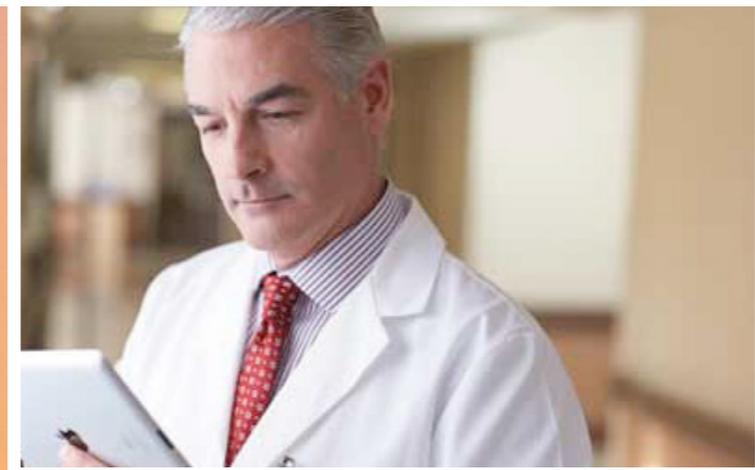
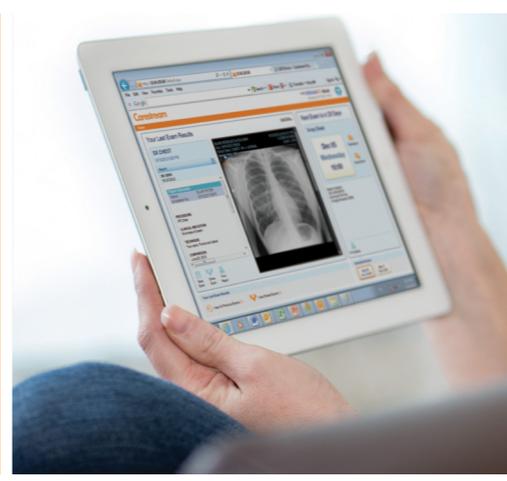




EXTENDED REACH
DO MORE WITH VUE MOTION
& MYVUE

Carestream

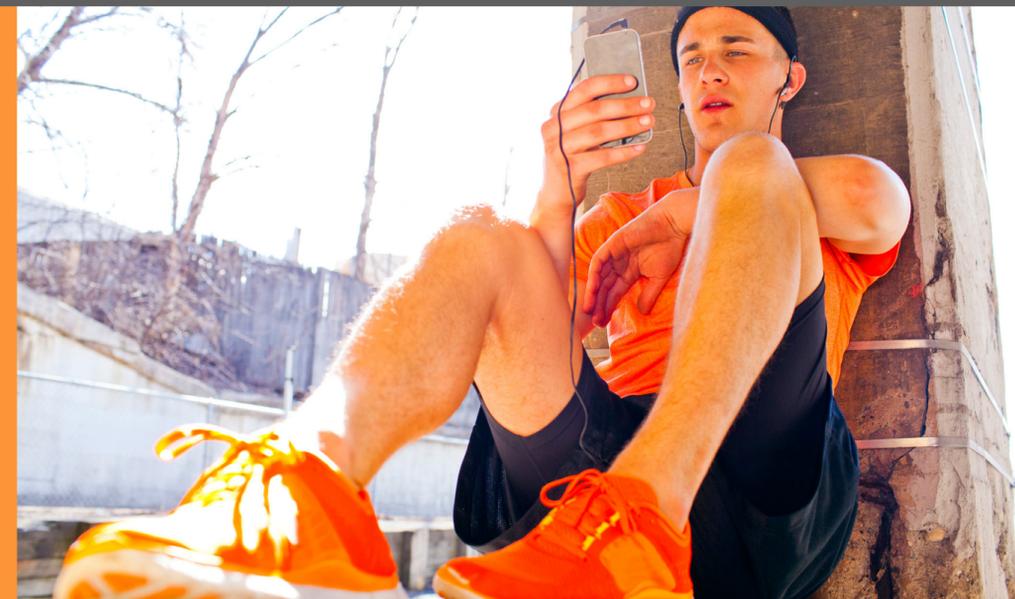


THE PURSUIT OF MORE



EXTENDED REACH

DO MORE WITH VUE MOTION & MYVUE



Increase clinical capabilities enterprise-wide with CARESTREAM Vue Motion

This next-generation solution is a big step forward that helps enable improved workflow and productivity, and an enhanced user experience. A zero footprint viewer, it is designed to allow referring physicians and clinicians to search and filter images and data more efficiently – and to do so on validated mobile devices.

