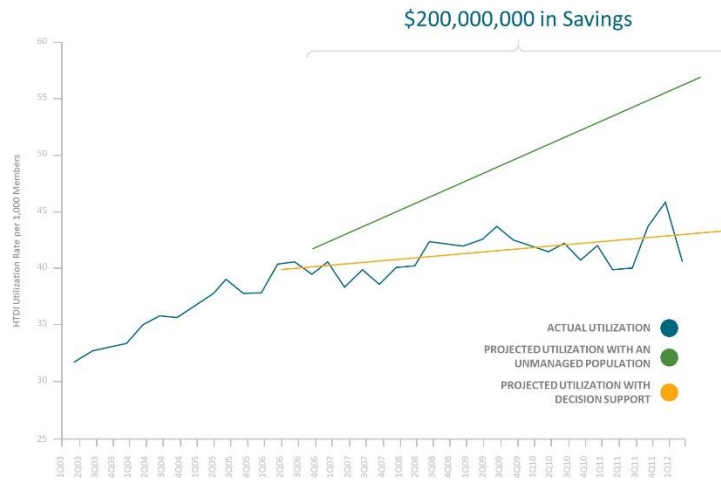
Across these transactions, the registry of transactions includes more than \$4B in inappropriate imaging⁽¹⁾

We expect these numbers to rise significantly for a few reasons:

- Interaction with CDS becomes mandatory in 2020 for advanced imaging for Medicare
- Additional use cases such as
 - Accountable care (i.e., risk sharing) increases the imperative to order appropriate imaging
 - CDS can help in the Emergency Department, where payors have dared not mandate prior authorization
 - Private payor adoption of “gold card”-type plans where CDS replaces part or all of a prior authorization process

Slide 28:

Case Study on Utilization Management: Clinical Decision Support in Minnesota



28 Last updated August 30, 2019

American College of Radiology

Notes on Slide 28:

One great case study about the use of decision support for ordering diagnostic images is from Minnesota.

This study was one of the key pieces of evidence that helped sway Congress and the President enact PAMA in 2014.

Back in 2006 they were projecting that by 2012 the MN imaging utilization rate was going to rise from just over 40 studies per 1000 members to almost 56 studies per 1000. (That's the green line in this graph.)

But with clinical decision support, this growth was largely halted.

The yellow line in this graph is the revised projected growth with CDS.

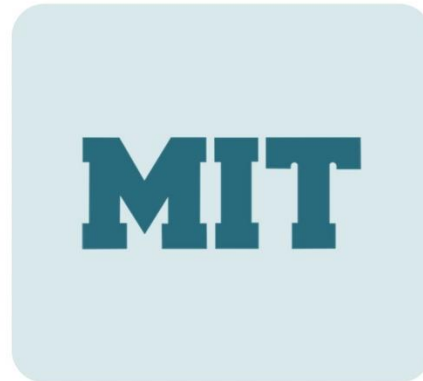
And the yearly actuals are the blue line.

This has translated into a savings of *over \$200 million* to payors and patients over a six year period, which doesn't even reflect the improvements in patient care that come from skipping unnecessary imaging.

Case Study on Utilization Management: Aurora Health Care

The Intervention

- The first large-scale (3500+ healthcare providers), randomized trial of the impact of CDS on high-cost imaging conducted by MIT researchers
- Adding a CDS-driven alert for an ordering provider flagging a targeted (i.e. likely inappropriate), high-cost imaging order



Doyle J, Abraham S, Feeney L, Reimer S, Finkelstein A (2019) Clinical decision support for high-cost imaging: A randomized clinical trial. PLoS ONE 14(3): e0213373.

Notes on Slide 29:

Aurora Health Care in Wisconsin teamed up with a healthcare economics at MIT (who happens to be a McArthur genius fellow) to do the first large-scale (3500+ healthcare providers), randomized trial of the impact of CDS on high-cost imaging conducted.

This was an important step forward in evidence-based effectiveness research for CDS

Case Study on Utilization Management: Aurora Health Care



The Impact

- CDS reduced those targeted imaging orders by a statistically significant 6%

Doyle J, Abraham S, Feeney L, Reimer S, Finkelstein A (2019) Clinical decision support for high-cost imaging: A randomized clinical trial. PLoS ONE 14(3): e0213373.

