PODIATRY AND THE INTERNET

Medical Information on the Internet

Here's a look at the online health information-seeking behavior of healthcare professionals and consumers.

BY WILLIAM P. SCHERER, DPM

Goals and Objectives

After completing this CME activity, the participant will:

1) Understand the difference between healthcare providers and consumers re: how they search for health information online.

2) Learn the impact that computer hardware, software, and the Internet have changed how health information is disseminated.

3) Review the popularity of the top websites on the Internet that provide healthcare information.

4) Understand how Wikipedia is a valuable resource to both healthcare professional and consumer.

5) Understand how social media has changed the doctor-patient relationship.

6) Develop an understanding of the popular free and paid medical smartphone apps.

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*Following this article, an answer sheet and full set of instructions are provided (pg. 150).—**Editor***

Abstract

The author presents a review and analysis of the online health information-seeking behavior of healthcare professionals and consumers. With the emergence of computers, mobile devices, web browsers, search engines, and the popularity of Web 2.0 websites, both healthcare providers and healthcare consumers have unprecedented, easy, and rapid access to worldwide information and healthcare content. Approximately 89% of adults use the Internet, 70% of adults own a smartphone such as an Apple iPhone, and over 80% of adults use online resources for health information. The author discovered that the general public generally relies upon Google, Wikipedia, social media, and free iPhone apps as

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their primary source of online health information, while healthcare professionals bypass many of the sources of information that consumers rely on and gravitate towards more traditional resources like the many governmental healthcare organization's websites and databases, professional medical associations, and paid iPhone apps from established publishers as their primary sources of online health information. As individuals add to the worldwide wealth of healthcare knowledge, these factors are changing the doctor-patient relationship and empowering society to take significantly more involvement and control of their own healthcare.

Introduction

There is little debate among healthcare professionals that Internet-based sources of information have become the de facto first line choice for healthcare providers and healthcare consumers with regards to seeking health information, providing a quick, simple, efficient, and elegant method of information gathering.

The emergence and popularity of Web 2.0 websites that incorporate extensive use of user-generated content, blogs, social media, content tags, member comments, multimedia, and hypertext links have allowed both healthcare providers and healthcare consumers easy and rapid access to worldwide information and healthcare content that is unprecedented in the history of humankind.[1] Since the introduction of the Apple iPhone in 2007, there has also been an incredible growth and usage of medical apps on mobile and tablet devices that are designed for both professional healthcare providers and consumers seeking heath information.

With the market penetration of desktop computers, laptops, tablets, mobile devices, broadband internet, networks, wireless access points, and Internet enabled devices, the ability of any individual or group of individuals to access health information, tap into deep sources of digital content, and even add to the worldwide wealth of healthcare knowledge and experience is dramatically changing the doctor-pa-

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56% of Internet users looking for health information are researching various medical treatments or procedures.

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tient relationship and empowering society to have significantly more involvement in and take more control of their own healthcare than ever before.[2]

Our society is in the process of a dramatic paradigm shift in the way healthcare professionals and consumers seek out healthcare information, research disease symptoms, self-diagnose, learn about new procedures, evaluate different treatment options, collaborate with healthcare providers, participate with patient support groups, seek alternative treatments, and seek opinions.

Overview

The number of healthcare providers and consumers seeking health information on the Internet has been steadily increasing since the advent of

web browsers. According to the Pew Research Center, "89% of U.S. adults use the Internet, 70% of U.S. adults own a smartphone, and 80% of Internet users say they looked online for health information within the past year", which represents the "third most popular online activity following email and search engine usage."[4] In addition, the percentage of Internet users looking for health information consists of: 66% seeking knowledge about a specific disease or medical problem, 56% researching various medical treatments or procedures, 44% for data about physicians or other healthcare professionals, and 36% for information about medical centers or hospitals.[5]

Generally, when healthcare professionals and consumers begin their online search for healthcare information, they start with the use of an Internet search engine or web search engine consisting of custom software that is designed to search, crawl, index, and organize the billions of pages of information on the Internet, store the results in huge databases, allow users to search for keywords, and get a list of results with hypertext links to the source of the information.[6]

Google is currently the most popular search engine in the world and has a market share of 62.5%, while Microsoft sites were the second most popular, has a market share of 25.1%, and Verizon Media (Yahoo) is the third most popular with a market share of 11.5%.[7] For the search year 2018, the top trending "Health Topics" searched for on Google were: keto diet, amyotrophic lateral sclerosis, endometriosis, marijuana, flu symptoms, flu contagiousness, implan-

