



# Reimbursement of Imaging for Cancer Screening: What Are the New Imaging 3.0 Models That Will Solve Our Problems?

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# The value of imaging

- Improved diagnosis to guide treatment
- Earlier detection
- Reduction in more invasive procedures
- More effective surgical planning











# Patients Imaged Early During Admission Demonstrate Reduced Length of Hospital Stay: A Retrospective Cohort Study of Patients Undergoing Cross-Sectional Imaging


Juan C. Batlle, MD, MBA, Peter F. Hahn, MD, PhD,  
James H. Thrall, MD, Susanna I. Lee, MD, PhD

**Conclusion:** Early imaging with CT, MRI, or nuclear scintigraphy, particularly on the day before or the day of admission, was associated with significantly shorter lengths of stay of inpatients compared with patients who underwent advanced imaging later.

**Key Words:** Utilization, cross-sectional imaging, length of stay, inpatient

*J Am Coll Radiol* 2010;7:269-276. Copyright © 2010 American College of Radiology

## Physicians' Views Of The Relative Importance Of Thirty Medical Innovations

 Expand

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### This Article

Health Aff **September 2006**  
20 no. 5 30-42

[Abstract](#)

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### EXHIBIT 3

#### Mean Response And Ranking Of Physicians' Ratings Of

Rank	Innovation	Mean score <sup>a</sup>
1	MRI and CT scanning	0.878
2	ACE inhibitors	0.767
3	Balloon angioplasty	0.758
4	Statins	0.736
5	Mammography	0.733





This story is part of  
**HEALTH AND WELLNESS**

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depression

Fish may help maintain brain  
volume, function, with age

Measles alert issued for  
California train riders



82



66



1



## Experts weigh risks of CT scans



Chris Gilmer of Greenville Hospital System in South Carolina talks about CT scans. The Greenville, S.C., News

Liv Osby, Greenville (S.C.) News 12:35 p.m. EDT March 21, 2013

*The scans typically deliver about 70 times the radiation of normal X-rays.*





# THE AMERICAN JOURNAL *of* MEDICINE BLOG

*Diabetes/Obesity*

*Cancer*

*Cardiology*

*Commentary*

*Drugs*

*Prevention*

## Diagnostic Imaging: Powerful, Indispensable, and Out of Control

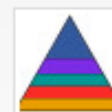
 JANUARY 27, 2012  [1 COMMENT](#)

Reality is never quite as simple as it seems. For all the good that imaging has done, it has come with significant costs: exorbitant financial costs to individual patients and society, and personal health costs to patients through over-diagnosis, over-radiation, and over-treatment.

At issue in any review of the appropriateness of imaging utilization are the various interests