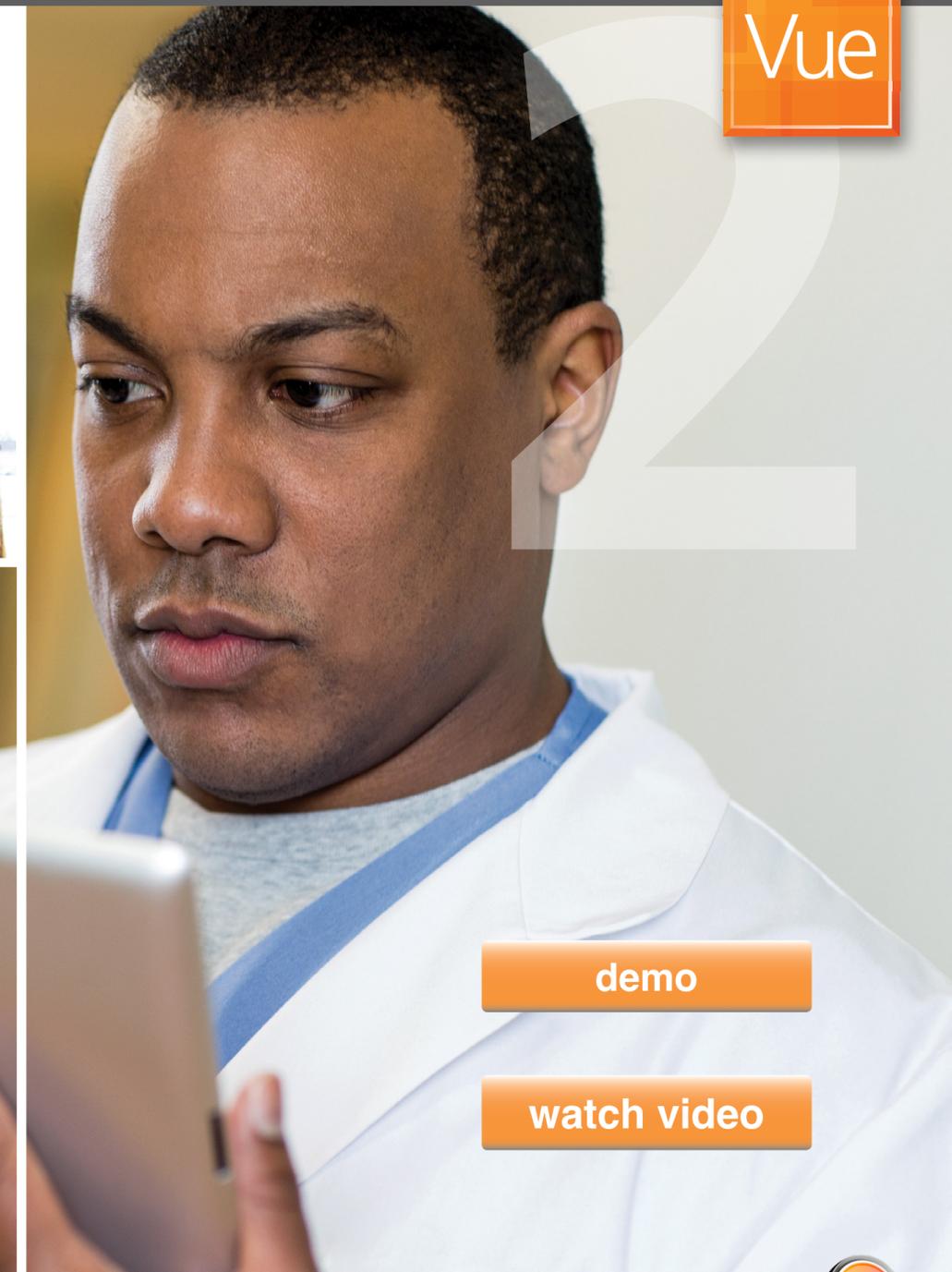
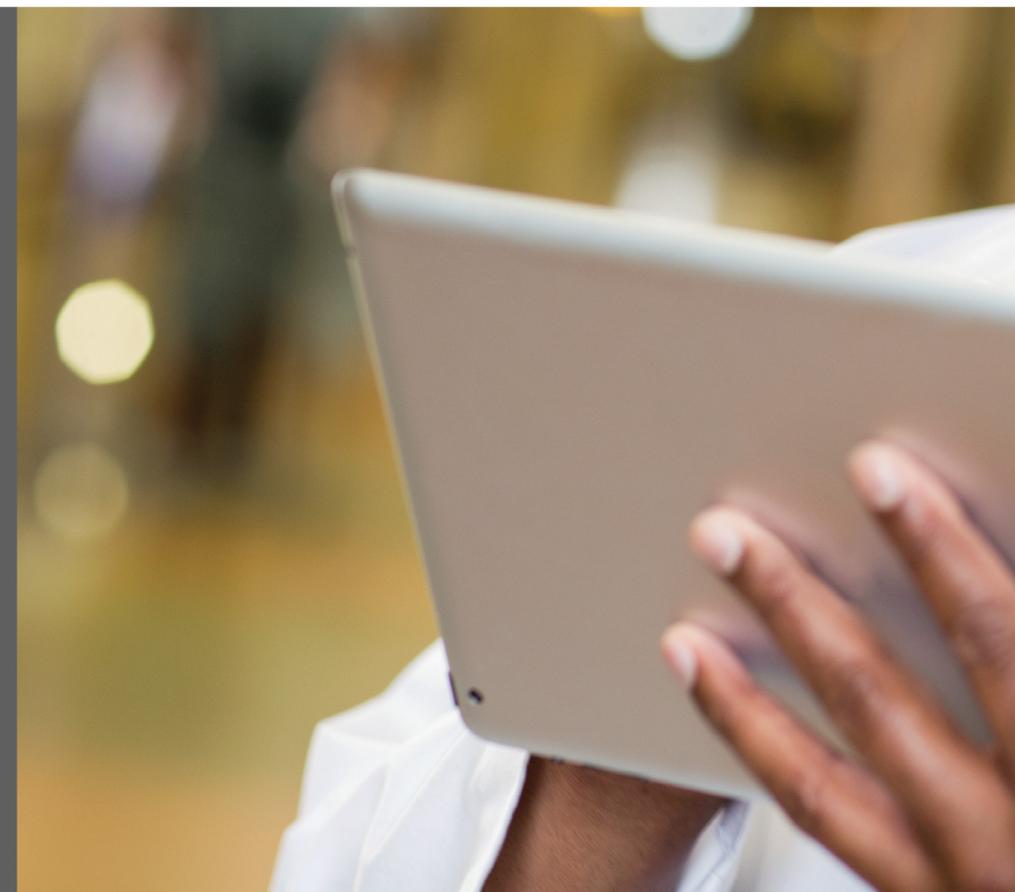
Improving image review, reporting and collaboration across the enterprise, **Vue Motion's** advanced toolset delivers enhanced image manipulation and display capabilities including 3D, bookmarking, and 2x2 display. A single, intuitive user interface that can be installed anywhere, **Vue Motion** offers simple, secure access, and performance on demand.

Improve patient communication

CARESTREAM **MyVue** is a compelling response to the growing demand for patient empowerment, enabling them to access their medical images and data online, and share the information with selected healthcare providers. Carestream's **Vue Motion** platform makes **MyVue** secure and easy for your patients to use, requiring minimal application support.

KEY BENEFITS

- No local installation or download required - runs on a PC or on a validated mobile device with web browser
- Additional image display and manipulation (flip, rotate and zoom studies)
- 3D capabilities: MPR, MIP, volume rendering
- Enhanced functionality: bookmarks (hyperlinks to current and previous studies); 2x2 display for comparison and synchronization of priors or series; sticky notes.
- 64-bit architecture optimizes image processing
- MyVue enables patient inclusion through secure, easy, electronic image access and sharing, and can reduce the time and cost associated with use of CD's or film.



[demo](#)

[watch video](#)

v12 Product is currently a Works-In-Progress



Large Private Health Network Consolidates Clinical Viewing Across Disparate Systems

VUE MOTION

Spire Healthcare, UK, Implements Zero-Footprint Vue Motion Viewer From Carestream Health

Spire Consultants Gain Convenient On-Demand Access To Imaging Data And Patient Information Anytime, Anywhere. Spire Healthcare, the UK's second largest provider of private healthcare, has implemented Carestream's Vue Motion zero-footprint viewer to enable its clinicians to view patient images on Apple iPad mobile devices. As this independent viewer is PACS-agnostic, clinicians across Spire can securely view PACS images from all of Spire's 38 locations, where twenty-seven sites have CARESTREAM Vue RIS/PACS and ten sites use AGFA PACS. This ability to access images across multiple platforms is bringing increased flexibility to Spire consultants and timely results to patients. Three professional views on **CARESTREAM Vue Motion** at Spire Healthcare Stephen Hayward, IT Director Spire Healthcare

"In private healthcare the consultant largely decides where he takes his patients. In order to grow Spire's business we need to differentiate our services from that of our competitors so that our consultants want to bring their patients to us and consequently grow our revenues. We constantly look at how we can use technology to make Spire Healthcare superior and provide a better service to both patients and consultants. Carestream's Vue Motion fulfils that criteria.

"We were aware of the importance of unifying clinical viewing to improve physician productivity and differentiate our services from those of our competitors. We constantly look at how we can use technology to provide a better service to both patients and physicians."

Stephen Hayward, IT Director at Spire Healthcare



Vue



[watch video](#)

THE PURSUIT OF MORE



Our present contingent of 38 hospitals came from two major network acquisitions, that of BUPA and Classic hospitals. BUPA operated Carestream's RIS PACS and the Classic hospitals Agfa RIS/PACS. They continue to be on separate platforms and as the **CARESTREAM Vue Motion** is PACS-agnostic it works equally well with both.

Reaction from our consultants has been hugely positive. They are very impressed with the quality of the images for display and find it a great convenience in their work. It is a fantastic product, intuitive to use and the image resolution is excellent. Obviously our competitors will catch up and take the system at some stage, but for now it has given Spire a boost and enhanced our reputation.

There is certainly a huge future in mobile health. Having access to care records and reports on a mobile device at the clinician's finger tips will be a great boom going forward and Carestream is really leading the way with this application." Dr Qaiser Malik, Consultant Radiologist, Spire Healthcare

"Vue Motion has made a vast difference to my image reporting. I no longer have to physically go to the hospital to log in at one of the workstations to view images and previous reports. Although not diagnostic quality, Vue



Motion allows me to perform a preliminary report which can make a massive difference to patient management. I can log in at weekends wherever I am which is of great advantage. It is an absolutely fabulous tool and advances patient care by providing clinicians with timely reports and a head-start on treatment options.