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FIGURE 1:

GoodRx.com
Top 10 Prescription Drugs

Atorvastatin (Lipitor)

Levothyroxine (Synthroid, Levoxyl, Unithroid)

Lisinopril (Prinivil, Zestril)

Gabapentin (Neurontin)

Amlodipine (Norvasc)

Albuterol (Ventolin, Accuneb, Proair, Proventil)

Hydrocodone/Acetaminophen (Vicodin, Norco, Xodol)

Omeprazole (Prilosec)

Amoxicillin (Amoxil)

Losartan (Cozaar)

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tation bleeding, tiredness, heartburn, and high blood pressure. For July 2019, the top "Medication" searched for on Good Rx was Lipitor.[8] Figure 1 shows the top ten.

Although there may be many different ways to measure, compare, and stratify the impact of online health information sources, the Information Technology community has embraced Alexa.com, a subsidiary of Amazon.com that provides web traffic data, global rankings, and analytics on millions of websites, and publishes various category lists such as The Top 15 Health Websites. Alexa uses a variety of techniques to estimate Internet traffic, such as creating vast proprietary information warehouses based on the global traffic pattern of Internet users in addition to capturing traffic data directly from websites that have installed the Alexa script on their websites and certified their metrics. The Alexa rank is "calculated using a proprietary methodology that combines a site's estimated average of daily unique visitors and its estimated number of page views over the past 3 months".[9] The 2019 Alexa.com Top 10 Health Websites are shown in Figure 2.

One glaring omission from the Alexa Top 15 Health Websites is Wikipedia, a free online encyclopedia that allows any user to collaboratively edit its content. (Alexa is looking only at healthcare information websites, not general websites, where Wikipedia ranks very high.) This website is currently the #7 most popular website in the USA, has over 38 million articles in over 250 different languages, and has approximately 500 million unique monthly visitors.[10] Laurent and Vickerk determined the tremendous power of Wikipedia as a source of online health information. They found that "Wikipedia ranked among the first ten results in 71–85% of the tested health information keywords" in various Internet search engines and that Wikipedia had more relevant information

and has bypassed both MedlinePlus and NHS Direct Online in rankings.[11]

Web 2.0 applications, including Wikis, are still at the beginning stages of their evolution, yet they offer a tremendous opportunity for online information sharing and collaboration.[12] There is a palpable fear among some healthcare professionals that Wikipedia will entirely displace traditional medical publications; however, oth-

FIGURE 2:

The 2019 Alexa.com Top 10 Health Websites and Monthly Visitors

WebMD	80 million
NIH	55 million
Yahoo Health	50 million
Mayo Clinic	30 million
MedicineNet	25 million
Drugs	22 million
EverydayHealth	18 million
HealthGrades	17 million
Healthline	16 million
Mervola	15 million

ers are steadfast in their belief that the Wikipedia "wisdom of crowds" articles will not replace traditional academic peer-reviewed scientific journals.[13] Notwithstanding, several Wikipedia entries have been favorably reviewed, meeting or exceeding information contained in similar *Britannica Encyclopedia* entries.[14-15]

YouTube, a subsidiary of Google, is the most popular online video-sharing website on the Internet and the third most popular website in the world,[7] allowing users to view, upload, comment, create channels, and view analytics on a tremendous amount of user-generated and professional videos. YouTube has over one billion users and everyday people watch hundreds of millions of hours on YouTube and generate billions of views.[16] Online videos hosted by YouTube are becoming a valuable resource for health information

as the information is provided by healthcare professionals, government organizations, medical corporations, and individual patients themselves.[17] Jamwal highlighted the benefit of YouTube in palliative medical care regarding education, practice, and research, and found the resource a double-edged sword, in that there was a huge volume of health information, but most of it lacked scientific rigor.[18]

Madathil reviewed 18 peer-reviewed articles about the impact of YouTube on healthcare providers and consumers and concluded: "(1) YouTube is increasingly being used as a platform for disseminating health information; (2) content and frame analysis were the primary techniques employed by researchers to analyze the characteristics of this information; (3) YouTube contains misleading information, primarily anecdotal, that contradicts the reference standards, and the probability of a lay user finding such content is relatively high; (4) the retrieval of relevant videos is dependent on the search term used; and (5) videos from government organizations and professional associations contained trustworthy and high-quality information."[19]

