

Website Components that Boost the Online Presence of Radiology Group Practices

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Abstract

The healthcare industry has been slow to adopt online marketing strategies, and radiology practices are no different. As healthcare becomes progressively patient-centered and the buying cycle continues to take place online, creating and maintaining an online presence is crucial to successful practices. The purpose of this nonexperimental project was to assist a radiology group in developing a virtual presence by creating a practice website. In order to create an effective virtual presence, it is important to know what components are essential to healthcare consumers and referring physicians. To do this, the radiology group enlisted a marketing firm, surveyed consumers and physicians on perceptions of current practice websites, and evaluated components of twenty existing practice websites using rubric analysis. The survey results revealed most consumers were overwhelmed by the massive amount of information on existing websites, frustrated by outdated webpages, and preferred less scrolling and tab use, while referring physicians wanted access to contact information and the picture archiving and communication system. The rubric analysis identified website components commonly used and those uncommon but desirable based on perceptions. By acknowledging perceptions and incorporating desirable practice website components, an online presence can be created that effectively markets the healthcare organization.

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Chapter 1: Introduction

Introduction

Creating and maintaining an online or mobile presence is crucial to the success of any business today. Between the Internet and smart phones, consumers are now using technology to gain access to news, entertainment, research, and even healthcare information. The healthcare industry has been one of the slowest to embrace this change, but an online presence is just as important for healthcare providers as it is for restaurants, clothing companies, and jewelers who have fully embraced this marketing technique.

The radiology sector of healthcare specifically is a difficult profession to market. Radiology practices need to market to more than patients because the majority, if not the entirety, of their business comes from referrals. In small group practices where there is no department focusing particularly on marketing, the inclusion of a marketing presence through a practice website is often nonexistent. This study will investigate existing radiology group websites and recent literature to reveal which website components are the most important for radiologists to include in online practice marketing.

Background. A radiology group in Arkansas began focusing on online marketing this year, over 30 years after the group's formation. The group is comprised of a radiology physician group, a medical billing and practice management company, and an imaging center. The group's unique structure makes the addition of an effective website more important to utilize, but also more difficult to create than typical radiology practice websites. The target audiences will not

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only include patients, referring physicians, payers, hospitals, and clinics, but also other practices in search of a billing company or management.

Although the company has a great reputation and a long track record of success, the overall growth has been slow. Thus far, the growth has occurred primarily due to the networking efforts of the company's administrator and physicians. One likely contributing factor to the slow growth is the lack of an online marketing presence. The physician group and the billing company are without a website entirely, and the imaging center has an extremely outdated website with obsolete information. As the company continues to grow, the doctors have turned their attention to obtaining the missing online presence, starting with a company website. Most larger companies have departments dedicated to marketing and website creation. Smaller companies often have one individual responsible for several departmental tasks such as credentialing, human resources, and marketing, often resulting in the neglect of marketing entirely.

Problem Statement. Although much of the radiology profession involves sitting in a dark room, "the practice of radiology is a business, and marketing is an important part of that business" (Levin, Rao, Flanders, Sundaram, & Colarossi, 2016, p. 1260). It is normal today for patients to search online for health and provider information, and what they find online often depicts where they seek medical attention and care. In the case of radiology, web searches are often the only way patients can review their potential interpreting radiologists. Ultimately, radiologists receive their business from referring physicians. Patients must usually receive a referral from a primary care physician to get an image taken, or to have an image read, which makes the intended online marketing audience for radiologists somewhat unclear.

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A recent study investigating the online presence of radiologists revealed that 70% of search results lead to third party domains containing physician information and ratings (Vijayasarithi, Loehfelm, Duszak, & Hawkins, 2016). Patient and referring physician reach is not the only reason to increase online marketing. When other groups are looking for a new billing company, one of the many steps will likely be an online search. Currently, Google's top 10 results when searching for the Arkansas radiology group leads to third party domains such as Health Grades, Vitals, and the websites of local hospitals and clinics where the group's physicians practice.

Website creation alone by local marketing firms in western Arkansas averages \$5,000 per website. Additionally, logo and branding development averages \$600 per website, plus blogging costs of \$150 per month, social media management and set-up costs of \$750, and monthly boosted Facebook ads for \$250 per month (Cunningham, R. personal communication, December 21, 2016). Website images can be costly as well. Custom photography and photoshoots can cost up to \$1,000 or more. Stock photos cost between \$40 and \$50 a piece for unlimited royalty free use, and most websites average between 5 and 10 photos (Harper, M. personal communication, March 7, 2017). While all effective marketing techniques, each additional option adds up quickly.

Purpose Statement. Over the next few months, the radiology group will create a practice website with a local marketing firm. The firm has never created a radiology-specific website, although they do have experience with medical websites. Knowing the most important components necessary to maximize the group's new online presence will be beneficial during this process. Most radiology group websites contain pages for practice information, physician

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information, contact information, and online bill pay. Some also have portals for referring physicians to refer patients and obtain images and results. This capstone project intends to discover which components are the most beneficial to include in websites for radiologists to improve online presence and to grow practice business.

Chapter 2: Literature Review

Healthcare marketing via an online presence has been a popular topic of research recently with proven beneficial results. Several recent studies have shown that online marketing and developing an online presence have helped physicians meet the patient-driven demand of seeking information and ratings on their potential providers online (McEvenue, Copland, Devon, & Semple, 2016). Even prescription drug marketers have turned to the Internet to reach patients and promote products (Southwell & Rupert, 2016). But what about radiologists?

There are studies conducted as recently as 2014 that contribute increased referrals in radiology to face-to-face marketing. One study even suggested having a sales representative and a radiologist visit referring doctors as often as every 2 weeks (Grignon, et al., 2014). This is not feasible for many physicians. The Arkansas radiology group's imaging center manager conducts face-to-face marketing every day of the week. He visits the center's referring doctors and clinics to deliver donuts, pizza, fruit trays, and veggie trays to keep the professional relationships alive and to keep the referrals coming. These trips alone result in the manager being out of the office for up to five hours a day.

Because little research has been done specifically regarding online radiology marketing, looking at research in other specialty's online marketing, physician rating websites, and social

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media usage may provide helpful insight for radiologists. The following literature reviews will be broken up by article topic into the following categories: social media, online ratings, patient preferences, websites, and marketing.