Notes on Slide 30:

What they found was that for the high-cost orders they targeted that were known to have high levels of inappropriate ordering, by using CDS to call that out to the ordering clinician in real time, they were able to reduce the inappropriate orders by 6%!

Case Study on Quality Improvement: University of Virginia

The Intervention

- In 2014, ACR Select was integrated into the electronic health record, though without displaying appropriateness scores in a “silent” mode for 6 months.
- Then, feedback regarding examination appropriateness was “turned on” at order entry for adult patients in the emergency and inpatient settings for 24 months.
- Retrospectively compared the appropriateness scores of imaging tests before and after displaying feedback at order entry and evaluated these data by modality and attending versus trainee status.



J Am Coll Radiol 2018;15:951-957

Notes on Slide 31:

Case Study on Quality Improvement: University of Virginia



J Am Coll Radiol 2018;15:951-957

The Impact

- After implementation of a commercially available decision support tool integrated into the electronic health record, **there was a significant improvement in imaging study appropriateness scores, more pronounced in studies ordered by trainees.**
- After feedback, **the relative frequency of low utility studies decreased to 5.4% from 11%, and the relative frequency of indicated studies increased to 82% from 64.5%.**
- **This was most pronounced in trainees** for whom
 - the percentage of low utility studies decreased from 10.8% (95% confidence interval [CI]: 10.0%, 11.7%) to 4.8% (95% CI: 4.4%, 5.2%) and
 - the percentage of indicated studies increased from 65.6% (95% CI: 64.3%, 66.9%) to 83.7% (83.0%, 84.3%).

Case Study on Quality Improvement: University of Virginia



J Am Coll Radiol 2018;15:951-957

CDS Outcomes	Pre-CDS Intervention ¹	Post-CDS Intervention
Relative frequency of all low utility studies ²	11.0%	5.4%
Relative frequency of all low utility studies ordered by trainees	10.8%	4.8%
Relative frequency of CT low utility studies	7.4%	2.5%
Relative frequency of MRI low utility studies	19.0%	7.4%
Relative frequency of ultrasound low utility studies	11.3%	3.8%
Relative frequency of PET and nuclear medicine low utility studies	15.3%	29.4%

¹ 100-day data from appropriateness scores collected during "before" model at UVA.
² Low utility study represents an order scoring 1 - 3 on the appropriateness scale.

Study published in *J Am Coll Radiol* 2018;15:951-957 / Summary table from *What UVA's experience reveals about the value of CDS*, June 19, 2018 by Erin Lane and Catherine Kosse, https://www.advisory.com/research/imaging-performance-partnership/the-reading-room/2018/06/uva_cds

Notes on Slide 33:

Case Study on Quality Improvement: Mount Sinai Hospital

The Intervention

- Hospital implemented CDS for CT and MRI orders in the emergency department with scores based on the American College of Radiology's Appropriateness Criteria (range, 1–9; higher scores represent more-appropriate orders).
- Data on CT and MRI orders from April 2013 through June 2016 were categorized as pre-CDS or baseline, post-CDS period 1 (i.e., intervention with active feedback for scores of ≤ 4), and post-CDS period 2 (i.e., intervention with active feedback for scores of ≤ 6).



AJR 2019; 212:859–866

Notes on Slide 34:

Case Study on Quality Improvement: Mount Sinai Hospital



AJR 2019; 212:859–866

The Impact

- **Implementation of active CDS increased overall scores of CT and MRI orders.** (However, there was no significant difference in effect on scores between house staff)
- Mean scores were 6.2, 6.2, and 6.7 in the pre-CDS, post-CDS 1, and post- CDS 2 periods, respectively ($p < 0.05$).
- In the segmented regression analysis, mean scores significantly ($p < 0.05$) increased when comparing pre-CDS versus post-CDS 2 periods for both house staff (baseline increase, 0.41; 95% CI, 0.17–0.64) and non–house staff (baseline increase, 0.58; 95% CI, 0.34–0.81), showing no differences in effect between the cohorts.
- The generalized linear model showed significantly higher scores, particularly in the post-CDS 2 period compared with the pre-CDS period (0.44 increase in scores; $p < 0.05$).