Founded in 2004, Facebook is a social website with a "mission to give people the power to share and make the world more open and connected." People use Facebook to "stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them."[20] Facebook has over 2.4 billion monthly active users and 1.4 billion mobile active users, 68% of U.S. adults have an account, with over five billion pieces of information shared each day in the form of comments, status updates, likes, shares, and photos.[21] Facebook offers their members a tremendous range of health information that can be helpful to users in terms of learning and understanding medical topics. A variety of health information such as disease outbreaks, endemics, emergencies, and natural disasters can be

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obtained by reading other members' status updates through Facebook.[22]

Although there are not a significant number of peer-review scientific articles on the risks and/or benefits of using Facebook for health information, some of the early studies suggest that the use of social media such as Facebook and other online health information sites can have a positive benefit for the health of consumers. One study suggests that Facebook can be used as a valuable healthcare resource for individuals facing a health condition that requires medical follow-ups and health-related moral support; and effective implementation "could result in long-term improvement in health literacy, health empowerment, and effective self-management of health."[23]

Twitter is a social networking service that allows users to post frequent updates to their followers and the general public. A twitter update, called a Tweet, is limited to 140 characters and can be posted using a web browser, instant message, or cell phone text message.[24] In one of the first scientific studies conducted to determine how health information about antibiotics is disseminated through Twitter, the authors concluded that Twitter can potentially be used "to gather important real-time health data and may provide a venue to identify potential misuse or misunderstanding of antibiotics, promote positive behavior change, and disseminate valid health information."[25]

The second most popular health information website on the Internet, an agency of the U.S. Department of Health & Human Services, is a biomedical and health-related research facility known as the National Institutes of Health (nih.gov). This website is the most trafficked Internet health information resource for the online health information-seeking behavior of healthcare professionals and consumers, averaging over 55 million unique visitors per month.[26] PubMed, maintained by the NIH, is a web tool that allows users free access to search the MEDLINE database that currently has over 25 million records dating back to 1966 and has over 40 million monthly visitors.[27] PubMed Central (PMC), part of the U.S. National Institutes of Health's National Library of Medicine, is a no-cost, web-based, full-text archive of various science journals that generates approximately 28 million visitors and is the NIH repository for life sciences, peer-reviewed, primary research reports.[28]

The most popular health information website that is popular with healthcare providers and consumers, and has over 80 million unique visitors per month is WebMD, "a resource for consumers, physicians, nurses, and educators that includes news, chat forums, health quizzes, and consumer product updates."[29] The public portals division comprises the WebMD Health Network, which includes WebMD.com, a website primarily designed for healthcare information for non-professionals; Medscape.com, a web resource that provides health information and tools for physicians, nurses, and allied health members; and several other websites that contain valuable healthcare and wellness information.[30]

> **Google is the most popular search engine for seeking healthcare information online.**

FIGURE 3:
Popular Free and Paid iPhone Medical Apps

Healow	Free	Patient access EMR
GoodRx	Free	Prescription drug price tracker
MyChart	Free	Patient access EMR
Leafly	Free	Marijuana strain and dispensary reviews
Touch Surgery	Free	Interactive surgical simulator
Ovia Pregnancy	Free	Pregnancy tracker and baby calendar
Ovia Fertility	Free	Ovulation calculator and period tracker
FollowMyHeath	Free	Patient access EMR
1800Contacts	Free	Ordering contact lenses
Epocrates Medical	In-App	Medical references and tools
My Baby's Beat	$4.99	Baby heart monitor
The Stanford Guide	In-App	Antimicrobial therapy
Davis's Drug Guide	In-App	Drug guide
Icoder 2016 CPT-4	$74.99	CPT-4 Reference
Davis's Drug Guide 2016	$39.99	Drug guide
Pregnancy +	In-App	Pregnancy tracker
Essential Anatomy 5	$24.99	Anatomy image reference
Vargo Anesthesia tool	$39.99	Anesthesia reference
Nursing Drug Handbook	In-App	Drug monographs

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Other extremely popular healthcare information websites include: Centers for Disease Control and Prevention (cdc.gov) with a "mission to promote health and quality of life by preventing and controlling disease, injury, and disability" and has a robust website that includes guidelines, articles, and resources for consumers and health professionals; Drugs.com, the largest and highest trafficked source of online drug information and has online tools to provide "free, accurate, and independent advice on more than 24,000 prescription drugs, over-the-counter medicines and natural products"; and HealthGrades (healthgrades.com) that allows people to research, compare, and connect with physicians and other healthcare professionals and also publishes information about experience, patient satisfaction, and hospital quality.