The system also allows onsite clinicians to discuss my findings with me in real time, I can log in wherever I may be and they can log in at the hospital. We can then both look at the imaging together and discuss any issues.

Another advantage is patient interaction. I can show a patient their imaging at the bedside and we can discuss their treatment. This makes a tremendous difference if the patient can actually see what the problem is and understand what treatment is planned for them.

Remote working has huge benefits. If I can report in my own time, I can schedule my day accordingly. I can report a scan immediately without having to visit the hospital, which in turn allows the hospital workstations to be utilised by other staff members. It provides flexibility to be able to issue a formal authorised report, dictated and typed on the system and accessible at that moment by the referring clinician." Andrew Milne, Imaging Manager at Spire Hartswood Hospital

6

"There is certainly a huge future in mobile health. Having access to care records and reports on a mobile device at the clinician's finger tips will be a great boom going forward and Carestream is really leading the way with this application."

Dr Qaiser Malik, Consultant Radiologist, Spire Healthcare

The ONC is making EHR adoption mandatory to:

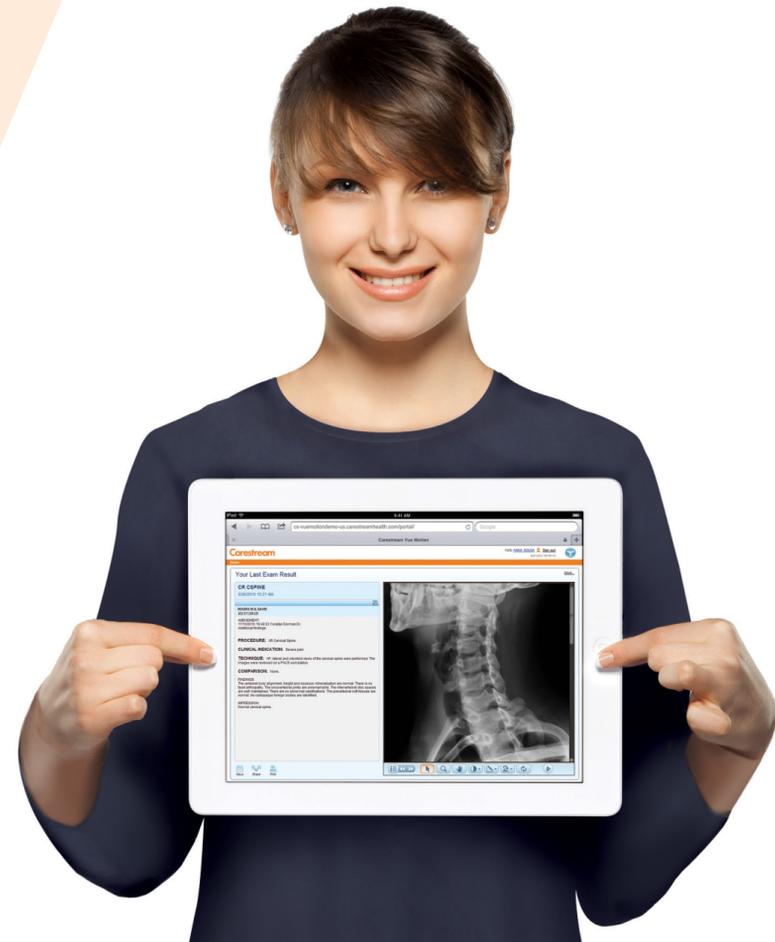
- **REDUCE PAPERWORK**
- **ENCOURAGE CLINICAL COLLABORATION**
- **MINIMIZE REDUNDANT EXAMS**

Other industries reduced cost by

10:1



“Before we had Vue Motion our consultants would usually fax reports to their secretaries and pick them up at a later stage. One of the benefits of Vue Motion is that they can log on to our image database and print and download reports directly without reference to us, which is excellent. The fact that it works across different platforms is a

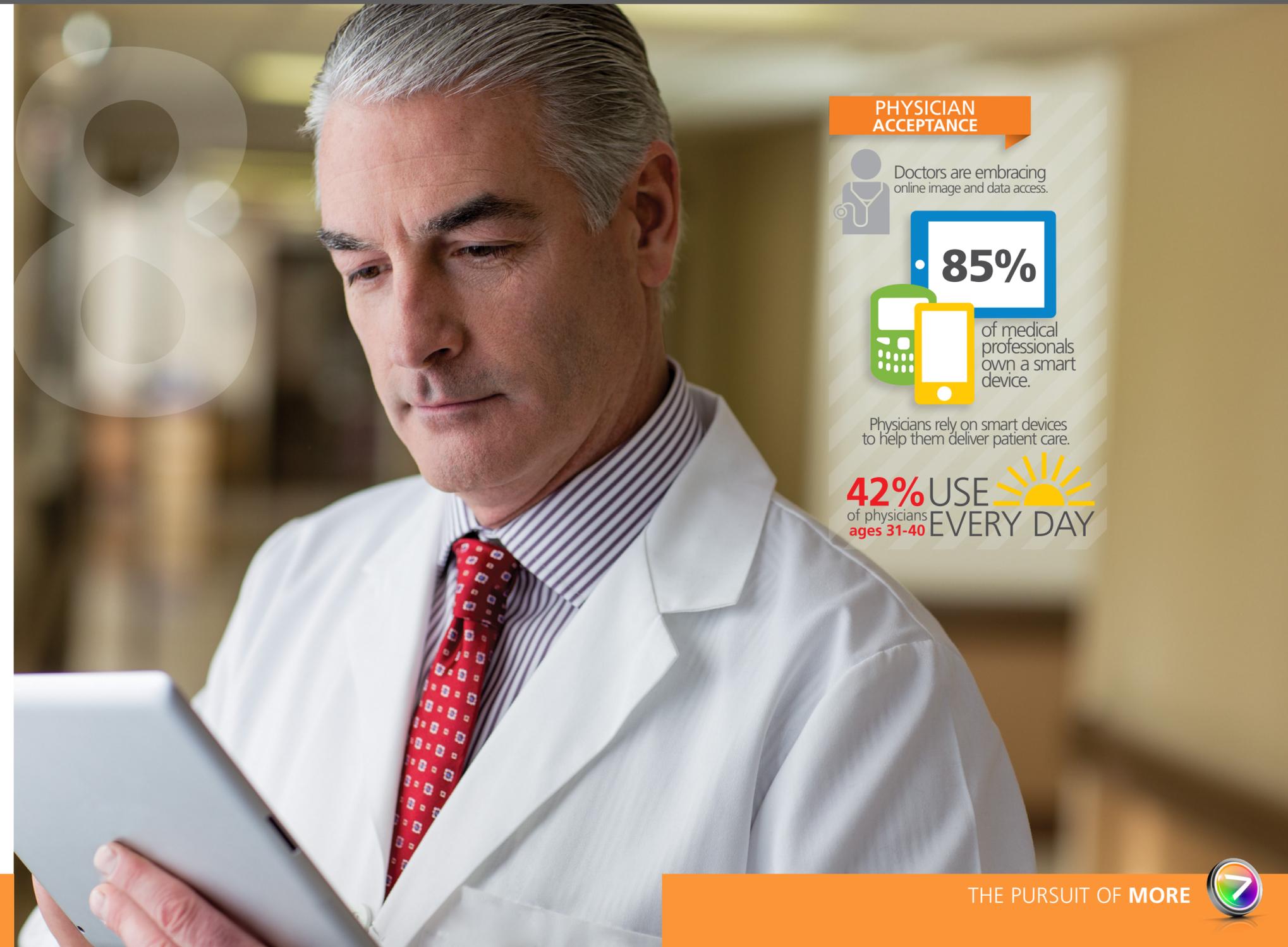


great advantage. Some of our consultants work at multi sites and the Vue Motion system allows them to access images from any Spire hospital where they have admitting rights. That means greater flexibility for them and greater flexibility for the patients if they are seen at, for example, another Spire hospital in the region.