Notes on Slide 35:

Slide 36:



Notes on Slide 36:

So this is really your last chance to get on the CDS boat if you want to help drive the boat instead of just being a passenger.

CDS will go much, much better in your healthcare system if you get involved.

Frankly, you might get blamed if your referring providers don't like it.

We want this tool to be helpful to physicians and seen as a welcome replacement to prior authorization.

And we certainly don't want it to be seen as a new roadblock to the ordering of necessary imaging.



What's in it for radiologists?

- The right thing for our patients
- Opportunity for leadership
- In fits and spurts, the shift from volume-to-value is happening
- Do well by doing good

Notes on Slide 37:

So what's in this for we radiologists?

Right for the patient/care

- Are you sick of reading studies that never should have been ordered or could have been so much more useful if they had been ordered differently?

Opportunity for leadership

- We know so much about patient care and how the healthcare system works
- Our broad view across all specialties, everyone needs diagnosis and tracking

In fits and spurts, the shift from volume-to-value is happening

- Be in the room where it happens
- Based on the value we bring from stepping up, be compensated for this value

“Do Well By Doing Good”

- We will see the impact of that both Nationally and Locally

Common Objections to CDS

“The AUC program is just another example of intrusive government regulations that actually subtract value instead of adding it”

- Time-consuming documentation processes for already overloaded referring physicians
- More alert fatigue from the EHR
- Not integrated with QPP/MACRA
- Is the AUC program is more costly to administer than the potential savings it could generate?
- The law is financially advantageous to the developers of the CDSMs, which house and sell the AUC tools, at the expense of clinicians who order advanced diagnostic imaging tests
- All of this won't actually result in better or more cost effective patient care



Citation: <https://www.neurosurgeryblog.org/2018/01/09/unnecessary-regulatory-burden-appropriate-use-criteria-for-advanced-diagnostic-imaging/>

Notes on Slide 38:

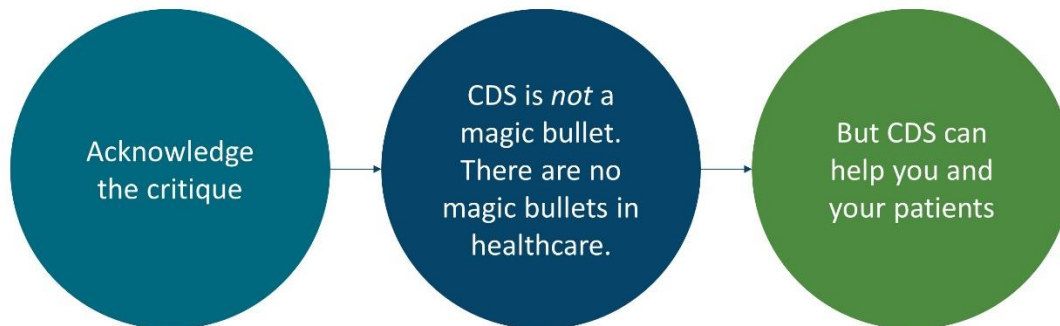
It's very likely that you will hear objections to CDS from referring physicians. And I want to be clear, there is merit to some of the points that they raise. CDS is not a silver bullet or a panacea.

Here are some of the commonly heard points:

- Time-consuming documentation processes for already overloaded referring physicians
- Not integrated with QPP/MACRA
- Is the AUC program is more costly to administer than the potential savings it could generate?
- The law is financially advantageous to the developers of the CDSMs, which house and sell the AUC tools, at the expense of clinicians who order advanced diagnostic imaging tests
- All of this won't actually result in better or more cost effective patient care

In short, critics say that the AUC program is just another example of intrusive government regulations that actually subtract value instead of adding it.

How do we respond to common objections?



Notes on Slide 39:

So the response to this is actually pretty simple.

First, you can acknowledge the critique. While reasonable people can disagree, the critics to raise some reasonable points.

But rather than reply to those objections line by line, it might be more effective to say:

- CDS is *not* a magic bullet. There are no magic bullets in healthcare.
- But CDS can help you and your patients. The process for ordering images is broken and everyone knows it.