Social Media. A 2014 study by Sara Bird looked at the way patients use social media outlets to access information and review healthcare experiences, as well as what physicians can do about negative reviews. Conducting an online search is one of the first steps consumers across all specialties and interests take when searching for something unfamiliar to them. For example, parents may conduct a search for local pediatrician reviews online as the first step in choosing a family pediatrician. These searches occur across all areas, topics, and locations, and this information is readily available to consumers in seconds. This also means that patients with bad experiences can share negative encounters on the Internet, and other potential patients can access that information in seconds and consequently choose another provider (Bird, 2014). Positive and negative word of mouth has been an influential way consumers have communicated with each other for decades. The Internet has created electronic word of mouth (eWOM) which allows the spread of word of mouth communication to expand dramatically (Kim, Seo, & Schrier, 2014).

When searching for provider information online, the most popular search results lead to third-party controlled websites where anonymous ratings and reviews of medical providers are made. These websites, including social media websites, have taken traditional word-of-mouth communication and magnified it. (Bird, 2014). “A 2012 survey conducted in the US found that 42% of consumers had used social media to access health-related consumer reviews, including 11% who reviewed doctor rating sites” (Bird, 2014, p. 885).

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Another recent survey revealed that over 50% of participants considered the information found on these rating websites important and influential when making healthcare decisions including choosing a provider. Although these websites have the potential to share biased and flawed information, it is nearly impossible to regulate or stop these posts before they are posted (Bird, 2014). This study revealed that a great website alone will not create more business and improve reputations for healthcare providers. There are other competing third-party websites with the power to ruin a provider's reputation (Bird, 2014). With this new form of word-of-mouth communication, bedside manner and friendliness is nearly as important as delivering great healthcare.

Clyde, Rodriguez, and Geiser (2014) investigated patient perceptions of providers' personal social media pages, focusing specifically on Facebook. This mega social networking website now has over 800 million active users. It is inferred in the beginning of the study that patients look to provider Facebook pages to investigate provider characteristics and personalities outside of the workplace. It is also inferred that the findings from provider Facebook pages have the power to sway patients' faith in their providers' abilities to meet healthcare needs (Clyde, Rodriguez, & Geiser, 2014).

Two-hundred and fifty participants were each assigned to view 1 of 6 physician's Facebook pages. Participants rated physician pages as 1) strictly professional, 2) personal but revealing a healthy lifestyle, or 3) personal and revealing an unhealthy lifestyle. The results revealed that the participants preferred their physicians to have 2 – a personal but healthy lifestyle revealed on personal Facebooks. Thus, it is important to today's healthcare consumers to be able to relate to providers on a personal level to be able to trust them on a professional

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level. It is important to note that social media outlets open up an alternate, often simpler avenue for patients and providers to communicate. However, due to possible violations to the Health Insurance Portability and Accountability Act (HIPAA) among numerous other potential hazards, it is suggested that interacting with patients remain in the office (Clyde, Rodriguez, & Geiser, 2014).

Although the Arkansas group's physicians are focused on professional websites, radiologists must remember that patient perception of information included on personal Facebook pages can have a significant impact on the group's reputation and business. However, a professional Facebook page may benefit the radiology group, creating another outlet for patients to review potential providers, and even virtually check-in to the clinic or imaging center.

Gagnon and Sabus (2015) continued the study of providers, patients, and social media outlets through a perspective healthcare article. Throughout the article, Gagnon and Sabus discussed the benefits and downfalls of professional social media accounts, as well as best practice rules to follow. In the last several years, the use of social media has spread to hospitals and clinics. "As of early 2014, the Mayo Clinic reported that more than 1,500 US hospitals managed 6,500 social media accounts on sites such as YouTube, LinkedIn, Facebook, Twitter, 4square, and blogs" (Gagnon & Sabus, 2015, p. 408). There are even social media outlets that allow healthcare organization and provider interaction. Gagnon and Sabus concluded their article by acknowledging the unavoidable continued growth of social media. Healthcare providers have the opportunity and the obligation to embrace this growth and use it to improve the nation's health (Gagnon & Sabus, 2015).

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According to Cork and Grant (2016), social media and the Internet have blurred the lines of what is deemed medically professional, and that is true for professionals in all industries. The extreme increase in available information due to these recent technologies have changed how consumers and professionals retrieve and process information. While attention has been primarily turned to the benefits of such technology, entities like that General Medical Council (GMC) have suggested that this technology could prove detrimental to maintaining a good medical practice (Cork & Grant, 2016).

To avoid the negative possible effects associated with online technology, Cork and Grant suggested that physicians use the same rules and guidelines online that they do in person. There must be a clear separation and distinction between public and private information. This may mean that physicians and other professionals use their personal pages as they would a professional page. Regardless of the personal limitations, physicians and healthcare professionals must embrace and respond to the new technologies and the patient demands for this information without sacrificing professionalism (Cork & Grant, 2016). This is important not only for social media, but for any information available online.

A recent qualitative study collected the opinions of 31 participants who attended the 2014 Social Media Summit on the professionalism of social media. The results revealed that an online presence and the use of social media should be embraced.

If professionalism is a social contract between medicine and society, and society is increasingly using social media, is it a professional responsibility of physicians to consider the rewards and risks of social media in the care of patients, society, and

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themselves, as well as the education of learners?” (Pereira, Cunningham, Moreau, Sherbino, & Jalali, 2015, p. 561).

The answer, according to this study, is yes. Participants agreed that social media is a great tool that can be used to improve both health education and health outcomes. The study also revealed important risks to consider when utilizing social media. These risks include breaching confidentiality, negatively effecting accountability, facing technical issues, and receiving a lack of participation (Pereira, et al, 2015).

Glover, Choy, Boland, Saini, and Prabhakar (2015) looked specifically into radiologists’ use of social media by investigating how private radiology groups and academic radiology departments use social media. The use of Facebook, Twitter, Instagram, Twitter, Pinterest, YouTube, and LinkedIn by 50 private radiology groups (PRGs) and academic radiology departments (ARDs) were assessed. The results revealed that the PRGs adopted Facebook and Twitter much earlier than the ARDs. Over 70% of PRGs managed 1 or more social media accounts compared to only 28% of ARDs (Glover, et al, 2015).

One reason for the increased adoption by PRGs is that they operate in a more competitive market, thus heavily influencing business strategies and these groups to stay current with such adoptions. ARDs on the other hand are more limited by their governing institutions and policies (Glover, et al, 2015). This study is important for the Arkansas radiology group because it shows what social media outlets other radiologists are using, and therefore which social media sites the company may benefit from utilizing.