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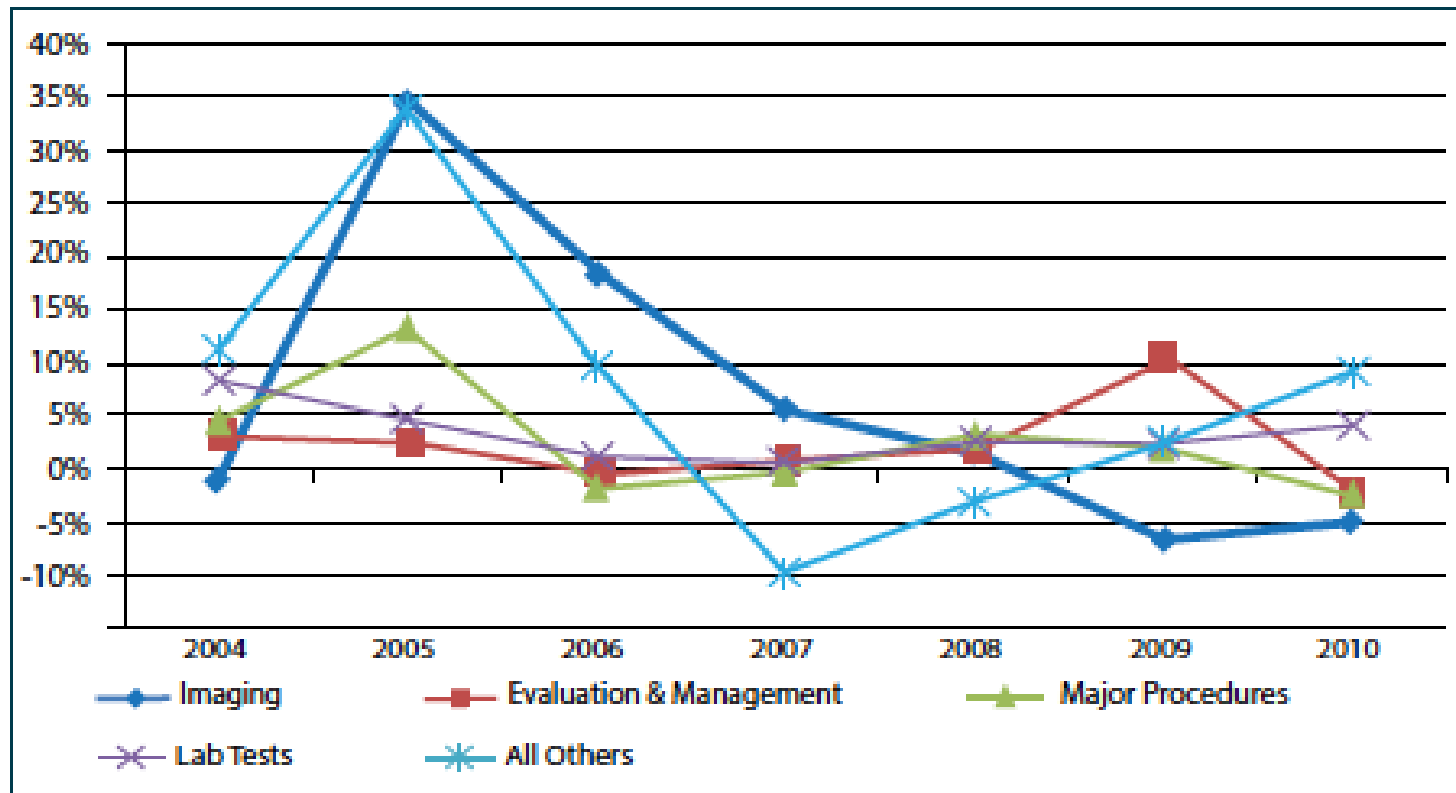
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Radiation Safety in  
Adult Medical Imaging



**Figure 1. Medicare Part B annual rate of growth in assigned services by procedure category.**

Source: Analyses at the Neiman Health Policy Institute using data from the Medicare Physician/Supplier Procedure Summary (PSPS) annual master files 2003 to 2010; the enrollment data from CMS, Medicare & Medicaid Research Review; and the 2011 Statistical Supplement.

# Where is imaging currently used for screening?

- Mammography for breast cancer
- Ultrasound for aortic aneurysm
- Nuchal fold measurement
- CT colonography
- Low dose CT for lung cancer

# How to maximise the value of imaging based screening

- Appropriate patient selection
- Standardise delivery of imaging and reporting
- Standardise follow up according to evidence based guidelines
- Track outcomes and use results to further optimise the program



**Imaging 3.0** is a change process led by the ACR for the field of radiology. It includes a set of technology tools that equip 21st-century radiologists to ensure their key role in evolving health care delivery and payment models—and quality patient care.

# The value of radiologySTS

- Radiologists have been invisible
- Advances in technology and productivity have kept us “in the dark”
- Patients don’t know we exist
- Maybe we haven’t been as welcoming as we should have?
- Risk of commoditization