We have a number of users who have found it extremely useful to access the imaging database directly. We had a situation recently where one of our surgeons was consulting in a competitor hospital and he was able to log on to our network and consult with his patient very effectively to discuss the images and possible treatment. This is extremely exciting and a powerful tool.

From the patients' perspective the fact that we can provide these images and reports very quickly is important as people come to the private sector because they want a prompt service and using this new technology we can provide that.

From a management perspective I think the most important element of this new system is the rapid distribution of images and results. Our consultants can access the system remotely and download and print directly without any interaction with my staff. This reduces the traffic into the Imaging Department and so makes our service much more efficient by leaving staff free to deal with other matters directly involving patient care.”



PHYSICIAN ACCEPTANCE



Doctors are embracing online image and data access.

85%



of medical professionals own a smart device.

Physicians rely on smart devices to help them deliver patient care.

42% USE EVERY DAY
of physicians ages 31-40



PATIENT ATTITUDES

REGARDING USE AND UTILITY OF A NEW PATIENT PORTAL PLATFORM

James Wood, IDR Medical GmbH

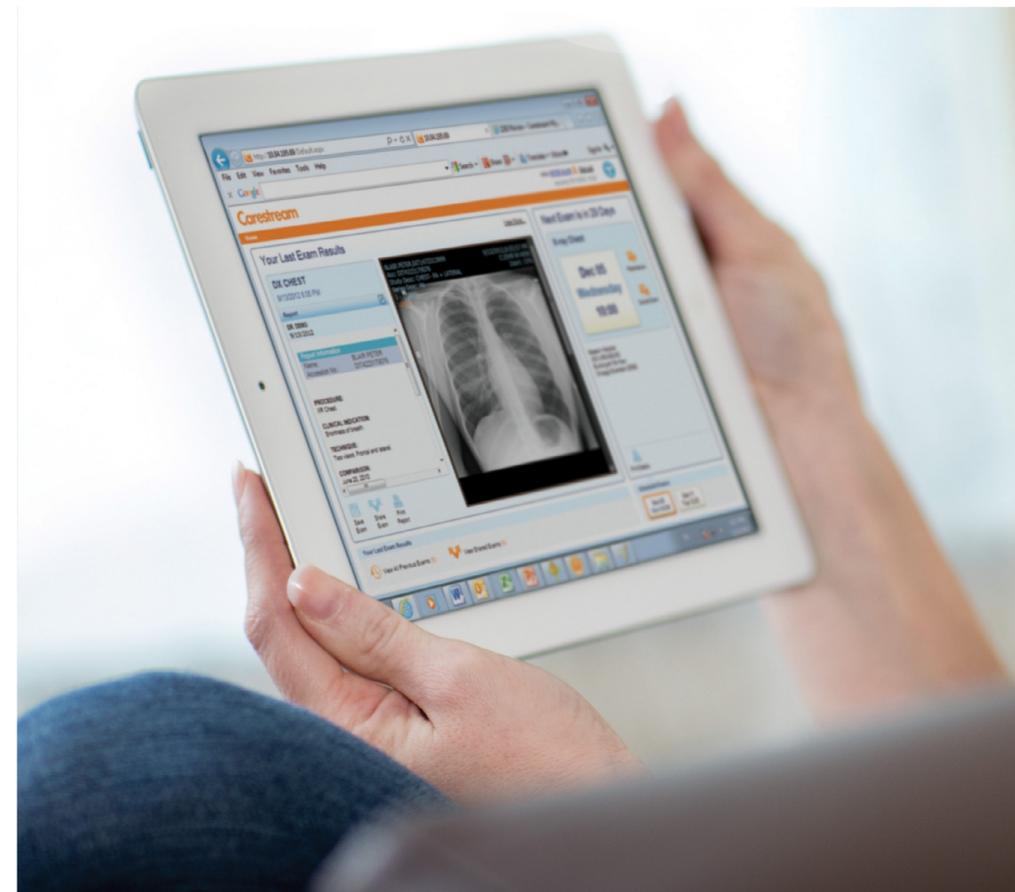
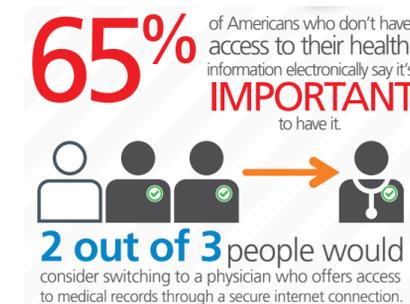
Timothy R.Hertweck, IDR Medical GmbH

Participants: Carestream Health, Inc. (Carestream) is a global manufacturer and marketer of diagnostic imaging technologies. The company's product portfolio includes dental and medical imaging systems and healthcare IT solutions; X-ray film and digital X-ray systems for non-destructive testing; and advanced materials for the precision films and electronics markets. It has developed a patient imaging portal, MyVue, that empowers patients to access, manage, and share, through secure protocols, their own imaging data. MyVue is commercially available in the United States and internationally.

In March, 2013, Carestream commissioned IDR Medical GmbH, an international marketing consultancy servicing the healthcare industry, to conduct a survey of U.S. based medical patients regarding certain attitudes toward patient portal technologies.

Context: Computer and personal communications technologies continue to be integrated into the daily lives and activities of the general population. It is not yet fully understood how the medical patient population will utilize certain technology platforms designed to enhance the patient experience and management of personal healthcare issues.

Objective: To determine patient opinions about patient portal technology, in general, and Carestream's MyVue imaging portal, specifically. Primary focus to determine how many patients may use MyVue, how they would interface with it, and whether it would have an impact on their overall satisfaction with the service.



80%

of Americans with online access to their healthcare information take advantage of it.

THE PURSUIT OF MORE



Design, Setting, and Participants: A quantitative on-line survey of 15 minutes maximum duration using the following screening criteria:

1. N = 1,000 (95% Confidence Interval +/-3%)
2. At least 18 years of age
3. 50% female; 50% male
4. Age segmentation:
 - a. Tier 1 - 18-29 years*
 - b. Tier 2 - 30-60 years
 - c. Tier 3 - 61+ years

*Respondents were screened out if below 18 years of age

An on-line survey was selected as an appropriate methodology given that the subject is a web portal. However, it was understood that some sample bias may exist as the sample population would comprise a subset of the general population that is already using the internet (approximately 78% of U.S. adults are internet users as defined by Nielsen Online 2012).

Respondents were first queried to obtain data about computer/internet competence and personal histories with medical imaging and health record maintenance. They were then provided with a four-slide non-branded description of the features of the MyVue patient portal followed by a series of questions probing them on anticipated behavior with their medical imaging and health

record maintenance if a patient portal with MyVue features were available.

Hypotheses: Eight key hypotheses behind MyVue development were to be tested:

1. Patients ≤50 years of age will be more likely to use a portal than patients >50 years of age.
2. Patients will be more likely to use a portal for their children's images than their own.
3. For those patients who do believe they would use a portal, there are certain exams considered to be more important that they have access to than others (i.e. ultrasound, mammogram, PET).
4. Patients who are currently using an online system to access general health information are more likely to use a portal.
5. Patients who get images taken more frequently are more likely to use a portal.
6. Patients with a history of having images re-taken are more likely to use a portal.
7. Patients who don't believe their physician remembers important information from their visits will be more likely to use a portal.
8. Security will be the primary obstacle preventing patients from using a portal.