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It is widely understood that social media has drastically changed communication. “Unlimited interconnectivity, boundless ability to share knowledge, and viral transit of information via social networks have altered the way people shop, date, and identify with peers” (Hawkins, 2016, p. 111). In one day, nearly 500 million tweets, 80 million photos, and 4.5 million likes will be posted on a social media outlet. This change in communication effects radiologists, too. Many practices have utilized social media to improve their engagements with patients. In 2015, a group of radiologists, patients, radiation oncologists, and other industry professionals developed the radiology hashtag ontology. A code was created that pinpoints certain hashtags for individuals interested in radiology to easily tag and find radiology-related information. For example, interventional radiologists can search for the #IRad hashtag, and radiology residents can search for the #RadRes hashtag, which has already grown widely in popularity. This creation has improved communication between radiologists, referring physicians, and even patients. The creation of this hashtag also helps create a radiological timeline so that those in the profession may look back on issues and popular topics from previous years (Hawkins, 2016).

Many radiologists are resistant to utilize social media. Most individuals use these tools as personal profiles, and doing so as a medical professional is tricky. It is best, as other articles have pointed out, to keep a professional persona online while using social media profiles. It can be highly beneficial to reach patients and increase patient knowledge, as well to reach other professionals and conduct radiology-related discussions. Currently, the Arkansas radiology group has a very minimal Facebook page that has not been updated in over a year. Some of the

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radiologists have private social media profiles, but the pages are not used as a marketing tool.

This may be another area the group could embrace during the online marketing quest.

Social media platforms have millions of daily users. The entire medical industry has been slow and hesitant to adopt such methods of communication. There are, however, many radiologists taking advantage of such a large stage. Using social media is a great way to reach a huge audience without the huge cost. Some use profiles like LinkedIn to post resumes, while others use a combination of the profiles to stay current on information and findings in the profession. When used with caution, utilizing social media profiles can improve and strengthen a radiology practice's brand and online presence. The Journal of the American College of Radiology (ACR) has a series of videos available to guide radiologists in how to use social media profiles in a professional manner (Naeger & Webb, 2013).

Online Ratings. Sobin and Goyal (2014) looked at the importance of otolaryngologist's online reputations via Google searches and physician ratings website results. The study looked specifically at the results found on the rating websites Vitals and Healthgrades. These websites are the primary search results when conducting a search of any physician in any specialty. Evaluating these online ratings revealed that over 80% of the nearly 300 otolaryngologists that were studied had profiles on one of these online rating sites. Of those with profiles, over 90% had profiles on Healthgrades with a 4.4 of 5 rating, and over 80% had profiles on Vitals with a 3.4 of 4 rating. Of the Vitals profiles, over 60% had comments, and nearly 30% of those comments were negative. 49.1% of the otolaryngologists studied had 1 or more negative comments on their profile (Sobin & Goyal, 2014).

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Sobin and Goyal's study also revealed that the Internet is a primary source of healthcare information for patients. 80% of polled patients admitted to searching the Internet for healthcare information. 76% of these patients admitted that what they find during these online searches affects personal healthcare decisions. Online negativity toward physicians is impossible to control. However, it is suggested that physicians attempt to manage and take control of individual and group online reputations.

These third-party physician websites are visited over 250 million times every year (Sobin & Goyal, 2014). Physicians should improve bedside manner and overall patient interactions to offset any online negativity. Creating a practice website with search engine optimization (SEO) also has the potential to offset online negativity. SEO increases the visibility of websites and webpages, allowing practice websites to be listed in search results alongside the rating websites and to increase the probability of deterring patients from seeing possible negative comments or reviews.

Patient Preferences. A study by Voyer and Ranaweera looked at the effects of word-of-mouth (WOM) communications. The study conducted a survey that allowed participants to share a time they were given a word-of-mouth suggestion, such as a specific physician recommendation, and how they responded. The results revealed that participants were more likely to accept suggestions from those that they have a stronger tie with (Voyer & Ranaweera, 2015) "67 percent of US internet users choose WOM from family, friends, and co-workers, over digital tools, as a means of finding a new physician" (Voyer & Ranaweera, 2015, p. 637). Although this study seems to minimize the harsh effects of negative online reviews, striving for positive reviews online and through WOM should not change

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One qualitative interview study by Santer, Muller, Yardley, Burgess, Ersser, Lewis-Jones, and Little (2015) looked at the online health information search experiences of parents and caretakers while searching for information on childhood eczema. Interviews were conducted with 31 parents of 28 families from 6 general practices in England on beliefs and understandings of these online searches. The results were highly varied. Very few participants could find exactly what they were looking for, and the majority were overwhelmed by the process. Participants reported not finding enough relevant information, finding too much information that was hard to sort through, and finding information that was difficult to decipher (Santer, et al, 2015). Healthcare professionals need to take control and make high-quality health information readily available and easy to find online for patients, parents, and caretakers. Providing this information on the practice websites will be one great way for the Arkansas group to confront these difficulties.

The Dutch Lung Information Center (DLIC) launched the organization's first website in 2003. Although the entire website became instantly popular, the most popular section was the "Ask the Physician" section. There, website visitors could ask providers questions anonymously and get responses quickly. A recent qualitative study looked into why patients and website visitors preferred using the online physician interactive page rather than consulting directly with their physician (Shook, Linssen, Schramel, Festen, Lammers, Smith, Postmus, & Westerman, 2014). Telephone interviews were conducted with 5 patients and 20 caregivers who posted questions on the DLIC "Ask the Physician" page. Participants shared that the page was used to find information, to seek support, and to help with coping of medical conditions. Many also used the page as a second opinion to what primary care physicians have said, or to prepare for the

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patient's next primary care appointment. Those seeking a second opinion said that they wanted to better understand the information obtained during appointments because they were too nervous or intimidated to question the physician in person (Shook, et al, 2014). This may also be another effective component for the Arkansas radiology group to consider during website creation.

Cabarrus, Naeger, Rybkin, and Oayyum (2015) considered patient preferences when receiving diagnostic imaging results. Although directly communicating results to patients is a highly-suggested way for radiologists to communicate with patients, little has been studied on what the patient prefers. Over 600 patients were surveyed on preferred methods of result delivery, and how much is really known about radiologists. The results revealed that patients actually prefer for their own physicians, or the referring physician, to deliver patient results. Regardless of who delivers the results, 64% of participants wanted the option to receive a copy of the results, and 85% wanted to see the image (Cabarrus, Naeger, Rybkin, & Qayyum, 2015).

These findings are important for all radiologists to understand so that providers may cater to the patients. Currently, the Arkansas group's results are only made readily available to the referring physicians. The referring physicians have access to a picture archiving and communication system (PACS), which they may log on to and retrieve reports and images as soon as the radiologist has read them. Patients may request a copy of the report and the image, but they are not automatically made for every appointment. To cater more to the patient, making discs and reports readily available to patients might be a direction the Arkansas group could take.