Smartphones are increasingly relied upon by healthcare professionals to facilitate communication, information retrieval, and patient care documentation.[31] Apple has an open source framework called ResearchKit that enables iOS apps to become a valuable medical database for medical research by tracking and recording "visual consent flows, real-time dynamic active tasks, and surveys using a variety of customizable modules that can build upon and share with the medical community."[32]

A recent study of the accredited National Health Service Health Apps Library found "poor and inconsistent implementation of privacy and security, with 28% of apps lacking a privacy policy and one even transmitting personally identifying data that the policy claimed would be anonymous."[33] As a result of concerns for healthcare information privacy, one article suggested that Apple should "ensure transparency of algorithms, data sharing, and data quality along with providing a proper balance between innovation and caution, which maintains patient

safety above all other factors."[34] A list of popular free and paid iPhone Medical Apps is shown in Figure 3.

Discussion

The current healthcare marketplace is in the midst of an information revolution where the majority of healthcare professionals and consumers are seeking health information on the Internet about various medical conditions and treatment options. The proliferation of computers, tablets, smartphones, and the internet have all played a role in helping individuals access a vast resource of historical and breaking health information that can "empower consumers to take a more active role" in the medical decision-making with healthcare providers.[35] There is no question that for most individuals, this developing ability will produce improved outcomes and benefit society; however, there are many

new and unknown risks in allowing untrained citizens to self-diagnose and attempt to take more control over their diagnostic tests and treatments.

It is generally assumed that if providers and consumers have easy and fast access to relevant, accurate, and high-quality health information, then there should be a correlation with better decision-making regarding rendering healthcare. However, if these Internet searches for information lead users to false or unproven health information, then there is cause for concern for the medical community about the ultimate healthcare decisions of consumers.[36]

With the advent of the modern-day web browser and search engine technology such as Google, the ability for individuals to easily and quickly search an almost infinite amount of healthcare data and information has never been easier. In fact, it appears that most healthcare professionals and consumers begin their quest to find online healthcare information with the aid of a search engine first and then choose a result from a list of options to

investigate further. Most providers and consumers search for health information that encompass terms that include specific diseases, medical symptoms, various treatment options, surgical or laboratory procedures, and "on any given day, more people are posing health questions to Google than posing health questions to their doctors."[37]

In reviewing the top ten health websites on the Internet, there appears to be a split between websites that cater primarily to healthcare professionals such as NIH, PubMed, PMC, and CDC; and websites that cater primarily to healthcare consumers such as WebMD, My Fitness Pal, and Weight Watchers. Other websites offer an interesting mixture of health information features for both the healthcare professional and consumer such as MayoClinic, Drugs. com, and Medscape.

In reviewing smartphone apps, the most popular free apps generally appealed to consumers seeking inexpensive health information, and the top grossing paid apps appeared to better represent healthcare professions seeking a higher quality and more accountable product. Three of the top free apps are patient access EMR programs that are linked with much larger information systems. Other popular free medical apps help consumers find low drug prices, find sources of marijuana, track and monitor pregnancy, and even order replacement contact lenses. Although many apps may advertise that they are free to encourage people to download them and install them on various devices, it should be noted that many times, the functionality or amount of health information is limited and oftentimes they prompt users to purchase additional features or content via an "In-App purchase" option.

Most of the top-grossing medical apps are digital versions of popular medical reference books that are used by healthcare professionals such as: *Epocrates Medical, The Stanford Guide to Antimicrobial Therapy, Davis's Drug Prices, CPT-4 Codes,* anatomy reference images, anesthesia references, and *Nursing Drug Handbook,* and have an average price of approximately $35 per app.

WebMD is the
most popular healthcare website.

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Conclusion

The results are staggering in terms of the availability of both high quality and questionable medical information, and the ability of anyone to quickly and easily access the information. It is hard to imagine that for hundreds and even thousands of years, the traditional delivery of health information was slow, very limited, and difficult to access for the average person. Although the online health information revolution is only a decade old, it is rapidly expanding at an exponential rate. It is fascinating to document the potential impact of anyone being able to thoroughly research any medical symptom, condition, diagnosis, treatment, outcome, drug, surgery or technique, and tap into a world-wide collective shared experience not only with millions of peer-reviewed journals, but with other individuals that may be suffering the same condition and share their experiences on social media.