How do we respond to common objections?

**“Democracy is the worst form of government,
except for all those other forms that have been tried.”**

Sir Winston Churchill

- *At a bare minimum*, CDS is better than the alternatives
- Would an ordering physician rather add a few clicks to his/her workflow or wait on the phone for extended periods of time to speak to an “expert” at an RBM?

Notes on Slide 40:

- So we can add a few clicks to your EHR workflow, or you can start handling prior authorization calls for all of your Medicare patients.
- Because that’s where things were headed before the ACR stepped in to propose CDS as an alternative to prior authorization.

It’s sort of like the old expression, “Democracy is the worst form of government, except for all those other forms that have been tried.”

How do we respond to common objections?

Gives you a tool to communicate with a patient why an order they want is inappropriate.

- With very few minutes to allocate to each patient, it's easy to just do the order, which we know is not necessarily the right thing
- Stop getting dinged on patient satisfaction surveys (and compensation) for doing the right thing!

Notes on Slide 41:

Also, we all have patients who really want a scan, even though you know there is no benefit to it.

CDS gives you a tool to communicate with a patient why an order they want is inappropriate. And maybe then you can stop getting dinged on patient satisfaction surveys (and compensation) for doing the right thing!

How do we respond to common objections?

Clinical documentation of appropriateness as an alternative to defensive medicine

- Why patients should *not* have a head CT for mild traumatic brain injury

Notes on Slide 42:

Also, clinical documentation of appropriateness is an alternative to defensive medicine.

If the EHR documents that it advised you not to order the head CT for the patient who bumped their head but has no symptoms, then that's something that can help you in a malpractice suit.

And I should note that there is an exception to consulting CDS in the case of an emergent case, so CDS will not stand in the way of physician judgement in situation where there is literally no time to waste in diagnosis.

How do we respond to common objections?

**Plus... We can make imaging much more effective
(which is why we went into medicine in the first place)**

- We have an extensive, high-quality base of evidence on what is the best study to order when.
- Let's use it to...
 - Figure out sooner what's going on with our patients
 - Use healthcare resources and dollars on the things that have impact!

Notes on Slide 43:

We have an extensive, high-quality base of evidence on what is the best study to order when... let's use it.

Then we can figure out what's going on with our patients sooner and help them get better. Isn't that why we all went into medicine in the first place?

How can radiologists ease adoption for referring physicians?

- The world is run by those who show up!
- Listen to their concerns, work through their issues and generally be a partner
- Plan an optimal rollout
- Develop a communications and change management plan (mass outreach *and* one-on-one)
 - Like anything in informatics and healthcare quality, CDS is a just a tool. Change management and communication are how we make the tool a success.
- All healthcare is local
 - Customize the tools, EHR workflow and logic to meet local needs
- CMS reporting



Notes on Slide 44:

So how can we step up?

How can radiologists ease adoption for referring physicians?

The answer isn't rocket science. It just takes good, patient work.

Basically, the world is run by those who show up!

Listen to their concerns, work through their issues and generally be a partner!

Plan optimal rollout

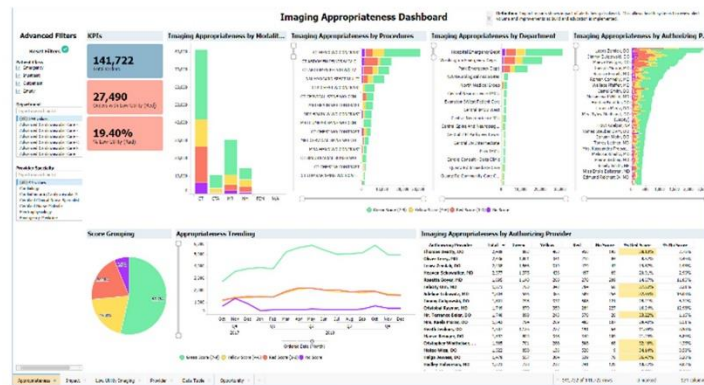
Communications plan (mass and one-on-one)

All healthcare is local!

Customize the tools, EHR workflow and logic to meet local needs

Help with CMS reporting to make sure it goes smoothly

How can radiologists ease adoption for referring physicians?