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Websites. Arlene Fink and John C. Beck conducted a mixed-methods study that developed and evaluated an interactive website program to help older adults conduct high-quality online health-related searches. Focus groups and interviews were created for 64 participants, which revealed the participants' preferences for online instructions and layouts. Fink and Beck's new program resulted in higher ratings for overall usability and ability for participants to learn compared to typical tutorials (Fink & Beck, 2015).

Based on the study results, suggestions for creating websites that are more attractive and usable for older adults include making the website's information easily accessible for those with limited literacy capabilities (Fink & Beck, 2015).

The National Assessment of Adult Literacy found that 71% of adults older than age 60 have difficulty using print materials, 80% have difficulty using documents such as forms or charts, and 68% have difficulty with interpreting numbers and doing calculations (Fink & Beck, 2015, p. 646).

The study also revealed that interactive websites that contain additional information or links to additional information were preferred. Websites with white spaces, bullets, and short text were more attractive and easy to follow for participants. Website accessibility for different ethnicities was another attractive feature, such as a translation option (Fink & Beck, 2015). This would be a great feature for the Arkansas radiology group to include on the practice website because a vast majority of the group's serviced patients are Spanish speaking.

Marketing. The study by Levin, Rao, Flanders, Sundaram, and Colarossi (2016) will be one of the most beneficial for in this project as it specifically targets radiology practices, and

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delves more into marketing a radiology profession without focusing entirely on social media.

Like many other medical professions, radiology has several target audiences that it must reach through marketing.

Radiology is perhaps even more complicated than the typical business because radiology groups have at least four different customer groups to satisfy: patients, referring physicians, hospital and health system administrators, and payers... We are now in an era of patient-centered medicine, and radiology cannot be an exception (Levin, Rao, Flanders, Sundaram, & Colarossi, 2016, p. 1260).

This study effectively considered marketing strategies that are directed toward patients and referring physicians, toward patients specifically, and toward referring physicians specifically.

To target both patients and referring physicians, an informative, discoverable, user-friendly and mobile-friendly website is recommended. This will allow radiologists to provide informative information for potential patients (Levin, et al, 2016). This is what the Arkansas radiology group is working toward, and what will be a great first step for any radiology group creating a practice marketing approach from scratch. The lists 16 desirable features of a radiology website, including (1) clinic locations, directions, and parking information as well as phone numbers, (2) a way for both referring physicians and patients to obtain images and reports, (3), a statement about who the group is and what they do, (4) frequently asked questions, and (6) a billing page or link with accepted insurance plans and a way for patients to pay bills (Levin, et al, 2016).

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The study also suggested hiring staff specifically for marketing. Larger groups and groups affiliated directly with hospitals may have 5 or more individuals to take care of the marketing for one aspect of the practice, such as outpatient facilities (Levin, et al, 2016). In the Arkansas group's organization, one individual focuses on marketing, but also focuses on numerous other tasks. As the group continues to grow, hiring designated marketing employees should be a considered.

A 2007 study revealed that the need for marketing in radiology due to increasing competition was an issue even ten years ago. In the year 2006 alone, the number of imaging studies done in the United States rose over 20%, making radiology a multitrillion dollar industry. This is actually a problem for traditional diagnostic imagers because the traditional diagnostic radiologists in the country are not the professionals seeing this growth. New, less experienced imagers are receiving this business. This article focused on marketing as a way for traditional, experienced diagnostic imagers to expand and protect group practices. Many other radiology marketing articles refer to two to four potential audiences for radiologists to consider. This article, however, listed nine: referring professionals, patients, families, hospitals, the government, payers, disease specific patient support groups, patient advocacy groups, and joint venture partners (Lexa, 2007).

Although most marketing efforts rely mainly on broadcast advertisement, that should not be the main focus of radiology marketing. Most consumers will not pay attention to a diagnostic imaging commercial or billboard, and most of them will not need an image to be taken within the week. The article even stated that the return on marketing investment (ROMI) with broadcast advertisement will, at best, result in breaking even. Even more interesting to note is that those

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radiology practices who used broadcast marketing found a greater ROMI when running their advertisement during infomercials rather than during prime-time television. Those watching primetime television are not interested in being interrupted during favorite sitcom, but those watching infomercials have proven more likely to follow up with advertisements by checking a practice schedule or making an appointment. Ultimately, the diagnostic imaging professionals know individual audiences the best and know how to reach them. The biggest issue is taking the initial step to promote the practice (Lexa, 2007). This has been an issue for the Arkansas radiology group as well. The group has been practicing since the 1980s, and marketing has been nearly nonexistent until this recent effort.

C. Matthew Hawkins looked at the concept of branding in radiology, which is a highly-neglected area of the marketing foundation. Hawkins, who at the time was a recent radiology graduate, discussed the common questions that are asked of radiology groups during interviews, and how senior colleagues have stressed that these answers are often very difficult to answer. If practicing radiologists cannot easily answer what their group's strengths are, and how their group excels in the diagnostic imaging market, what do patients and potential referring physicians think? Patients and referring physicians now have the capability to shop around for providers and services online now. Simply running a great practice is no longer enough. As healthcare becomes more patient-centered, patient and referring physician perception will dominate a group's reputation. (Hawkins, 2011).

“A brand symbolizes all of the information tied to a group, an organization, or an individual. A brand defines what separates a group from its competition” (Hawkins, 2011, p. 880). Many components make up a brand, from how one dresses, to how one answers the phone

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and how one writes reports. Patients will look up physician's online profiles and conduct online searches of their names, and what they find will shape their image of the physician and the practice.

Part of online marketing for physicians in particular outside of websites and social media profiles involves owning their online presence so that the only search results are not HealthGrades or Vitals profiles (Hawkins, 2011). Many marketing firms offer this service, where they go to such online third-party websites and claim the business, update the information, and put a link to the website. Even if these profiles are some of the top search results, they will contain enough information to lead the consumer to the correct place with the correct information. It is the job of the radiologists today to define and refine both their individual and groups brands, and to take control of their online presence.

In the article by Dr. Reginald Munden, former dentist, marketing and branding specifically for radiologists is discussed. He recalled when he first started as a dentist in a small town, and how his professional abilities were questioned because he did not drive an expensive car. This proves that professional marketing is going on constantly, regardless of whether or not what you own or what you are doing has to do with your profession. Many medical professionals view marketing as a fancy, flashy endeavor that is not associated with their profession. Today, marketing, even for radiologists, is just as important as the services provided (Munden, 2015).