Key Results

One thousand patient respondents meeting screen criteria completed the on-line survey over a two week period. Through the survey, respondents were further segmented by age as follows:

Age Group	% Of Respondent Sample
1. 18 - 30	32.3%
2. 31 - 40	14.8%
3. 41 - 50	10.8%
4. 51 - 60	8.9%
5. 61 - 70	29.5%
6. 70+	3.7%

- Over 60% (60.9%) of respondents characterized themselves as having moderate levels of computer / internet competence. 90.4% of younger respondents (18-30) profiled themselves as having advanced/moderate competence compared to 76.6% of older respondents (61-70).
- 92.4% of respondents confirmed they had a medical image taken in the past with the vast majority (83.5%) being x-rays followed by ultrasound (47%), MRI (47%), CT (31.8%), mammography (24.8%), and PET (8.5%).
- 50.2% of respondents with a history of medical imaging had received a copy in some format and in a range of 25% of medical images taken (30.5%) up to >75% of images taken (26.7%).
- 66.4% of those receiving medical images obtained them in hard copy while 26.6% received them on CD/DVD/USB.
- 54.3% of respondents indicated they would have shared their medical images with other physicians while 44.5% indicated the same for a family member/friend.
- Over 36% of respondents reported that their current healthcare providers use an internet site or portal to provide access to medical records or other healthcare information. The most common uses of these sites were to access office location information (70.1%), book appointments (66.6%), email physicians (64.9%), and pay bills (62.5%).



Following respondents direction to view a four-slide stimulus package describing the features of MyVue, they were required to provide responses to a series of inquiries about their perceptions of this technology platform and potential use.

- Respondents were asked to rate their likelihood of using an on-line portal on a scale of 1 to 7 with 1 = «Extremely unlikely» and 7 = «Extremely likely». 68% rated their likelihood as 6 or 7.
- Over 90% of respondents with children under the age of 18 (31%) indicated they would use a patient portal to access their children's medical images. A slightly lower percentage (77%) indicated a higher likelihood of having to assist older and less computer literate family members in the use of a patient portal.
- Just under half (49.6%) of the respondents indicated a higher likelihood of seeking assistance from more computer literate family members or friends in the use of a patient portal but this incidence was, surprisingly, lower in the older age groups (>40 years of age).
- 17% of respondents indicated they were uncertain about the use of a patient portal (rating of 4 or less on scale of 1-7) with the largest percentage of that population (34.1%) concerned about security and privacy of personal medical records.
- 46.7% of respondents would want immediate access to their medical images while 39.8% would first want

to discuss results with their physicians.

- 86.6% would want access to both their medical images and the written report associated with the images.
- A patient portal was favored by those respondents who required re-imaging (7.8%) because their original results had been misplaced.
- When asked which medical images respondents would be most interested in accessing with a patient portal, all types rated $\geq 93.5\%$.
- In spite of the advances in tablet and smart phone technologies, the personal computer was the preferred technology by just under 93% of respondents.
- When asked to rank the most important advantages to using a patient portal, 71.5% of respondents indicated the ability to share their medical images with other physicians. This was followed by the ability to maintain a personal record of imaging history (69.8%), belief that it will improve the quality of care delivered by the physician (50.9%), the ability to avoid repeat imaging (48.4%), and the ability to share images with family members (38.8%).
- Only 7.4% of respondents failed to see any advantage to having access to personal medical images and associated reports.

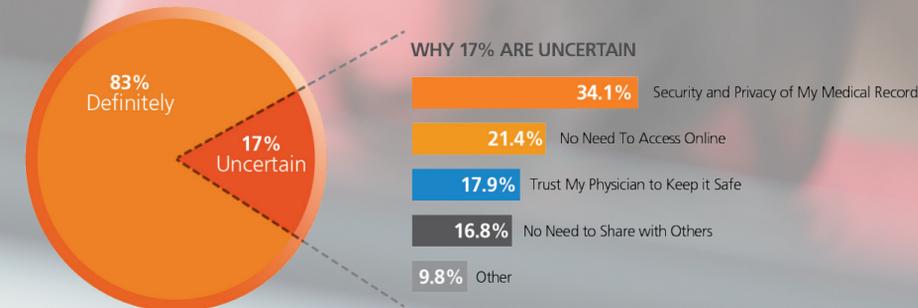
- Access to a patient portal would positively impact patients' relationships with their medical providers. Over 79% reported they would return to the imaging facility if needed in the future and over 76% indicated they would recommend the medical providers' services to a friend or colleague.

PATIENT SELF SERVICE THE BENEFITS

- ✓ Reminders **increase** medication adherence
- ✓ Direct scheduling **reduces** no-show rate by up to **35%**
- ✓ Online results **reduce** printing and mailing cost
- ✓ Prescription refill **cuts** staff time in **half**

Referral

Majority of patients are more likely to return or refer to friends and family a practice with imaging portal



HYPOTHESIS TEST RESULTS

Survey results produced conclusive answers to Carestream's eight hypotheses which served as the framework for the survey:

- Hypothesis 1 - Patients ≤50 years of age will be more likely to use a portal than patients >50 years of age.**

As evidenced in Figure 1, this proved to be incorrect. Respondents across all segmented age groups excepting the oldest (71+) indicated a high degree of likelihood of using a patient portal. Somewhat surprisingly, it was the 51-60 age group that rated the highest score of 6.08 and exceeded scores of 5.89 and 6.05 for age groups 18-30 and 31-40, respectively. Although an internet usage bias is inherent in the online survey structure, independent industry data demonstrates a relatively high degree of internet usage in older age groups (65+).

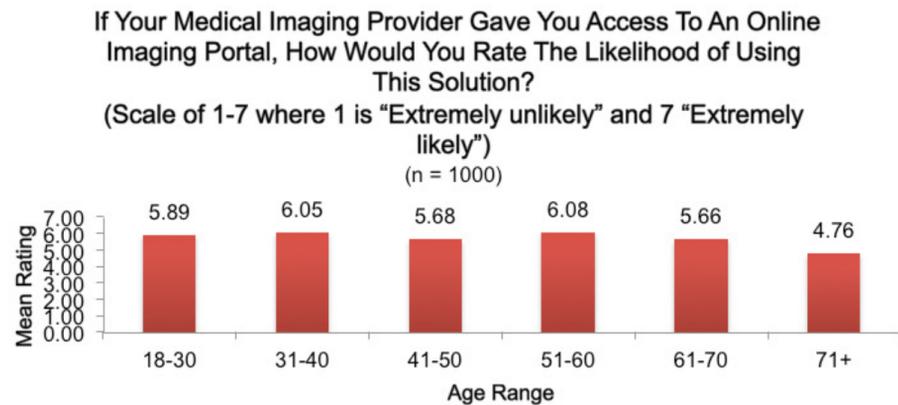


Figure 1. Attitudes Toward A Patient Portal By Age Segmentation

- Hypothesis 2 - Patients will be more likely to use a portal for their children's images than their own.**

Approximately one-third of the total survey respondent population reported they had children ≤18 years of age. Results affirm that the majority of those respondents (90%) will use a patient portal to access their children's medical images as compared to the total survey respondents who would access their own images (82.7%) (Figure 2).