There is little doubt that today, nearly 100% of the people who want to seek out online health information have the capability to complete this task. With almost 90% of U.S. adults responding that they use the Internet, the question now should be—who is not using the Internet and why. In addition, individuals are increasing their mobile usage and the trend of accessing health information via mobile computing devices is showing no signs of slowing down.

The traditional computer tools and resources of health information seekers and anyone seeking any type of information on the Internet are exactly the same and include: desktop computers, laptops, tablets, smartphones, web browsers, Internet enabled devices, search engines that allow users to tap into the billions of information rich databases, websites, blogs, and social media that are located all across the world. Even though there are hundreds of outstanding medical information websites, it appears that the general public relies on Google, YouTube, Facebook, Twitter, Wikipedia, and a plethora of free mobile apps as their primary source of online health information. In contrast, healthcare professionals are bypassing many of the sources of information that consumers rely on and gravitate towards more traditional resources like the U.S. Department of Health & Human Services, National Institutes of Health, PubMed, MEDLINE, WebMD, Centers for Disease Control and Prevention, Drugs.com, Health-Grades, and paid iPhone apps from established publishers as their primary sources of online health information.

The future of online health information appears to be split between the control of established medical communities with rigorous standards of accountability and, in sharp contrast, the consumer community that leverages Web 2.0 user-generated content along with powerful smartphone devices to self-document, self-report, collaborate with strangers, and even self-treat themselves and others with less than standardized protocols. It is too early to determine how the established medical community will begin to accept and even data mine the vast amount of medical information that is being generated by millions of users on the Internet. This will be an interesting topic to study in the future. However, the data is crystal clear that when individuals are able to access unrestrictive online health information and even become part of the global open-information sharing community, there is a dramatic shift in the doctor-patient relationship as individuals become much more involved in their own healthcare and assume more control than ever before. **PM**

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CME **EXAMINATION**

SEE ANSWER SHEET ON PAGE 151.

1) What hardware device can be used to access online health information?
  A) Desktop computer
  B) Laptop computer
  C) Mobile smartphone
  D) All of the above

2) What percentage of U.S. adults are using the Internet?
  A) 89%
  B) 80%
  C) 70%
  D) 56%

3) What percentage of U.S. adults own a smartphone?
  A) 89%
  B) 80%
  C) 70%
  D) 56%

4) What percentage of Internet users looking for health information are researching various medical treatments or procedures?
  A) 89%
  B) 80%
  C) 70%
  D) 56%

5) What is the most popular search engine for seeking healthcare information online?
  A) Microsoft
  B) Google
  C) Yahoo
  D) Facebook

6) According to GoodRx, which of the following was NOT one of the top 10 prescription drugs that patients were searching for online?
  A) Lipitor
  B) Zestril
  C) Penlac
  D) Amoxil

7) Based on monthly visitors, what healthcare website was the most popular?

    A) WebMD

    B) NIH

    C) Healthline

    D) HealthGrades

8) Which of the following statements about Wikipedia is true?

    A) It is one of the Top 10 most popular websites in USA

    B) Some healthcare professionals fear it may displace medical publications

    C) Wikipedia meets or exceeds information in Britannica encyclopedia

    D) All of the above are true

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9) What website is the most popular online video sharing resource that allows users to view, upload, comment, and create video channels?

    A) WebMD

    B) YouTube

    C) Twitter

    D) Facebook

10) What website has the mission to give people the power to share and make the world more open and connected?

    A) Facebook

    B) Twitter

    C) Healthgrades

    D) YouTube

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    Each of the 10 lessons will count as 1.5 credits; thus a maximum of 15 CME credits may be earned during any 12-month period. You may select any 10 in a 24-month period.

    The Podiatry Management Magazine *CME program is approved by the Council on Podiatric Education in all states where credits in instructional media are accepted. This article is approved for 1.5 Continuing Education Contact Hours (or 0.15 CEU's) for each examination successfully completed.*

    PM's privacy policy can be found at http:// podiatrym.com/privacy.cfm.

    This CME is valid for CPME-approved credits for three (3) years from the date of publication.

Enrollment/Testing Information and Answer Sheet

Note: If you are mailing your answer sheet, you must complete all info. on the front and back of this page and mail with your credit card information to: **Program Management Services, P.O. Box 490, East Islip, NY 11730.**

TESTING, GRADING AND PAYMENT INSTRUCTIONS

(1) Each participant achieving a passing grade of 70% or higher on any examination will receive an official computer form stating the number of CE credits earned. This form should be safeguarded and may be used as documentation of credits earned.