# Imaging 2.0



**FOCUS ON THE INTERPRETATION**

# Imaging 2.0 – Radiology Culture

StudyList - Windows Internet Explorer

Index List: Unreported Studies

Physicians: All Physicians

Modifiers: All Modifiers

Patient Locations: All Patient Locations

Body Regions: All Body Regions

Work Groups: A

Patient ID	Performed On	Ph...	Procedure Type	Accession Number	Referring Physician	Body Region	Work Group	Patient Location
14-Jan-2011, 15:07:55	MR	MR LUMB SPINE WO CON	00291214	Butcher, William	Spine/L Spine L, W/O...	A	OSIC	
14-Jan-2011, 17:13:30	CT	CT RECX SOFT TIS W/	00291244	Reeves, Russell	Neck/M Spine	A	OSIC	
14-Jan-2011, 17:08:39	CT	CT CHABERELACON	00291245	Reeves, Russell	Abdomen/Chest/Labdo...	A	OSIC	
14-Jan-2011, 17:01:55	MR	MR FOOT 30+	00291267	Kaplan, Heidi				
14-Jan-2011, 17:56:56	MR	MR HEAD WO CONTRAST	00291272	Strong, James				
14-Jan-2011, 18:07:30	MR	MR BRAIN WO CONTRAST	00291271	Strong, James				
14-Jan-2011, 18:12:05	CT	CT HEAD WO CONTRAST	00291289	Walker, Marshall				
14-Jan-2011, 18:13:54	CT	CT HEAD WO CONTRAST	00291289	Walker, Marshall				
14-Jan-2011, 18:21:07	MR	OH-CHEST 1H	00291295	Sullivan, Patrick				
14-Jan-2011, 18:21:40	MR	OH-CHEST 1H	00291302	Park, Bruce				
14-Jan-2011, 18:22:21	MR	OH-CHEST 1H	00291292	Oleary, Auel				
14-Jan-2011, 18:22:52	MR	OH-CHEST 1H	00291300	Oleary, Auel				
14-Jan-2011, 18:29:14	CT	CT HEAD WO CONTRAST	00291304	Post, Steve				
14-Jan-2011, 18:30:00	MR	OH-CHEST 2H	00291301	Harrison, William				
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14-Jan-2011, 18:53:38	MR	OH-CHEST 1H	00291310	Post, Steve				
14-Jan-2011, 18:54:15	MR	OH-CHEST 1H	00291296	Kaplan, Heidi				
14-Jan-2011, 19:12:31	MR	OH-CHEST 1H	00291303	Reeves, Russell				
14-Jan-2011, 19:13:26	MR	OH-CHEST 1H	00291314	Farrar, David				
14-Jan-2011, 19:15:22	MR	OH-CHEST 1H	00291316	Post, Steve				
14-Jan-2011, 19:19:51	MR	MR THOR SPINE WO CON	00291305	Cook, Anne-Laure				
14-Jan-2011, 19:29:32	MR	OH-CHEST 1H	00291317	Kaplan, Heidi				
14-Jan-2011, 19:38:46	MR	OH-CHEST 1H	00291319	Sullivan, Patrick				
14-Jan-2011, 19:56:23	MR	SP-THORACIC SPINE 2V	00291311	Farrar, David				
14-Jan-2011, 19:56:23	MR	SP-L5 SPINE 4+	00291312	Farrar, David				
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14-Jan-2011, 20:10:02	CT	CT-HEAD RELVDS WO DYE	00291320	King, Kaina				
14-Jan-2011, 20:30:20	CT	CT HEAD WO CONTRAST	00291315	Park, Bruce				
14-Jan-2011, 20:33:56	MR	OH-CHEST 1H	00291322	King, Kaina				
14-Jan-2011, 20:42:34	CT	CT-HEAD WO CONTRAST	00291325	Kaplan, Heidi				
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14-Jan-2011, 21:11:17	CT	CT HEAD WO CONTRAST	00291324	Flowers, Samuel				
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14-Jan-2011, 22:54:45	MR	MR THOR SPINE WO CON	00291338	King, Kaina				
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Search returned 68 items

StudyList - Windows Internet Explorer

Index List: Unreported Studies

Physicians: No (filter)