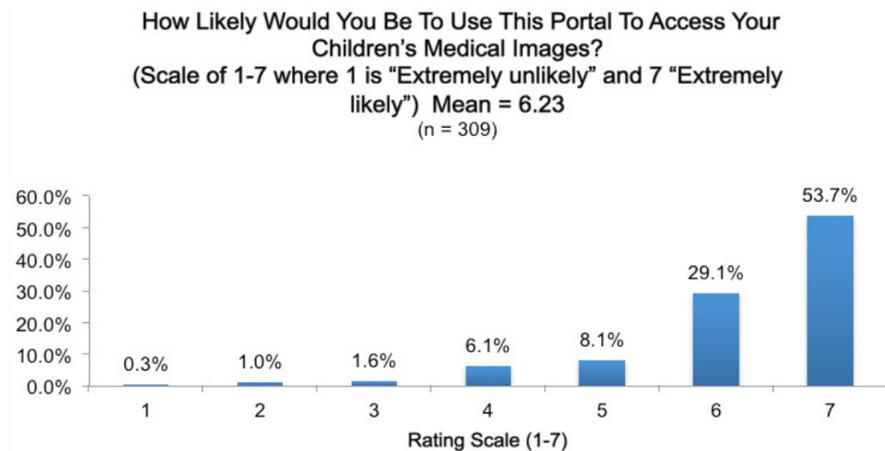


Figure 2. Use Of Patient Portal To Access Children's Medical Images

- Hypothesis 3 - For those patients who do believe they would use a portal, there are certain exams considered to be more important that they have access to than others (i.e. ultrasound, mammogram, PET).**

Figure 3 reveals a consistently high degree of interest (no less than 93.5%) in access to all 6 medical image types referenced in the survey. With a sample population of 958, there is no gender bias that might have been associated with mammography and ultrasound images. This is, perhaps, revealing some interesting insight into the male/female relationship today and increased social awareness surrounding both pre-natal and breast health.

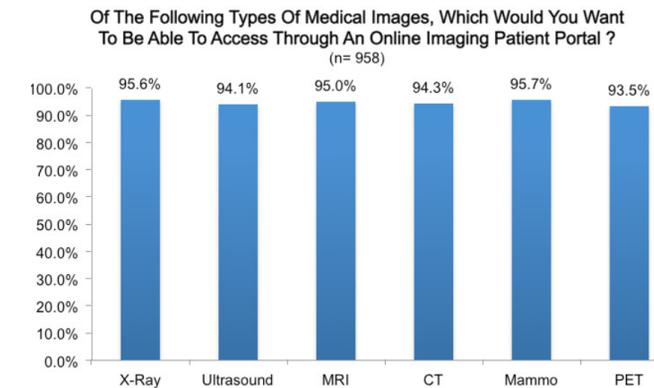


Figure 3. Preferred Image Modalities

- Hypothesis 4 - Patients who are currently using an online system to access general health information are more likely to use a portal.**

As expected, respondents who are currently accessing general medical information through online technology will be more inclined to use an online patient portal to access their images and records. Although statistical testing confirms a significant difference between the Mean Rating in Figure 4, even respondents not currently using online technology for medical information purposes are positive about the use of a patient portal if made available to them.

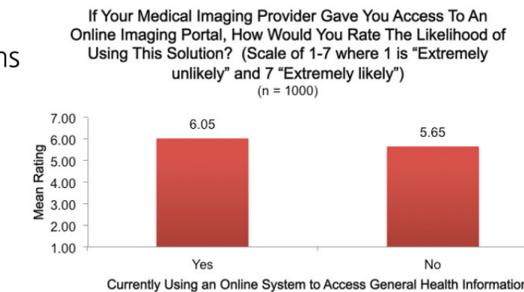


Figure 4. Patient Portal Use By Current Online System Users

When provided with a choice of media through which images and reports could be received, respondents indicated a significant preference (78.9%) for access to an online imaging portal, either singularly or in combination with hard copies of images and reports, as compared to 11.8% for current media (Figure 5).

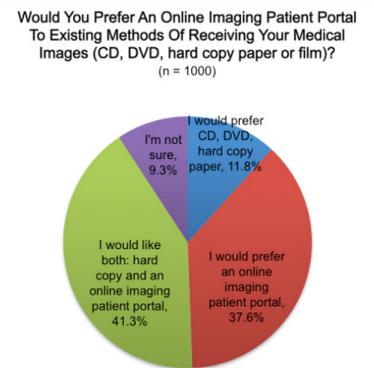


Figure 5. Preferred Media For Receipt Of Medical Images



- **Hypothesis 5 - Patients who get images taken more frequently are more likely to use a portal.**

Frequency of image taking over the past five years has no statistically significant bearing on interest in the use of a portal to access medical images (Figure 6). Overall interest is high on a scale of 1-7 and consistent across the three referenced modalities. Once again, this includes ultrasound and mammography and the entire survey sample population.

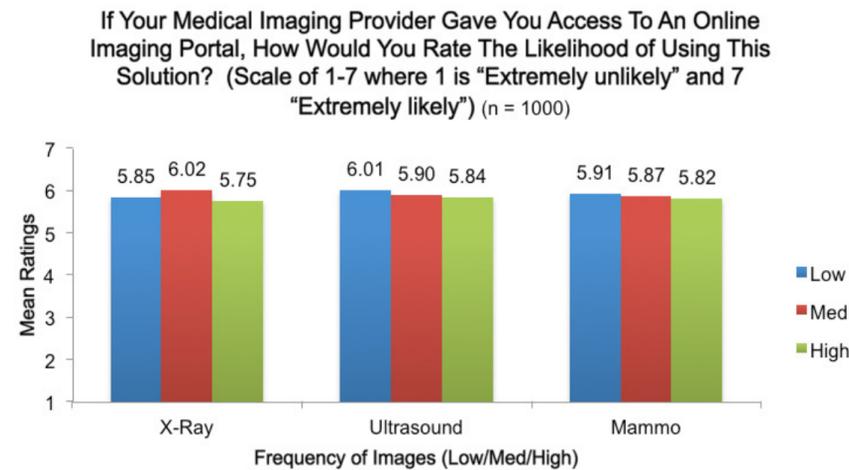


Figure 6. Patient Portal Use By Image Frequency

- **Hypothesis 6 - Patients with a history of having images remore likely to use a portal.**

Survey data does not confirm this (Figure 7). Although it would be expected to see patients with a history of image re-takes (7.8%) expressing interest in a patient portal, the vast majority of survey respondents (92.2%) with no history whatsoever also expressed interest. We found this to be compelling and indicative of a perceived unmet need in the general patient population. Medical providers should take note of this.

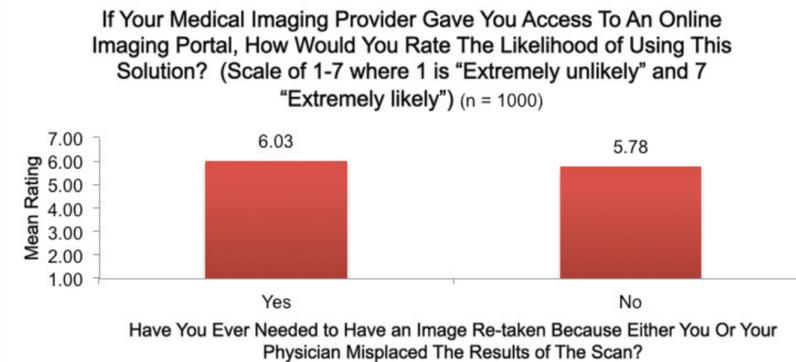


Figure 7. History Of Image Re-Takes

- **Hypothesis 7 - Patients who don't believe their physician remembers important information from their visits will be more likely to use a portal.**

Results confirm the opposite to be true. Rather surprisingly, it was those respondents who indicated the highest degree of confidence in their physicians who would use a patient portal (Figure 8). This may be attributable, in part, to considerably higher confidence levels as expressed by respondents in the segmented age groups from 41 years of age and higher (combined 52.9% of all respondents).