(2) Participants receiving a failing grade on any exam will be notified and permitted to take one re-examination at no extra cost.

(3) All answers should be recorded on the answer form below. For each question, decide which choice is the best answer, and circle the letter representing your choice.

(4) Complete all other information on the front and back of this page.

(5) Choose one out of the 3 options for testgrading: mail-in, fax, or phone. To select the type of service that best suits your needs, please read the following section, "Test Grading Options".

TEST GRADING OPTIONS

Mail-In Grading

To receive your CME certificate, complete all information and mail with your credit card information to: **Program Management Services, P.O. Box 490, East Islip, NY 11730. PLEASE DO NOT SEND WITH SIGNATURE REQUIRED, AS THESE WILL NOT BE ACCEPTED.**

There is **no charge** for the mail-in service if you have already enrolled in the annual exam CME program, and we receive this exam during your current enrollment period. If you are not enrolled, please send $29.00 per exam, or $249 to cover all 10 exams (thus saving $41 over the cost of 10 individual exam fees).

Facsimile Grading

To receive your CME certificate, complete all information and fax 24 hours a day to 1631-532-1964. Your CME certificate will be dated and mailed within 48 hours. This service is available for $2.95 per exam if you are currently enrolled in the annual 10-exam CME program (and this exam falls within your enrollment period), and can be charged to your Visa, MasterCard, or American Express.

If you are *not* enrolled in the annual 10-exam CME program, the fee is $29 per exam.

Phone-In Grading

You may also complete your exam by using the toll-free service. Call 1-800-232-4422 from 10 a.m. to 5 p.m. EST, Monday through Friday. Your CME certificate will be dated the same day you call and mailed within 48 hours. There is a $2.95 charge for this service if you are currently enrolled in the annual 10-exam CME program (and this exam falls within your enrollment period), and this fee can be charged to your Visa, Mastercard, American Express, or Discover. If you are not currently enrolled, the fee is $29 per exam. When you call, please have ready:

1. Program number (Month and Year)
2. The answers to the test
3. Credit card information

In the event you require additional CME information, please contact PMS, Inc., at **1-631-563-1604**.

ENROLLMENT FORM & ANSWER SHEET

Please print clearly...Certificate will be issued from information below.

Name _____ Email Address_____

Please Print: FIRST   MI   LAST

Address_____

City_____ State_____ Zip_____

Charge to: _____Visa _____ MasterCard _____ American Express

Card #_____Exp. Date_____ Zip for credit card_____

Note: Credit card is the only method of payment. Checks are no longer accepted.

Signature_____ Email Address_____ Daytime Phone_____

State License(s)_____ Is this a new address? Yes_____ No_____

Check one: _____ I am currently enrolled. (If faxing or phoning in your answer form please note that $2.95 will be charged to your credit card.)

           _____ I am not enrolled. Enclosed is my credit card information. Please charge my credit card $29.00 for each exam submitted. (plus $2.95 for each exam if submitting by fax or phone).

           _____ I am not enrolled and I wish to enroll for 10 courses at $249.00 (thus saving me $41 over the cost of 10 individual exam fees). I understand there will be an additional fee of $2.95 for any exam I wish to submit via fax or phone.

Over, please

Continuing Medical Education

EXAM #3/20
Medical Information on the Internet
(Scherer)

Circle:

1. A B C D   6. A B C D

2. A B C D   7. A B C D

3. A B C D   8. A B C D

4. A B C D   9. A B C D

5. A B C D   10. A B C D

Medical Education Lesson Evaluation

Strongly agree [5]	Agree [4]	Neutral [3]	Disagree [2]	Strongly disagree [1]

1) This CME lesson was helpful to my practice ____

2) The educational objectives were accomplished ____

3) I will apply the knowledge I learned from this lesson ____

4) I will makes changes in my practice behavior based on this lesson ____

5) This lesson presented quality information with adequate current references ____

6) What overall grade would you assign this lesson?
                    A   B   C   D

7) This activity was balanced and free of commercial bias.
              Yes _____   No _____

8) What overall grade would you assign to the overall management of this activity?
                    A   B   C   D

How long did it take you to complete this lesson?
              _____hour _____minutes

What topics would you like to see in future CME lessons ?
Please list :

_____

_____

_____

_____

_____