Modifiers: All Modifiers

Patient Locations: All Patient Locations

Body Regions: All Body Regions

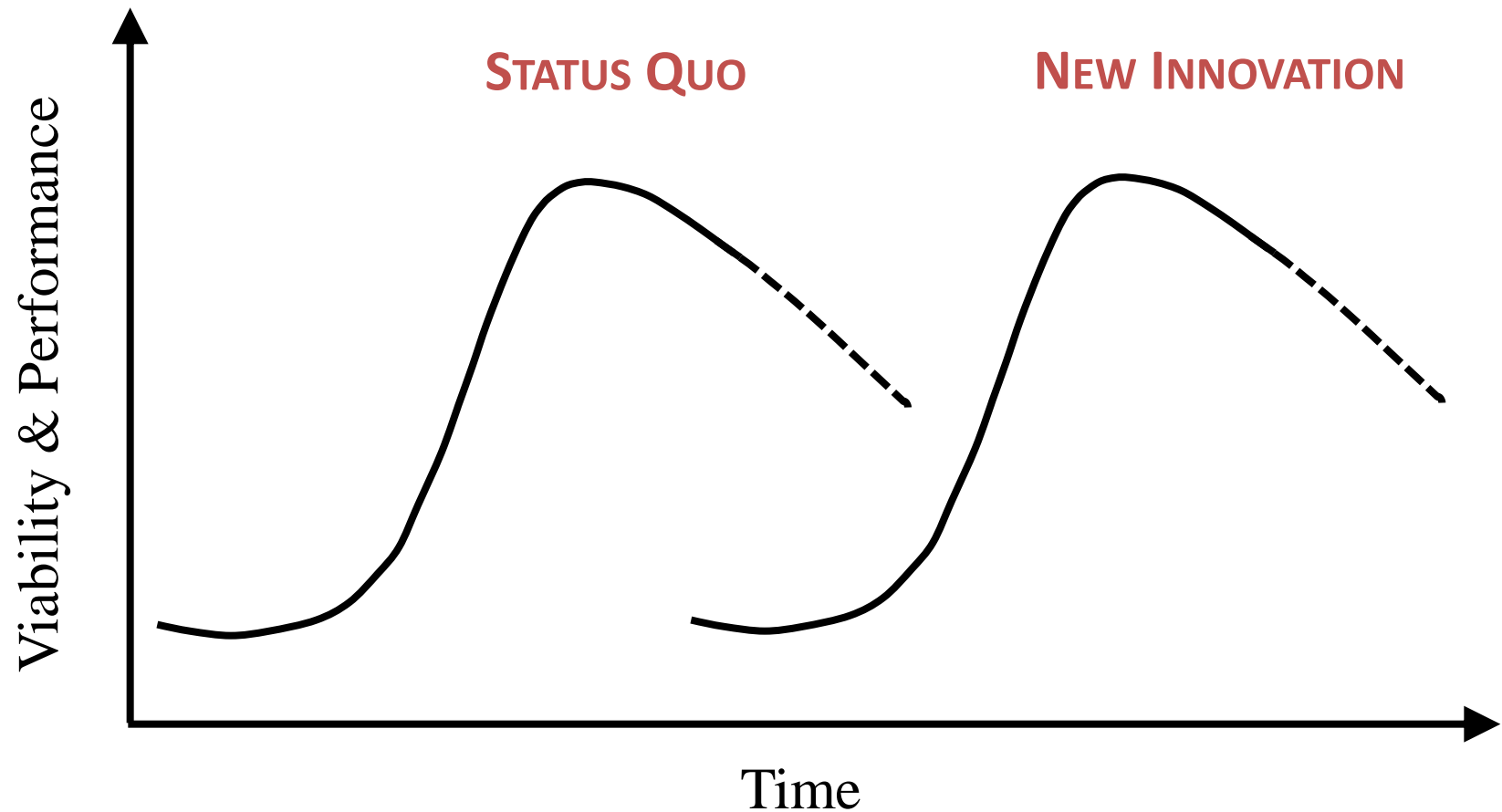
Work Groups: A

Progress	Print	P...	S...	A...	Q...	Patient Full Name	Patient ID	Performed On	Ph...	Procedure Type	Accession Number	Referring Physician
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Open Study Cancel Loading Close Window