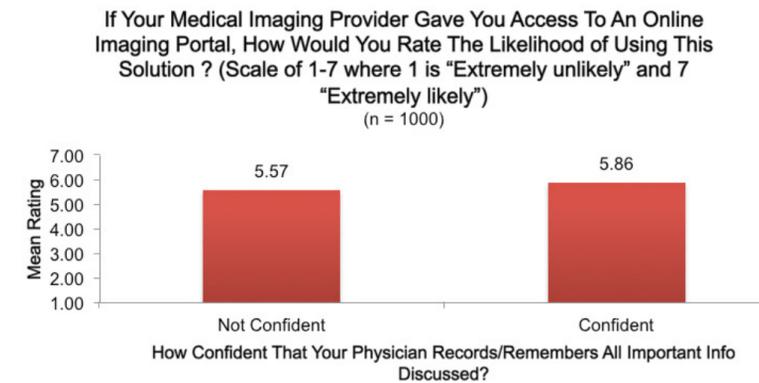


Figure 8. Patient Confidence In Physicians

- **Hypothesis 8 - Security will be the primary obstacle preventing patients from using a portal.**

Only 17% of survey respondents indicated reservations about the use of a patient portal. For these respondents, the dominant concern was about security and privacy of personal medical records. Security/privacy concerns outdistanced the next factor (no perceived need to access records via a web site) by one-third and the factor previous to that by one-half (Figure 9).

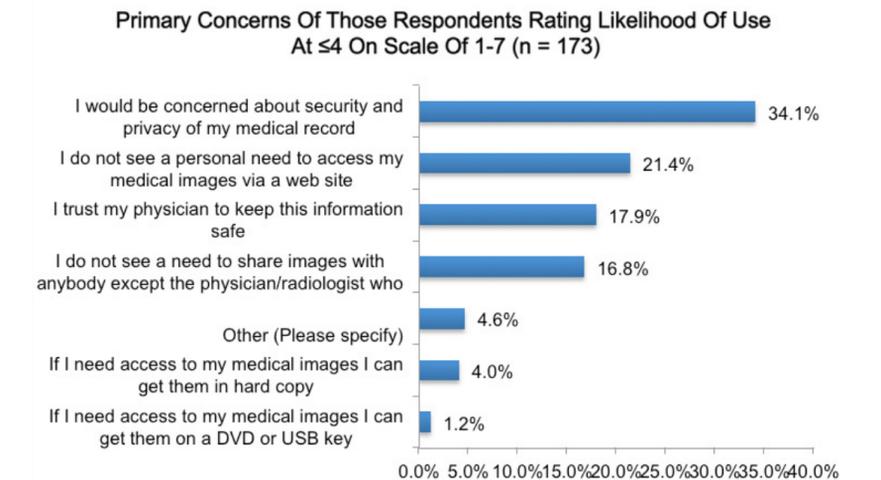


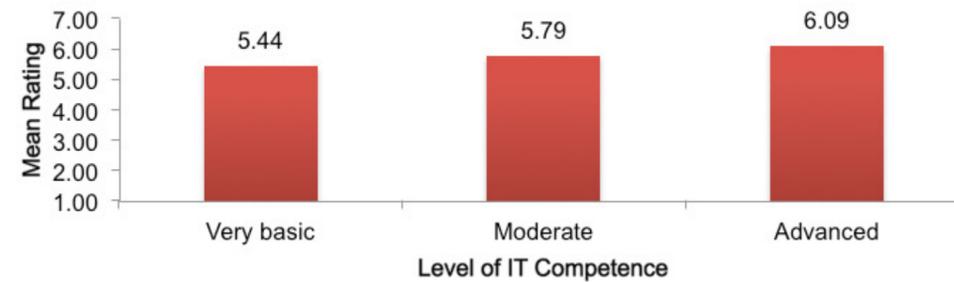
Figure 9. Primary Concerns For Those Less Likely to Use



DISCUSSION

While 36% of respondents report use of some form of web-based technology to access healthcare information, the survey reveals a high level of perceived value by 86.6% of respondents in a portal that specifically provides access to medical images and associated reports. The ability to share images with other physicians and maintain a personal record of imaging history are cited as the two most compelling reasons for use of a portal and reveal, perhaps, patient attitudes toward more active participation in their healthcare management.

If Your Medical Imaging Provider Gave You Access To An Online Imaging Portal, How Would You Rate The Likelihood Of Using This Solution? (Scale of 1-7 where 1 is "Extremely unlikely" and 7 "Extremely likely")
(n = 1000)



There is negligible variability in the use of an imaging portal based on age. Respondents from 18-60 years of age were consistently high in their ranking of the likelihood of use while results showed that respondents 60+ years of age might be slightly less inclined to use a portal. However, as younger generations mature and continue to incorporate new technologies into their daily lives, it should be expected that likelihood of use of a patient portal will increase across all age groups. Medical providers should take note of this.

Allied with the foregoing observation is use of an online patient portal based on respondents' self-evaluated level of IT competence (Figure 10). Although statistical analysis reflects meaningful differences in the mean rating, data affirms that even those respondents with just very basic IT competence would use an online portal.

Although the MyVue imaging portal maintains the integrity of personal information through a variety of secure protocols, 17% of respondents that reported a low likelihood of portal use cited security as among their primary concerns. Medical providers and institutions offering an online imaging portal must attend to and mitigate these patient concerns by developing more comprehensive data-security measures in combination with patient education initiatives.

Figure 10. Portal Use Based On Level Of IT Competence

Notwithstanding these security concerns from a minority of the respondent population, Figure 11 reflects apparent respondent acceptance of current security measures that would allow them to use an online patient portal to share images with physicians (88%) and family members (60.6%).

Patient use of an online medical imaging portal also bodes well for healthcare providers. It will not only enhance and facilitate greater ease of communication between physicians and their patients but, as evidenced in Figure 12, it will likely enhance patient referral patterns and continuity of care with imaging providers offering an online portal to their patients.

Would You Use The Online Imaging Patient Portal To Share Images With Family Members Or Other Physicians?
(n = 827)