De-identified report courtesy of Grand Traverse Radiology.

Notes on Slide 45:

This is an example of a QI dashboard that a radiology practice put together to help them work with ordering providers to improve the appropriateness of their imaging.

The Next CDS Frontier is Private Payers: Five Variations of CDS supplanting Prior Authorization



1. Gold Card with No Notification

Providers ordering with CareSelect Imaging are excluded from prior authorization requirements with no reporting requirements. This is usually when the health system or physician group is 100% at risk.

Notes on Slide 46:

So after Medicare, the next big frontier for CDS is when providers and other payors like Blue Cross, Aetna and state Medicaid programs enter into arrangements where CDS can supplant prior authorization as the way to control utilization and improve healthcare outcomes.

There's a number of different flavors of these collaborations that we've seen.

The first version of this is "Gold Card with no Notification" for situations when the providers are 100% at risk. In those cases, the payors basically know the providers are using CDS and trust them to do the right thing with appropriate imaging because it's clearly in their financial self-interest.

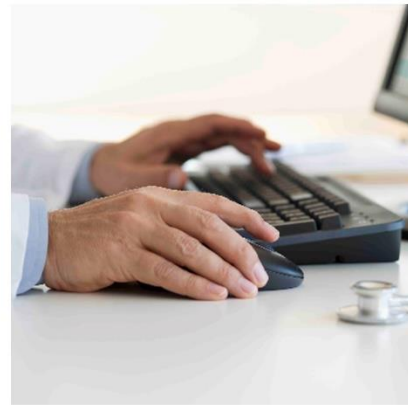
The common denominator between the next 4 variants is that the providers regularly share data with the payors on how it's going, so that the payors see demonstrated ROI and value from the use of CDS. And that sharing of data also puts a very healthy accountability on the providers that drives behaviors that help our patients in the end by aligning incentives to ensure appropriate imaging for our patients.

The Next CDS Frontier is Private Payers: Five Variations of CDS supplanting Prior Authorization

2. Gold Card with Reporting Requirements

Providers ordering with CareSelect Imaging are excluded from prior authorization requirements. The health system shares CDS metrics with the health plan.

- The Wisconsin Medicaid (BadgerCare) Radiology Imaging Exemption for CT and MRI uses this approach.
- Some of the data that may be shared included the distribution of orders by utility range (%) and percentage of orders that did not receive a score metrics to the health plan.
- In other cases, the health system shares detailed order and appropriate score information at a order level. Some groups include the Clinical Decision Support Number (CDSN) as a proxy for the authorization number on claims. We can embed the appropriateness score (0-9) in the CDSN so the payer can know the score of the imaging exam as part of the claims process.



Notes on Slide 47:

The second variant is “Gold Card with Reporting Requirements.” In this case, as long as a provider consults CDS, they can bypass any prior authorization. They do share data about this with the payors.

Slide 48:

The Next CDS Frontier is Private Payers: Five Variations of CDS supplanting Prior Authorization



3. Gold Card with Threshold

For providers ordering with CareSelect Imaging, if the appropriateness score is high enough, the referral is auto-approved with no notification to the payer. If the score is below a threshold, then the standard authorization process is required. The health system shares CDS metrics with the health plan.

Notes on Slide 48:

The third variant is “Gold Card with Threshold” where orders are auto approved if the CDS indicates that the exam meets a certain level of appropriateness. If the order does not, then the order enters the Prior Authorization process.

The Next CDS Frontier is Private Payers: Five Variations of CDS supplanting Prior Authorization

Notification:
Order for image study

1

4. Notifications for all Services

Payers require notification for services often via the existing portal but will not deny services via authorization. Health system may be required to include the Notification number on claims. The health system shares CDS metrics with the health plan.



Notes on Slide 49:

In the fourth variant, the provider still has to notify the payor that they are issuing an order for an imaging study, but the payor will let that sail through as long as the CDS consult is properly documented.