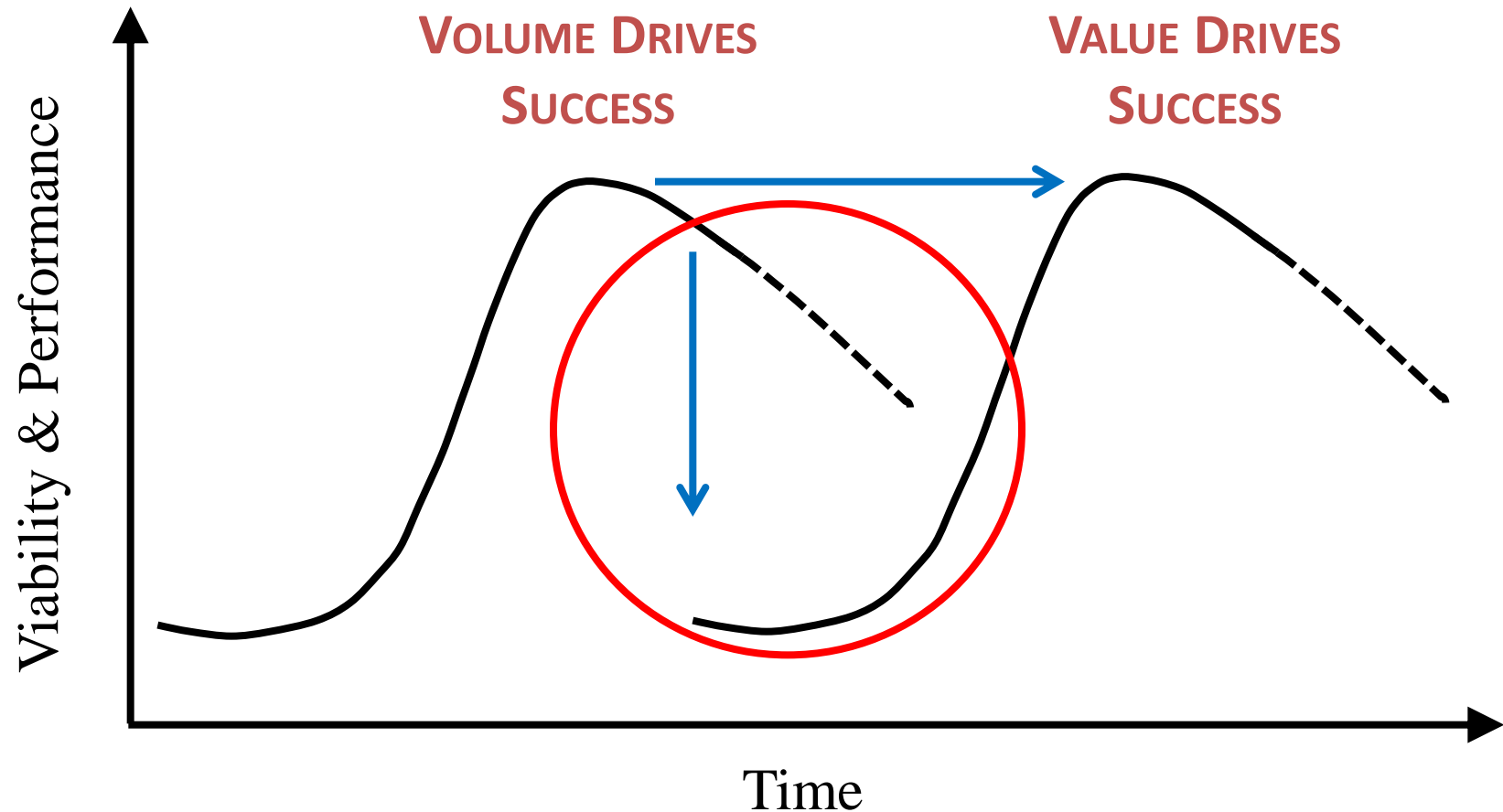
# Innovator's Dilemma



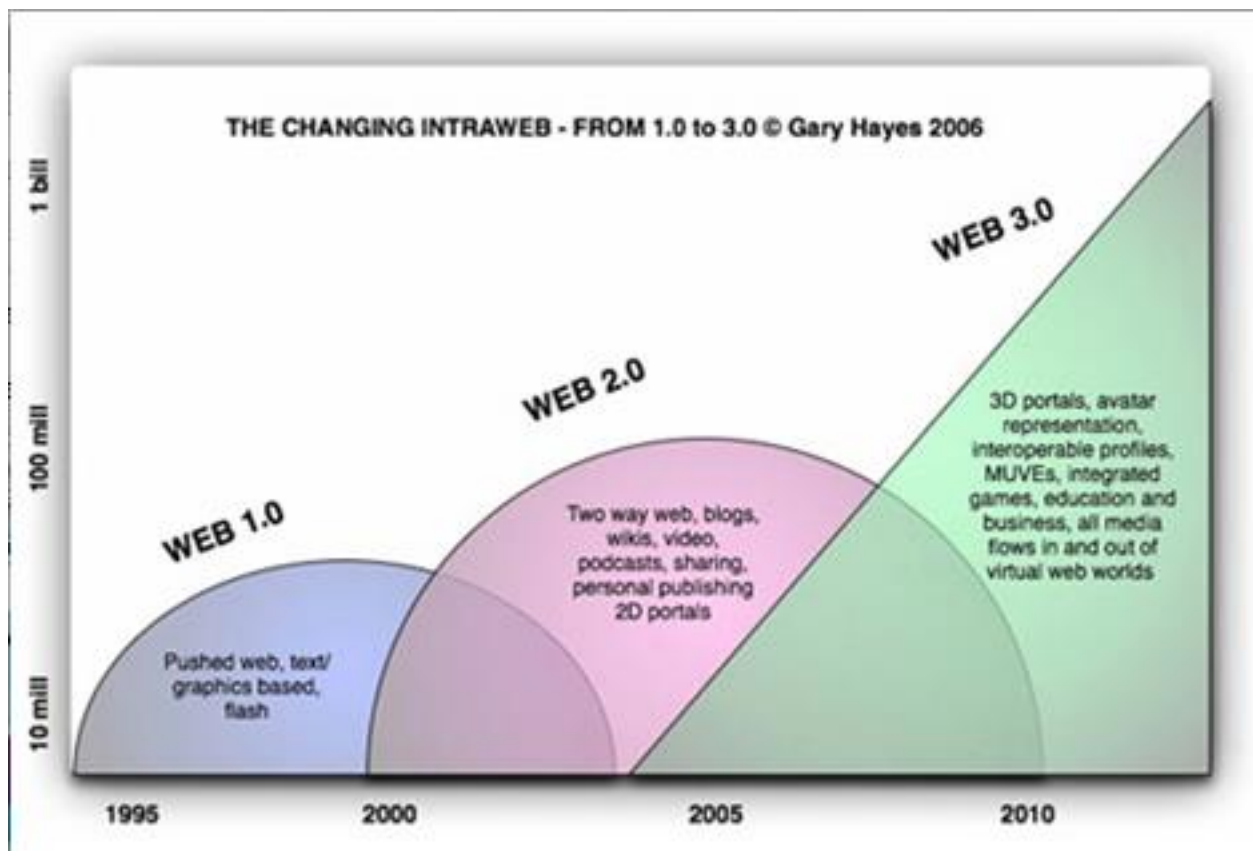
Adapted from James Reinertsen, "Possible or Passable?", 2012.