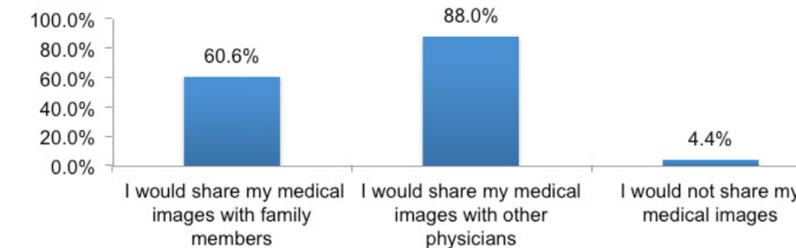
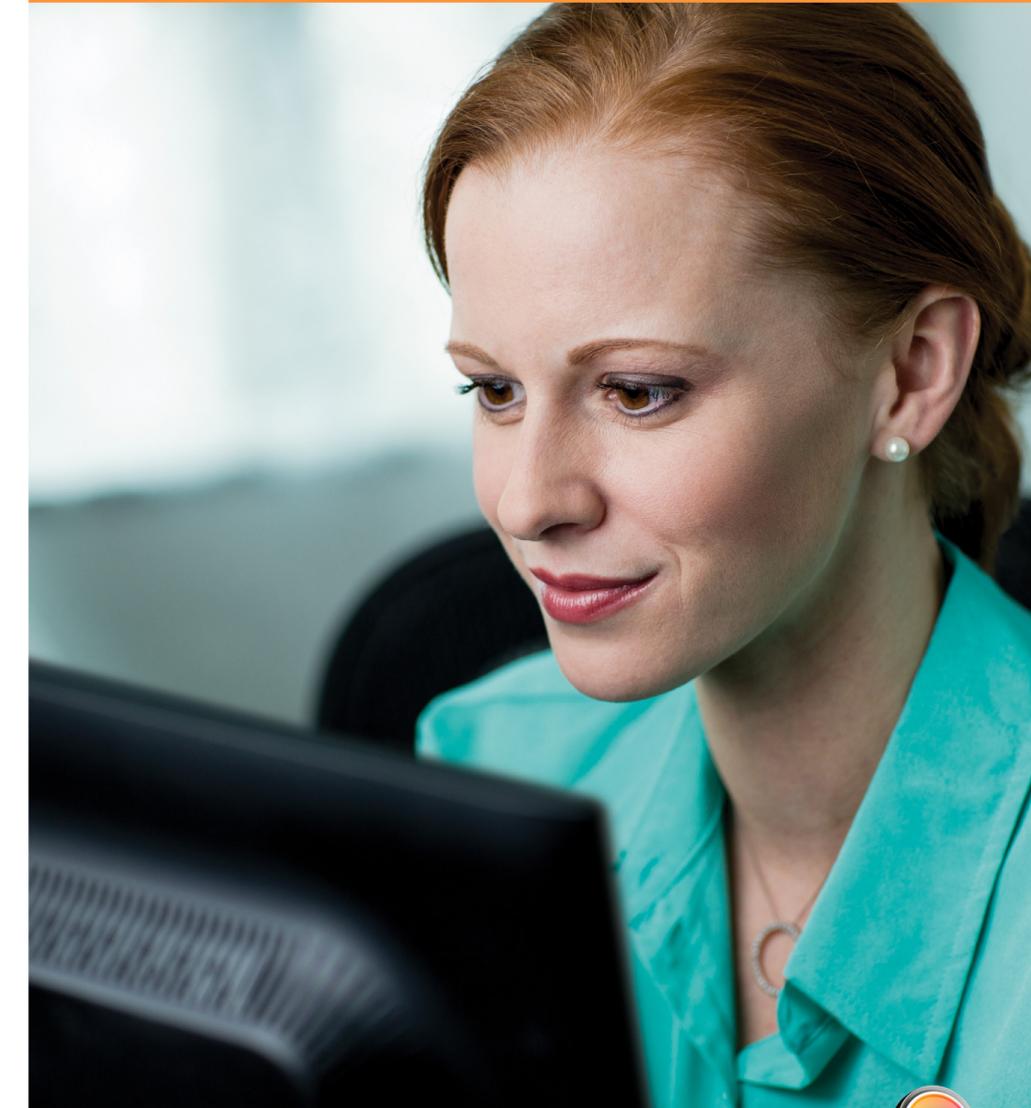


Figure 11. Use Of Online Imaging Patient Portal



CONCLUSION

MYTHBUSTING

Patient Habits with Online Portals

- Myth 1** Patient access to portals will have no impact on satisfaction
- Myth 2** Security of images will be the primary obstacle in preventing patients from using a portal
- Myth 3** Age will be a hurdle for adoption
- Myth 4** Patients will be more likely to use a portal for their children's images than their own
- Myth 5** Patients currently using online tools are more likely to use a portal than those who don't
- Myth 6** For patients who use the portal, there are some exams considered more important to have access to than others
- Myth 7** Patients with a history of having images retaken are more likely to use a portal

SECURITY AS A FACTOR FOR ACCESS

Myth 1

Patient access to portals will have no impact on satisfaction

BUSTED

Access to a patient portal would positively impact patients' relationships with their medical providers

79% reported they would return to the imaging facility if needed in the future

76% indicated they would recommend the medical providers' services to others

Myth 2

Security will be the primary obstacle in preventing patients from using a portal

CONFIRMED

Overall likelihood of using a patient portal:

83% Definitely **17%** Unlikely

4 out of 7 of the unlikely cite security concerns

AGE AS A FACTOR OF ACCESS

Myth 3

Age will be a hurdle for adoption

BUSTED

59% of respondents over the age of 71 were very likely to use an image portal

Myth 4

Patients will be more likely to use a portal for their children's images than their own

CONFIRMED

OVER 80% indicated they would use a patient portal to access their children's data

IT COMPETENCY AS A FACTOR FOR ACCESS

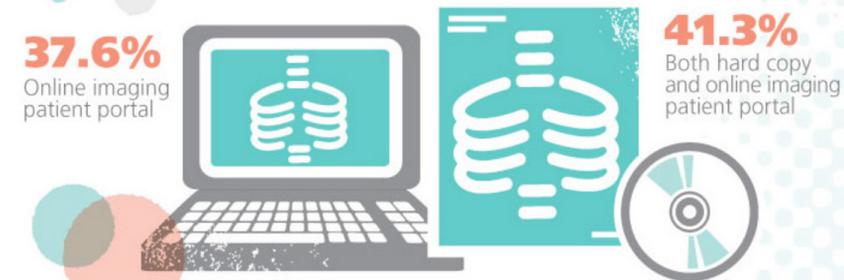
Myth 5

Patients currently using online tools to access health information are more likely to use a portal than those who don't

BUSTED

Both patients currently using online tools and those who didn't have access, indicated they would be likely to use a portal

Preferred method of image delivery:



EXAM FREQUENCY AS A FACTOR FOR ACCESS

Myth 6

For patients who use the portal, there are some exams considered more important to have access to than others

BUSTED

Exam Type	Percentage
X-ray	95.6%
Ultrasound	94.1%
MRI	95%
CT	94.3%
Mammogram	95.7%
PET	93.5%

All exams included in the study received high scores

Myth 7

Patients with a history of having images retaken are more likely to use a portal

BUSTED

92% Had no retakes and would use portal

8% Had retakes and would also use portal

Source: "Patient Attitudes Regarding Use And Utility Of A New Patient Portal Platform," James Wood and Timothy R. Hertweck, IDR Medical GmbH, June 2013.

DOWNLOAD FULL STUDY FOR COMPLETE DETAILS

With trends in today's healthcare environment, such as increasing price transparency and expanding consumer orientation toward choices, combining with the continued infiltration of IT into the daily activities of patients and healthcare providers, a service-oriented online imaging portal can deliver significant value to those patients and their providers.

If Your Medical Imaging Provider Were To Offer You An Online Imaging Patient Portal Solution, Do You Think You Would Be More Likely To:

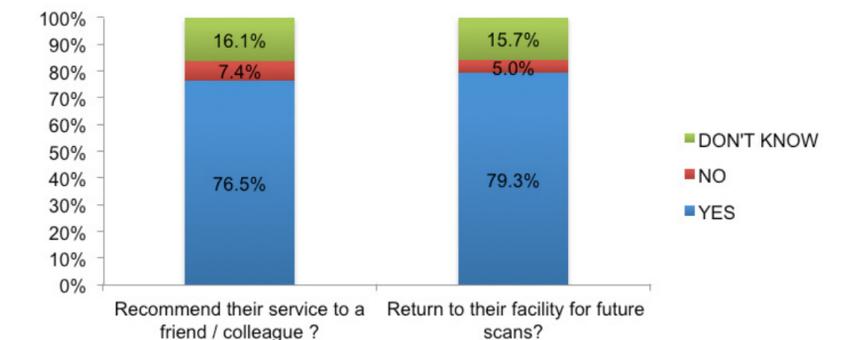


Figure 12. Future Patient Behavior Based On Imaging Portal Use

THE PURSUIT OF MORE



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