Often referenced in marketing are the 5 P's: product, price, placement, promotion, and people. Knowing and understanding these 5 P's are used as a general guideline to understand and implement marketing. The product in radiology is both the patient and the image. Price in

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radiology is mostly out of the radiologist's control. Placement refers to how to product or products are placed in the marketplace or how they are branded. Promotion could take the form of brochures, communication with referring physicians, or advertising. People includes every person involved in the practice, from the receptionist to the technicians, and of course the radiologists (Munden, 2015). It will be important for the radiology group to identify each of the 5 P's and to formulate a marketing plan for them.

Lexa and Berlin's (2006) article revealed the great benefits of radiology marketing, and attempts to clear up some understandings surrounding radiology's use of marketing. Marketing in radiology is important to every position and sector of the profession, and the best marketing efforts vary between practices. It is undoubtedly a difficult profession to market due to the vast and varying audience radiologists must target. Dependent on the area of the country, some radiologists focus solely on the patient while other parts of the country focus on the referring physician. There is one site in the southeastern area of the United States where over 80% of the decisions regarding where to seek radiology services area decided by the patient. "Marketing is too important to leave to others" (Lexa & Berlin, 2006, p. 172). Radiologists must take ownership of their practice and their marketing. It has shown to increase monthly referrals and practice referral bases (Lexa & Berlin, 2006).

The authors of this article reiterated that marketing is not about being perfect. Strong marketing is, however, about competition, which is increasing in radiology specifically. Many professionals fear embracing marketing for fear of failing. Thankfully, marketing about looking better than competition, and is not as serious as the daily tasks a radiology faces in the profession. Marketing can be the one constant and the one area medical professionals have

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control of in the constantly changing healthcare market. More importantly, marketing is how professionals can virtually run their practice. In an increasingly virtual world, marketing is crucial (Lexa & Berlin, 2006). The radiologists in the radiology group have only recently begun showing an interest in marketing, specifically online marketing. The points presented in this article may be the points that turn their interest into a serious movement.

A radiology practice is often successful “in spite of what they do, not because of it” (Muroff, 2008, p. 986). Muroff’s article pointed out what great radiology practices do to take control of their practice and to be successful because of what they do. The eleventh differentiator between these radiology practices is marketing. Successful radiology practices understand the importance of marketing, and have plans, budgets, and participation in place to ensure this. One interesting point this article points out is that the best marketers for radiology practices are the radiologists themselves. Discussions with referring physicians over dinner is a great marketing tool that must be conducted by the radiologists (Muroff, 2008).

Marketing to referring physicians can be extremely invaluable to radiology practices. “Most referring physicians are not only unaware of the scope of our services but also are not attuned to the fact that our procedures are usually less expensive and less invasive than alternative procedures” (Muroff, 2008, p. 992). This is evident in the group’s imaging center. Referring physicians often call in imaging orders, unsure if the patient requires contrast. The center also receives calls inquiring about tests that are available, which are all listed on the company’s order form. Most marketing ventures are directed toward the patient, but referring physicians are just as important. Often, the radiologist never makes direct contact with the patient. The radiologists simply read the image, write the report, and make both available to the

referring physician. The relationship between the radiologist and the referring physician, therefore, is extremely important, especially for the parts of the country where business is created solely by referrals. Marketing can help increase the knowledge of patients and the knowledge of referring physicians.

Chapter 3: Methods of Data Collection

Methods. Through this nonexperimental project, an investigation was conducted to determine the most essential components to include when creating a radiology practice website. To do this, the Arkansas radiology group enlisted a marketing firm, surveyed consumers and physicians on perceptions of current practice websites, and evaluated components of twenty existing practice websites using a rubric analysis. Recent studies and articles on the topic were also utilized. Although the completion of the company's website will not be completed until later this year, the conducted investigations will provide a stable foundation for the group's future online presence.

To examine the components used by 20 existing radiology practice websites from across the United States, the company used 14 of the top 16 desirable website components recognized by the ACR as a guide for a rubric analysis (Appendix A), excluding the 2 components that are only used by academic departments (Levin, et al, 2016). Each website was rated between 1 and 5, depending on how many components were available on the website and how well the components were displayed. Specific requirements were included in the rubric to avoid ratings by individual preferences.

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Each website was given an overall score based on the rubric rating. The top 5 websites with the highest ratings were compared and used as example websites for the radiology group to present to the marketing firm. Average scores per website component were also evaluated to conclude which components were used the most among practice websites, and which components were used the least.

The radiology group took 3 of the scored websites – the highest score, an average score, and the lowest score – to use in the participant survey. 15 participants, including 3 referring physicians, observed each of these websites. Using a 5-point Likert-scale, the participants responded to 10 statements regarding perceptions of the websites by using degrees of agreement or disagreement to each statement. (Appendix 2). Participants who gave any aspect a negative score were given the opportunity to elaborate.

Upon its completion, this study will provide insight for radiology practices looking to improve their marketing and online presence. It will also help to increase health knowledge, specifically those who have or will use radiology services. For the Arkansas radiology group, the creation of an effective website will increase patient and referring physician perception and communication, as well as assist the company in growing its billing client base.

Results/Findings. Of the 20 group practice websites rated using the rubric analysis, none received a perfect score. The average score was 41.2/70, the highest score was 51/70, and the lowest score was 32/70. None of the websites contained a marketing video or a statement about radiation exposure, and only one website contained a section about quality metrics. Every website contained a list of the group's radiologists including biographies, and all but one website