# Transition to Value Based Imaging Care



Adapted from James Reinertsen, "Possible or Passable?", 2012.



# Medical Imaging



*Imaging 3.0*  
*Evolution in Patient Care*

# Medical Imaging

*Evolution in Patient Care*



A New Kind of Ray

# A New Kind of Ray

## The Early Years

- Sideshows
- Photography
- Medical Applications

**1896 to 1920**



# Medical Imaging

*Evolution in Patient Care*





# IMAGING 1.0

## *Imaging in Medical Care*

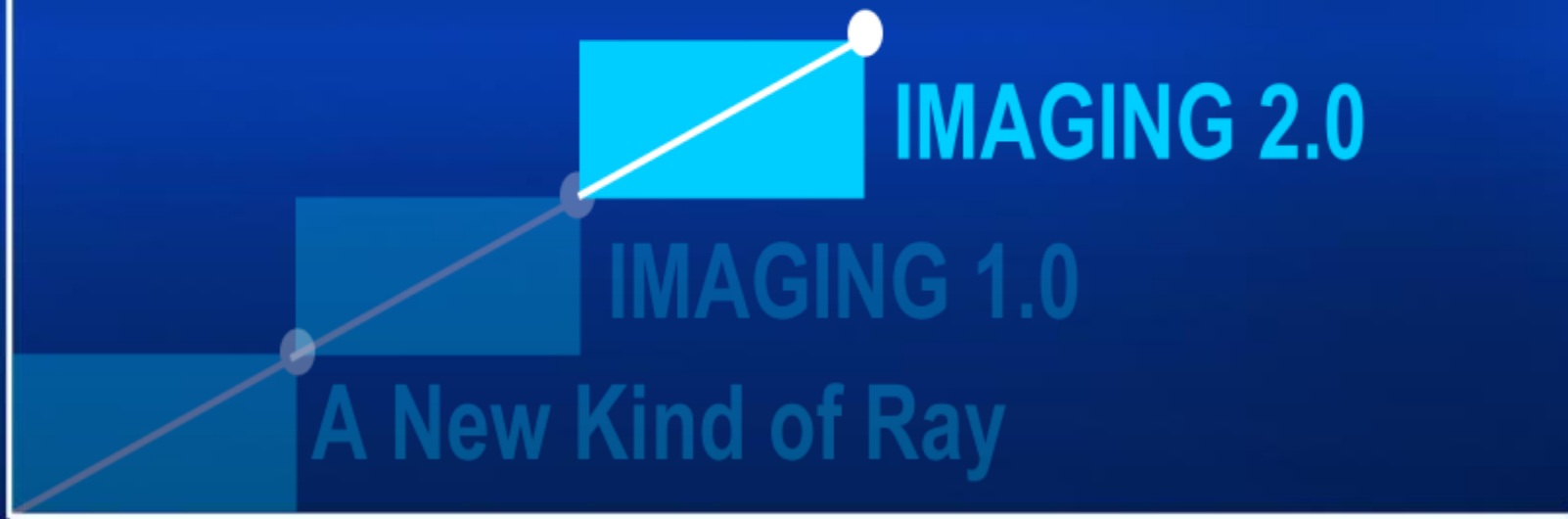
- Physicians
- Contrast Agents
- New Modalities