The Next CDS Frontier is Private Payers: Five Variations of CDS supplanting Prior Authorization



5. Implementing an electronic prior authorization program around the CDS

Providers send the appropriateness score on the authorization request for accelerated approval or reduction in the required clinical documentation. Workflow is implemented using a 278R with the appropriateness score (0-9) in an agreed upon field. The payer or RBM automatically approves the authorization or requests addl. clinical information depending on score and study. The health system shares CDS metrics with the health plan.

Notes on Slide 50:

In the fifth and final version, CDS basically becomes part of the prior authorization process, but a CDS order that is properly done should be auto approved, or the back-and-forth process to get follow-up information is streamlined so that it takes less effort on the part of the provider and the approval happens on a much faster timeline than traditional prior authorization.

Early CDS Collaborations between Private Payors and Providers

DuPont Medical Center

- Mid-sized academic health system with affiliated health plan, Logan Health Plan
- DuPont plans to share CDS data with Logan Health Plan to demonstrate imaging utilization management and negotiate to bypass preauthorization
- DuPont will then bring data from that partnership to other commercial payers in order to negotiate similar contracts

Virginia Mason Medical Center

- 336-bed acute care hospital with 460-physician employed medical group based in Seattle, Washington
- Virginia Mason gathered input from commercial payers early in their CDS planning stages to gain buy-in and focus on the highest-value exams
- In 2005, leaders selected first CDS targets; providers could not order against guidelines without consulting a member of the multidisciplinary team that created and vetted guidelines
- Virginia Mason now requires providers to use CDS for all advanced imaging exams for all payers, except for certain low-volume specialty studies, particularly studies designed for preoperative planning

From The Advisory Board's Imaging Performance Partnership's *Playbook for Implementing Clinical Decision Support*, 2015.

Notes on Slide 51:

These are two early case studies of CDS collaborations between providers and payors: DuPont Medical Center and Virginia Mason Medical Center

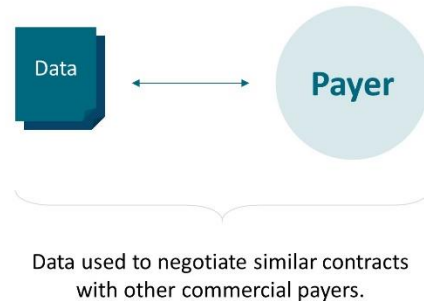
One common denominator for both of these is that there was a pilot project with a single payor, and once they built up data showing the ROI of CDS, they were able negotiate similar deals with additional private payors.

Slide 52:

Case Study on Accountable Care: Brigham and Women's Hospital (Partners Healthcare) & Blue Cross

The Intervention

- The provider proposed to payer that instead of using prior authorization with a radiology benefits management firm, they could better manage utilization with Clinical Decision Support
- The provider and payer agreed to a shared risk/shared reward arrangement.
- Provider data is continually shared with the payer, and this data was used to negotiate similar contracts with other commercial payers.



The American Journal of Medicine (2013) 126, 687-692

Notes on Slide 52:

In Massachusetts, Brigham and Women's Hospital had been approached by Blue Cross about implementing prior authorization for imaging. They already had CDS in place at the time and were able to shift the conversation to a CDS-based solution, which has worked very well.

Brigham and Women's even shares some of the savings not just with Blue Cross, but also with the ordering physicians. So it's a win-win-win for everyone involved.

Slide 53:

Case Study on Accountable Care: Brigham and Women's Hospital (Partners Healthcare) & Blue Cross