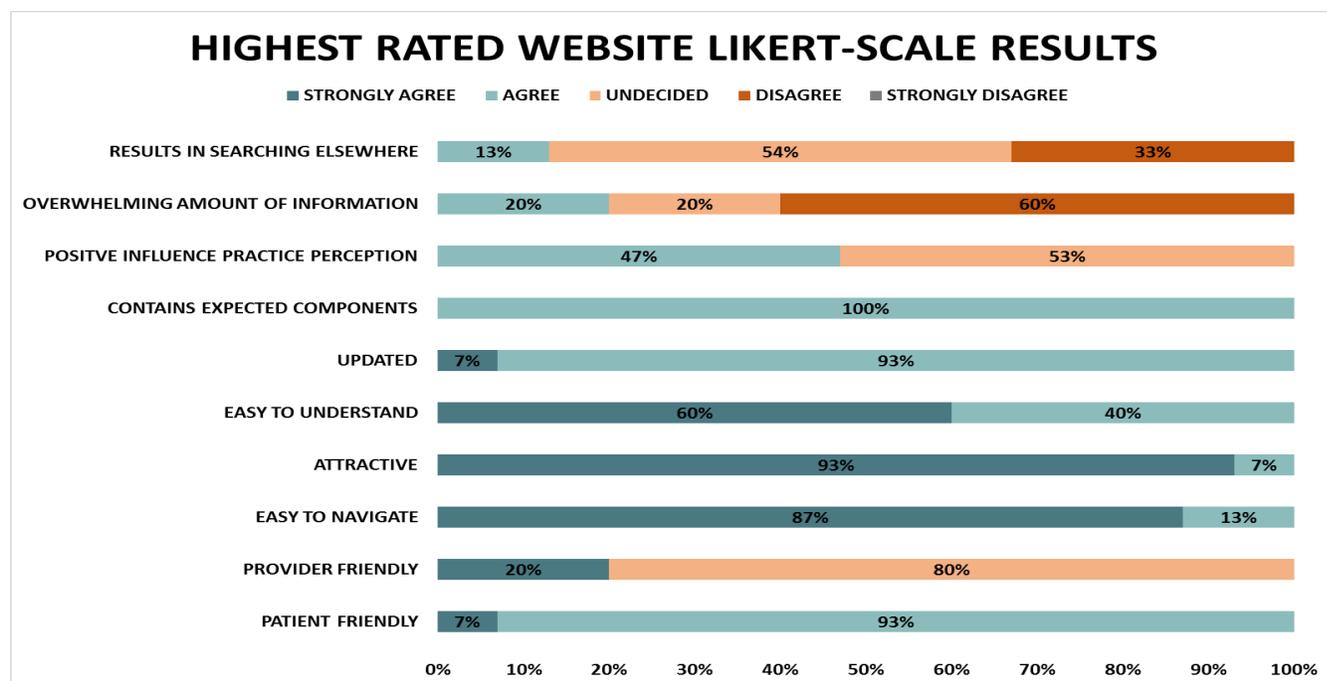
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contained a detailed list of services offered. 40% of websites contained physician and patient access to reports and images, and only 10% of websites contained online scheduling ability. 50% of websites contained a section for frequently asked questions, all of which included patient questions but left out referring physician questions.

Fifty percent of websites contained department news and accomplishments. Of the 50% that contained news, 40% contained outdated news that has not been updated in at least one year. Each website contained a message from the group about the history of the group, and all but one of the websites contained a statement about who radiologists are. General contact information was also listed on every website, but 30% of websites listed one phone number for all inquiries. The other 70% listed contact information for specific departments, and even specific individuals. 90% of websites included at least a billing department phone number. Of that 90%, 55% contained only a billing department phone number, 33% contained a billing number and online bill pay access, and 11% contained a billing number, online bill pay access, and a list of accepted insurance plans. 80% of websites contained locations, scheduling phone numbers, and directions, and 10% contained locations, scheduling phone numbers, directions, and parking information. Based on the average scores per website component, the top 5 components used by radiology group practice websites were (1) a list of the group's radiologists and biographies, (2) a list of services offered with explanations and links, (3) locations, scheduling, phone numbers, directions, and parking information, (4) a message from the group, department, or company about the history of the organization, and (5) a statement about who radiologists are and what they do. 1 had an average score of 5/5, 2 had an average score of 4.8/5, and 3, 4, and 5 had an average score of 4/5.

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Figure 1

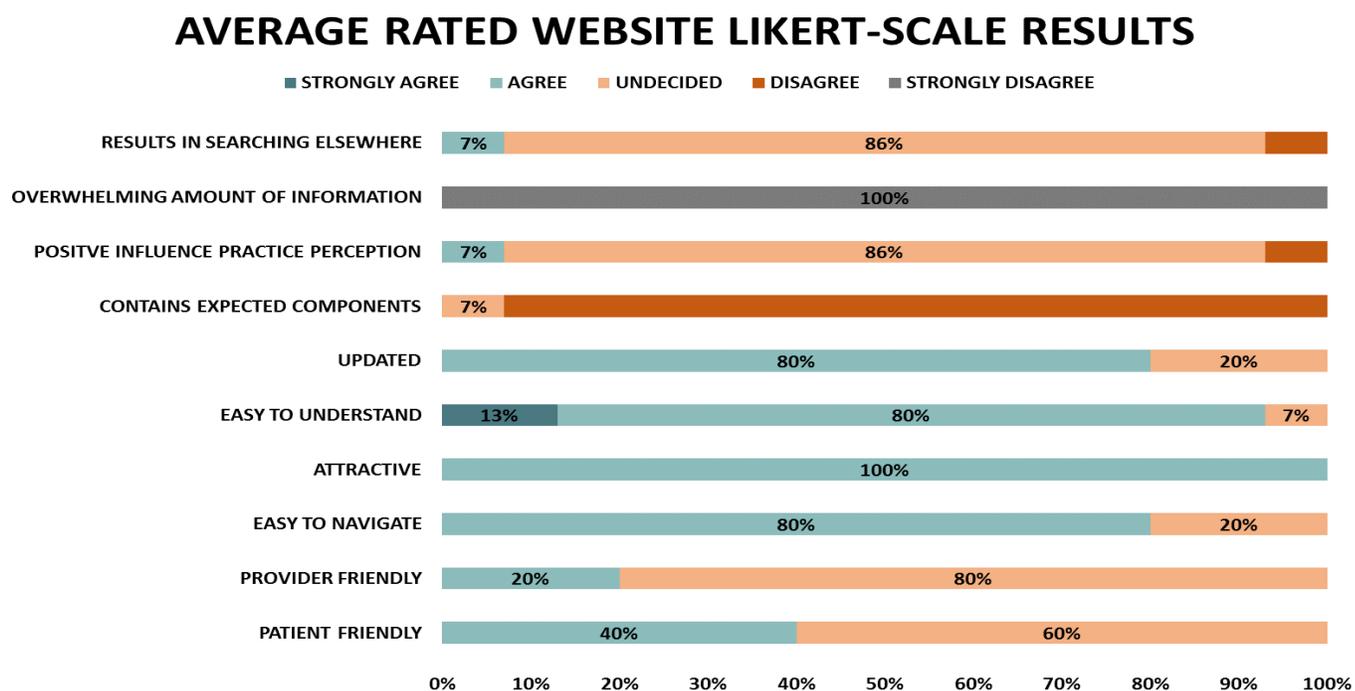


The highest scored website (51/70), average scored website (41/70), and lowest scored website (32/70) were observed by 15 participants. All participants, both patients and providers, found the highest scored website to be user friendly to patients (Figure 1). Patient participants mostly scored the website's provider-friendliness as undecided, but each of the 3 referring physicians either agreed or strongly agreed that the website was provider-friendly. All participants either agreed or strongly agreed that the website was easy to navigate, and that the website contains helpful, easily understood, updated information. Participants also either agreed or strongly agreed that the website contained components expected of a radiology practice website. 20% of participants thought the website contained an overwhelming amount of information, and only 13% agreed that a continued search for information would be necessary after viewing this website. All participants appreciated the website's specific tabs for physicians

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and for patients, as well as patient and physician portals. The only downfall to the website based on participant ratings was the website attractiveness. The website contains a great menu bar, but the website pages require a lot of scrolling for information.