*1920 to 1990*



# Medical Imaging

*Evolution in Patient Care*



# IMAGING 2.0

## *Technology Explosion*

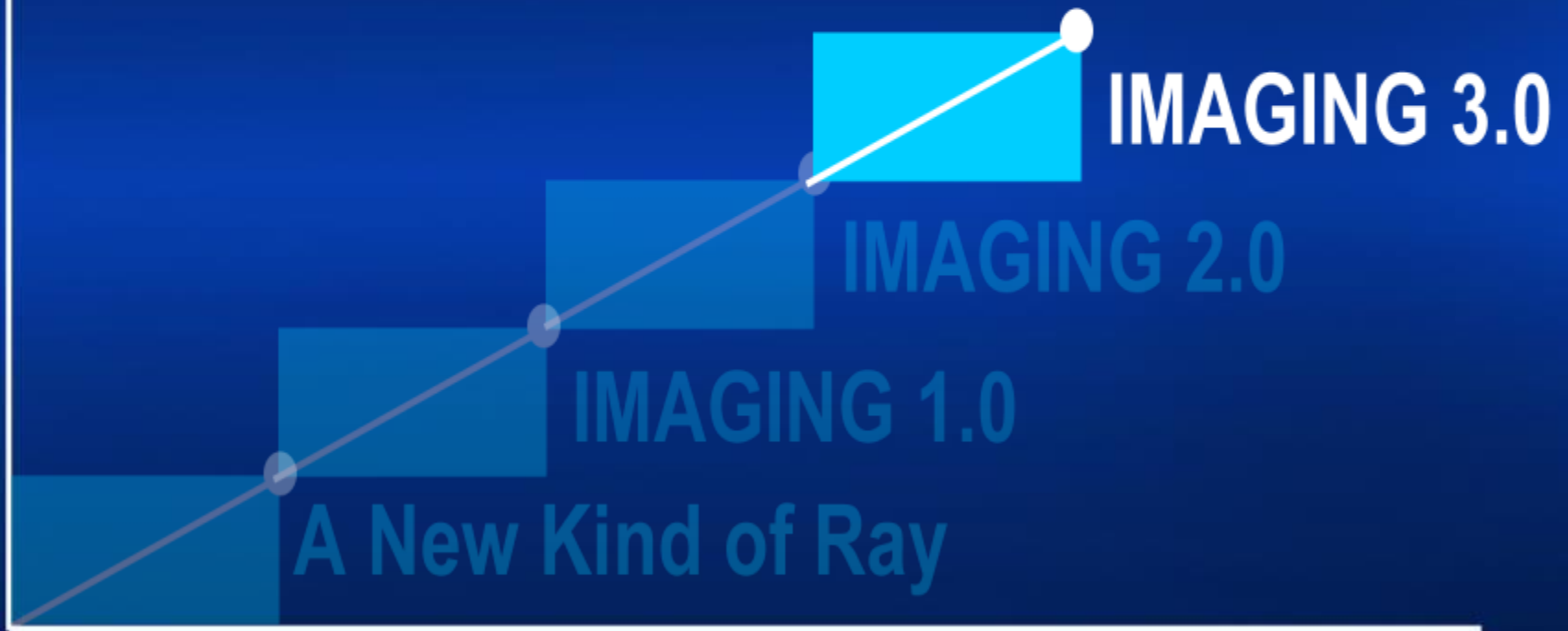
- Evolving Modalities
- PACS
- Knowledge Base
- Consultant to Referring Physicians
- Unprecedented Demand