12%

sustained reduction in
high-cost imaging intensity
over the 5-year period

The Impact

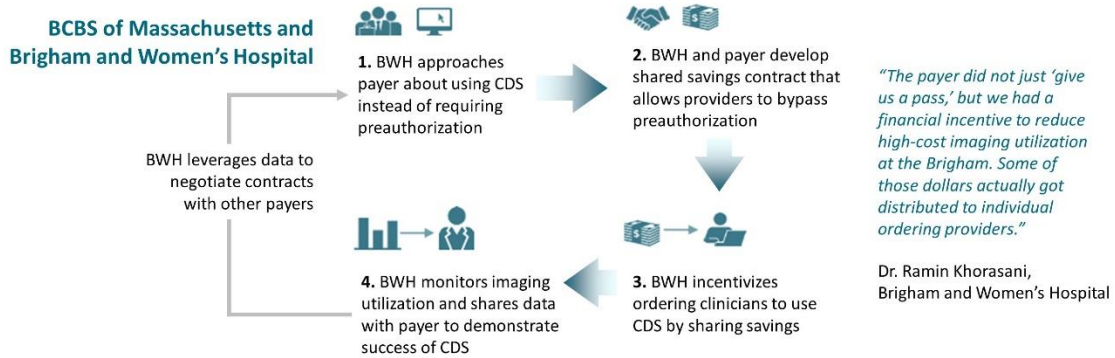
- In 1.8 million patient-months from January 2004 to December 2009, there was a 12.0% sustained reduction in high-cost imaging intensity over the 5-year period ($P < .001$).
- The number of CT studies performed decreased from 17.5 per 1000 patient-months to 14.5 ($P < .01$)
- Nuclear cardiology examinations decreased from 2.4 to 1.4 ($P < .01$) per 1000 patient-months.
- The MRI rate remained unchanged at 11 studies per 1000 patient-months.

The American Journal of Medicine (2013) 126, 687-692

Notes on Slide 53:

What they found over a 5-year period was that there was a 12% sustained reduction in high-cost imaging intensity over that 5-year period.

Early CDS Collaborations between Private Payors and Providers, con't



From The Advisory Board's Imaging Performance Partnership's *Playbook for Implementing Clinical Decision Support*, 2015.

Notes on Slide 54:

We don't need to look at this now, but the Advisory Board put together this great diagram to illustrate how this all worked.

Slide 55:



An Imaging 3.0 Case Study - July 31, 2018

Ahead of the Curve

Early adopters of Clinical Decision Support deliver more appropriate imaging and help ordering physicians prepare for PAMA legislation's impact on reimbursement.

These slides are disseminated to our respective members as a partnership of:



Notes on Slide 55:

So here's a case study of a successful CDS implementation.

Slide 56:

CDS Case Study Video



If you experience troubles playing the video, please copy and paste the following URL into your browser:
<https://www.youtube.com/watch?v=kirrgYcl6Ro&feature=youtu.be>

Notes on Slide 56:

Watch the video

Case Study Overview: An ACR Imaging 3.0 Case Study



Ryan K. Lee, MD, MBA, section chief of neuroradiology, is spearheading an incremental pilot project to integrate CDS into the EMR at Einstein Healthcare Network in Philadelphia.

Alignment

- Radiology leadership saw CDS as a way to improve the quality of imaging ordering, as well as prepare for future reimbursement requirements (i.e., PAMA)

Socialization with Key Stakeholders

- Radiology leadership approached leaders of other specialties at the hospital, like ED, to see if they would take part in the pilot.

Iterative Pilot Testing

- Prepared video to help explain CDS to new recruits
- After a first round of testing, expanded to more departments and more physicians within each department
- Review data on appropriate ordering before and after

Solicit and Incorporate Feedback

- Collaborated with vendor of CareSelect to incorporate PECARN guidelines as a supplement to AC guidelines in CDS system

Notes on Slide 57:

Discussion Topics for Your Team

- 1 Who is driving the CDS rollout in your organization ahead of the 2020 PAMA deadline? Are there radiologists involved in or leading the team? Why or why not?
- 2 Will your organization's CDS rollout happen in stages, obtaining buy-in and feedback to be incorporated at each stage?
- 3 What clinical guidelines are the highest priority for your ordering physicians? Based on the data, where is the potentially biggest impact from CDS on ordering habits?
- 4 What could impede the success of your organization's CDS rollout? How can those risks be mitigated?

Notes on Slide 58:

How can radiologists ease adoption for referring physicians

R-SCAN®

- **R-SCAN™** (Radiology Support, Communication and Alignment Network) is a collaborative action plan that brings together radiologists and referring clinicians to improve imaging appropriateness.
- **R-SCAN** delivers immediate access to web-based tools and clinical decision support technology to help you optimize imaging care.
- **R-SCAN** is funded through a [CMS Transforming Clinical Practice Initiative grant](#) awarded to the American College of Radiology.
- Radiologists who play a meaningful role in **R-SCAN** can claim MOC Part 4 credit.
- For many topics, referring clinicians can earn CME credits and radiologists can earn SA-CME credits.