Figure 2

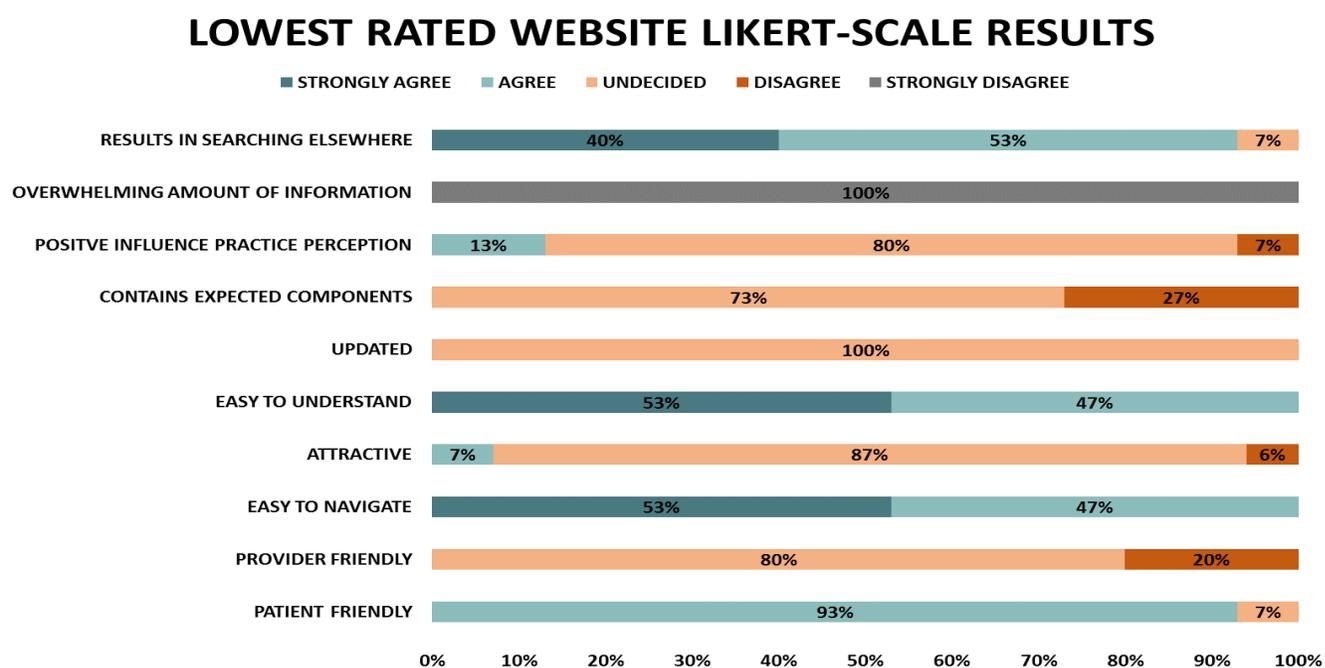


Participants found the average scored website (41/70) to be more visually attractive than the highest scored website (Figure 2). However, 58% of patient participants were undecided on whether or not they found the website to be user-friendly to patients. The other 42% of patient participants agreed that the website was user-friendly to patients primarily due to the easily accessible bill pay tab. All 3 of the referring physician participants agreed that this website was more user-friendly to providers, and that the one component that should be added would be a direct link or physician portal to PACS. 80% of participants agreed that the website was easy to navigate and understand, and that it appears to be up-to-date. None of the participants agreed that

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the website contained an overwhelming amount of information, but many commented that the website did not seem to have enough information. 93% of participants disagreed that the website contained the expected components of a radiology practice website, as the website does not contain scheduling abilities or access to images or reports, and half of the website is taken up by pictures. 86% of participants were undecided about the website's influence on perceptions and searching elsewhere for radiology information.

Figure 3.



The lowest rated website (32/70) was rated the highest among the three websites for attractiveness and layouts (Figure 3). Little scrolling is involved on the website, and easy to access tabs and a menu bar are available. 91% of patient participants agreed that this website is user-friendly to patients, but none of the referring physician participants found this website to be user-friendly to providers. Each participant agreed or strongly agreed that the website was easy

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to navigate, and contained information that was easy to understand. Each participant was also undecided on how updated the website was. 73% of participants were undecided about the website containing expected website components, and the remaining 27% disagreed because the website only contained a few basics such as contact information and radiologist profiles. 80% of participants were undecided on whether the website positively or negatively influenced practice perceptions, and 93% of participants agreed or strongly agreed that the website would result in a continued search for additional information. All participants strongly disagreed that the website contained an overwhelming amount of information. Like the average website, this website does not seem to have enough information.

Summary & Conclusion. Having a website is a key component to keeping radiology practices relevant and competitive. Consumers are taking to the internet to research and even choose healthcare services, and lacking a practice website could allow potential patients and referring physicians to look elsewhere. Making sure a practice website does not negatively affect the practice perception is just as important as having one. Although the majority of existing practice websites include radiologist profiles and contact information, patients and referring providers are more concerned with access to images and reports, and being able to pay bills online. Many websites either contain too much information or too little information. Although too much information can be potentially overwhelming, having too little information could result in consumers looking to other websites, and even other providers.

Healthcare Administrator's Role. Many large practices have marketing departments or specific marketing individuals, but many other small practices – like the one that conducted this study – have one individual who is responsible for marketing among many other managerial

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activities. All final decisions in the initial creation and the updating of practice websites must go through the administrator and the physicians. It is the role of the administrators to keep up with the overall marketing of a practice. Radiologists hardly see patients. Instead, they stay busy in a dark reading room, so facetime with patients cannot be relied on. Administrators are often the face of the practice, and the go-to individual for any matters regarding the group. Effort must be put into marketing, and administrators must kick start that effort.

Policy Implications. As professional websites in healthcare begin to grow along with demand, strict policies may need to be in place regarding what information is allowed to be shared on websites, both by the professional and by the patient. Although most radiology practice websites do not currently have ways for referring physicians or patients to schedule online, this is what the consumers want and what may be more common in the future. Although more convenient, there are many things that must take place before online scheduling in radiology can take place in this area. Many insurances require pre-authorization before images can be scheduled, making scheduling a more complicated process. As this demand grows, insurance companies may need to reassess current structures and find ways to make online scheduling a reality. Policies pertaining to what information can be shared online and the process of ordering images may apply on a national level, as the Health Insurance Portability and Accountability Act (HIPAA) and insurance requirements are hurdles for radiologists across the nation.

Challenges and Future Research. One of the greatest challenges in this study was the time limitation. The radiology group is in the beginning stages of website creation. Research has

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been done, but the company's contract with a local marketing firm was signed a week ago. If this study spanned the course of a year or more, website analytics could be gathered from the marketing firm that would give a lot more insight into what is used and what is needed in a radiology practice website, particularly in and around Arkansas. More time would have also allowed more individuals to be surveyed and more websites to be rated, creating more accurate results.

Future research needs to be done on radiology billing website components. Most of the current online radiology marketing studies and articles revolve around social media. Only a few cover radiology practice websites, and even fewer cover radiology billing websites. This may be a future topic of research for the Arkansas radiology group practice to investigate, as they also own a billing company as well as an imaging center. For groups with in-house billing, or for groups who own a billing company, understanding the most beneficial components to include on the billing side of radiology marketing will be additionally advantageous.

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APPENDIX A

CURRENT RADIOLOGY PRACTICE WEBSITE ANALYSIS RUBRIC

Appendix A. Current Radiology Practice Website Analysis Rubric					
Component	5	4	3	2	1
1. Locations, scheduling phone number, directions, and parking information	Website contains each component in easily accessible locations.	Website contains some of the components in easily accessible locations.	Website contains each component but they are difficult to locate.	Website contains some of the components but they are difficult to locate.	Website does not contain any of the components.
2. Scheduling for new patients, returning patients, and referring physicians with the ability to enter patient demographics.	Website contains scheduling ability and ability to enter all patient demographics.	Website contains scheduling ability and ability to enter some patient demographics.	Website contains scheduling ability but no ability to enter patient demographics.	Website only contains phone number to call and schedule patients.	Website contains no access or information to schedule patients.
3. Billing information including a list of accepted insurance plans, a number for billing inquiries, and access to online bill pay.	Website includes all billing information and access.	Website includes billing number and access to online bill pay.	Website includes only online bill pay or only billing number.	Website mentions billing but no direct information or access.	Website includes no billing information.
4. Physician and patient access to reports and images	Access to reports is easily located.	Access to reports is available but difficult to locate.	Only physician access to reports is available.	Website contains statement that reports are available upon request.	No information or access to reports is available.
5. List of services offered with explanations and links to additional information.	List of services and links are easily accessible.	List of services and links are available but not easily accessible.	List of services or lists of links are available only.	Brief practice information is available.	No service or additional information is available.
6. Contact information for patients and referring physicians to communicate with the department or the radiologist through video chat or messaging.	Contact information for both patients and referring physicians are available in multiple formats.	Contact information for both patients and referring physicians are available in one format.	Contact information for either patient or referring physician is available in multiple formats.	Contact information for either patient or referring physician is available in one format.	Contact information with the department or radiologist is not available.
7. A message from the group, department, or company about the history of the organization, including a thank you to customers and referring physicians.	A message about the company and history as well as a thank you is present.	A message about the company and history is present.	A message about the company is present.	A thank you to the customers is present.	No information regarding the company, history, or customer appreciation is present.
8. A statement about who radiologists are and what they do. This can be incorporated into component 7.	A detailed statement about radiologists and what they do is visibly displayed.	A detailed statement about radiologists and what they do is listed, but not readily accessible.	A general statement about radiologists and what they do is visibly displayed.	A general statement about radiologists and what they do is listed, but not readily accessible.	No information regarding radiologists is mentioned on the website.
9. Department news and accomplishments.	Updated department news and accomplishments are easily located.	Updated department news and accomplishments are available but not readily accessible.	Outdated department news and accomplishments are easily located.	Outdated department news and accomplishments are available but not readily accessible.	No department news or accomplishments are listed.
10. A list of the group's radiologists, including brief biographies.	A list of the group's radiologists including biographies, pictures, and specialties is included.	A list of the group's radiologists including brief biographies and pictures is included.	A list of the group's radiologists and brief biographies is included.	A list of the group's radiologist's names is included.	No group radiologist information is included.
11. A statement about radiation exposure and what the group is doing to minimize it.	A detailed statement about radiation exposure and how to minimize it is available.	A general statement about radiation exposure and how to minimize it is available.	A statement about radiation exposure is mentioned off of the home page.	Radiation exposure is briefly acknowledged.	Nothing about radiation exposure is mentioned.
12. A statement about quality metrics that are monitored by the group and the importance of them.	A detailed statement about quality metrics, how they are monitored, and why they are important is included.	A general statement about quality metrics, how they are monitored, and why they are important is included.	A statement about quality metrics and why they are important is included.	A statement about quality metrics is included.	Nothing about quality metrics is mentioned.
13. A section listing frequently asked questions, specifically for patients.	A detailed list of frequently asked questions for patient and referring physicians is listed.	A short list of frequently asked questions for patients and referring physicians is listed.	A list of frequently asked questions for patients or physicians only is listed.	A comment box or phone number is available for questions.	No questions are listed and contact information is available for questions.
14. A marketing video summarizing some of the above components.	A personalized marketing video including a detailed overview of the practice is included.	A personalized marketing video including a generalized overview of the practice is included.	A personalized marketing video covering one aspect of the practice is included.	A general marketing video from another organization is included.	No marketing video is included.

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APPENDIX B

WEBSITE PERCEPTION SURVEY

Appendix B. Website Perception Survey					
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. The website is user-friendly to patients.	<input type="radio"/>				
2. The website is user-friendly to providers.	<input type="radio"/>				
3. The website is easy to navigate.	<input type="radio"/>				
4. The website has attractive color schemes, photos, and layouts.	<input type="radio"/>				
5. The website contains helpful information that is easy to understand.	<input type="radio"/>				
6. The website is up-to-date.	<input type="radio"/>				
7. The website contains components that are expected of a radiology practice website.	<input type="radio"/>				
8. The website positively influences my perception of the practice.	<input type="radio"/>				
9. The website contains an overwhelming amount of information.	<input type="radio"/>				
10. The website results in searching elsewhere for information.	<input type="radio"/>				