*1990 to Present*



# Medical Imaging

*Evolution in Patient Care*





# IMAGING 3.0

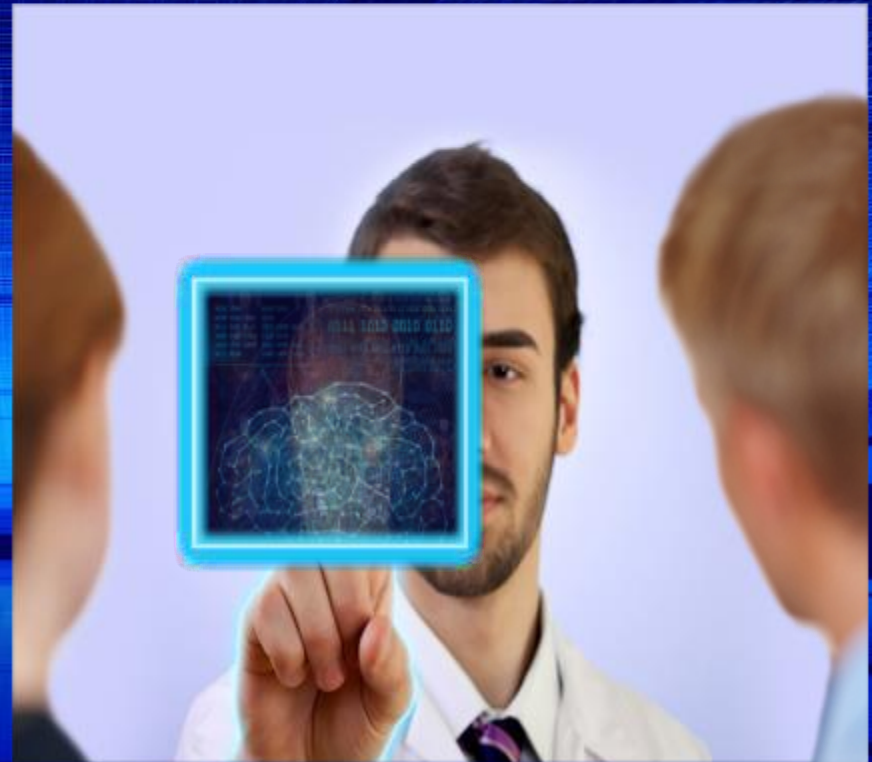


## *Blueprint for High Value Care*

### Beyond Interpretations

- Assuring Appropriateness
- Documenting the Quality and Patient Safety Radiologists Provide
- Actionable Reporting with Evidence-based Follow-up Recommendations
- Empowered Patients

*2013 and Beyond*



# IMAGING 3.0

Satisfaction

Efficiency

Safety

Quality

Appropriateness



# IMAGING 3.0



**Leveraging radiologists' tools and expertise to  
optimize patient care from the time imaging is  
first considered until referring physicians and patients  
fully understand the imaging results and  
recommendations**

# IMAGING 3.0



- **Maximizing Radiologists' Value**
- **Collaborating with Other Physicians to Improve Imaging Care**
- **Empowering Patients**

# Imaging 3.0 – Under the Umbrella



Referring Physician  
Considers Imaging



Imaging  
Acquisition  
& Interpretation



Actionable  
Recommendations For  
The Patient And  
Referring Physician



Imaging History  
Reviewed in PHR



Faculty Accreditation



Decision Support for  
Results Reporting



Appropriateness  
Criteria Consulted



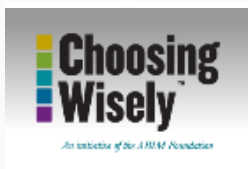
Media Rich  
Actionable Reporting



Board Certified  
Radiologists  
Engage in Lifelong  
Learning  
Through Maintenance  
of Certifications



PQRS



Registry Reporting

# Applying Imaging 3.0 to screening for lung cancer with low dose CT

- Appropriate patient selection
  - Smokers
  - Documentation or administration of smoking cessation counselling
  - Balance overdiagnosis with underdetection
- Standardise delivery of imaging and reporting
  - Accreditation process, optimized protocols
  - Radiologist education
  - Structured reporting like BIRADS
  - Manage incidental findings

# Applying Imaging 3.0 to screening for lung cancer with low dose CT

- Standardise follow up according to evidence based guidelines
  - Minimise potential harms
  - Optimize value to healthcare delivery system and Society
- Track outcomes and use results to further optimise the program
  - Geographic variations
  - Further characterization of lesions

# The Future Of Imaging Care

Today: IMAGING 2.0	Tomorrow: IMAGING 3.0™
Volume-based	Value-based
Transactional	Consultative
Radiologist centered	Patient centered
Interpretation focused	Outcomes focused
Commoditized	Integral
Invisible	Accountable

# Summary

- Imaging 3.0 is a powerful message of change for radiologists
- Screening with imaging embodies the principles of Imaging 3.0
- Imaging 3.0 delivers the highest value imaging care and puts patients at the center of the delivery process