Notes on Slide 59:

Slide 60:



Choosing Wisely[®]

An initiative of the ABIM Foundation

[CT for Recurrent Renal Colic](#) - Avoid ordering CT of the abdomen emergency department (ED) patients (age <50) with known histories of kidney stones, or urolithiasis, presenting with symptoms consistent with acute uncomplicated renal colic.

[CTA for Asymptomatic Patient at Low Risk for Coronary Heart Disease](#) - Don't routinely order coronary computed tomography angiography for screening asymptomatic individuals.

[Admission and Pre-op Chest X-ray](#) - Avoid admission or preoperative chest x-rays for ambulatory patients with unremarkable history and physical exam.

[CTA for Pulmonary Embolism](#) - Do not perform chest CT angiography to evaluate for possible pulmonary embolism in patients with a low clinical probability and negative results of a highly sensitive D-dimer assay.

[Adnexal Cyst Follow Up](#) - Do not recommend follow-up imaging for clinically inconsequential adnexal cysts.

[Advanced Imaging for Early Prostate Cancer Staging](#) - Don't perform PET, CT, and radionuclide bone scans in the staging of early prostate cancer at low risk for metastasis.

[Imaging for Low Back Pain](#)
Don't perform advanced imaging (eg, MRI) of the spine within the first 6 weeks in patients with nonspecific acute low back pain in the absence of red flags.

Notes on Slide 60:

R-SCAN has content based on a number of Choosing Wisely topics related to appropriate imaging.

Slide 61:



An initiative of the ABIM Foundation

[CT for Uncomplicated Rhinosinusitis](#)

Don't order sinus CT or indiscriminately prescribe antibiotics for uncomplicated acute rhinosinusitis.

[Imaging for Uncomplicated Headaches](#)

Don't do imaging for uncomplicated headache.

[CT for Minor Pediatric Head Injury](#)

CT scans are not necessary in the immediate evaluation of minor head injuries; clinical observation / Pediatric Emergency Care Applied Research Network criteria should be used to determine whether imaging is indicated.

[CT for Adult Minor Head Trauma](#)

Avoid computer tomography (CT) scans of the head in emergency department patients with minor head injury who are at low risk based on validated decision rules.

[Advanced Imaging for Pediatric Febrile Seizures](#)

Neuroimaging (CT, MRI) is not necessary in a child with simple febrile seizure.

[Incidental Thyroid Nodule Follow-up](#)

Don't recommend ultrasound for incidental thyroid nodule in low-risk patients unless the nodule meets age-based size criteria or has suspicious features.

Notes on Slide 61:

Slide 62:



Notes on Slide 62:

R-SCAN Case Study Video



If you experience troubles playing the video, please copy and paste the following URL into your browser:
<https://youtu.be/wTukDDCN3ww>

Notes on Slide 63:

Case Study Overview: An ACR Imaging 3.0 Case Study



Bryon A. Dickerson, MD, president and executive medical director of Asheville Radiology Associates, and his colleagues have sought to reduce inappropriate imaging and improved quality through their innovative use of R-SCAN.

Alignment

- Approached the local health system to collaborate on R-SCAN
- Engaged key physicians to utilize R-SCAN's free clinical decision support tool to reduce unnecessary imaging exams and prepare for upcoming government regulations.

Thoughtful Implementation

- Took a random sample of patients and then compare image ordering data against R-SCAN's ACR Select CDS tool to find the physicians who were considered outliers (in terms of ordering patterns that reflected unnecessary imaging.)
- Reach out to those providers

Content Localization

- Asheville Radiology was the first radiology group to customize its own R-SCAN topic in order to focus on the unique needs of its rural community, making it easier for referring physicians to participate.

Slide 65:

Additional Resources



ACR Resources for Clinical Decision Support	ACRSelect / CareSelect imaging	R-SCAN
https://www.acr.org/Clinical-Resources/Clinical-Decision-Support	http://nationaldecisionsupport.com/acrselect/	https://rscan.org/

Notes on Slide 65:

Here are links to additional resources from the ACR on the topics we've discussed today.

Slide 66:

Q&A

Notes on Slide 66: