

# **The Medium is the Messenger: Using Podcasting to Deliver Consumer Health Information**

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*Podcasting is a method of distributing audio content over the Internet that can then be downloaded to mobile players. Podcasts have the potential to change the way consumer health information is delivered to the end user. The fact is that podcast use is growing; more and more people are using podcasts to obtain information. Podcast topics are incredibly diverse, from pure entertainment to academic and professional contexts. This article analyzes the current landscape of consumer health podcasting.*

**KEYWORDS** *Audio, consumer health information, iPod, podcasting, podcasts, Web 2.0*

## INTRODUCTION

Podcasts are digital audio and/or video files that can be downloaded to portable media players, such as iPods, or to a user's computer desktop.<sup>1</sup> Software such as Apple's iTunes make it easy to search and download these files directly to a computer and then transfer them to a portable device. After the files are downloaded, they can then be listened to at the convenience of the user. The files are the podcast content and are sometimes called episodes.

The use of podcasts has grown tremendously in recent years. A Pew Internet and American Life Project survey on podcast downloading from 2008 revealed that 19% of Internet users say that they have used podcasts, whether for viewing in real-time or downloading to be viewed and/or listened to later. This number is up from previous reports (12% in August

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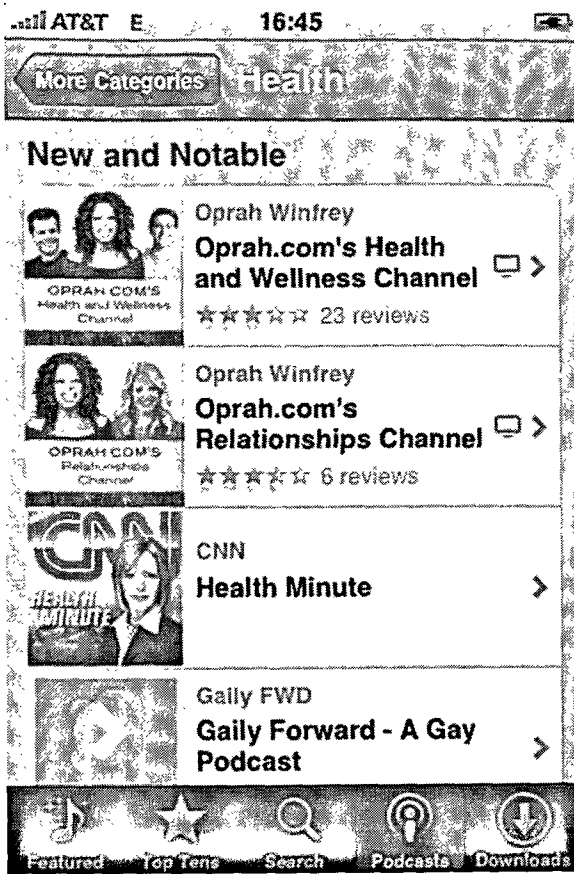
2006 and 7% in February–April 2006).<sup>2</sup> By the end of 2006, 90 million iPods and 2 billion songs from the iTunes store had been sold.<sup>3</sup> Despite the fact that the word podcast is a “portmanteau” of the words “iPod” and “broadcast,” the portable device used to listen to and/or watch a podcast need not be an iPod.<sup>4</sup> The Microsoft Zune is an example of an alternative to the iPod; this device can also tune into radio stations. It should be noted that the iPod by itself cannot currently receive radio signals without third-party add-ons. Another example of a portable media player is the Rio. Most media players can only play files in the mp3 format, but the Rio also can play files in the WMA format. Some Rio players are even more versatile and support additional audio file-types such as Ogg Vorbis and FLAC. These file types and terms will be described in more detail in this article.

Podcasts are available to virtually anyone with Internet access and a computer. Requirements for access include Internet access, a device that can play audio files (e.g., mp3, mp4, Ogg Vorbis, WMA, etc.), media software (e.g., iTunes, Windows Media Player, Real Player), and speakers or headphones. Many podcasts are not one-time happenings but are in fact created regularly on a particular topic, much like a radio program of yesteryear. A user can subscribe to podcast content with free aggregator or “podcatcher” services such as Google Reader, Bloglines, or iTunes.<sup>5</sup> There is no need for the user to continually check each podcast they subscribe to for more episodes. The software does much of the work by periodically checking and updating the subscription. The content can then be transferred to the device for later listening while on the treadmill, taking a walk, or even riding mass transit.<sup>6</sup>

Podcasting works well with RSS (Really Simple Syndication). RSS technology allows the user to subscribe to regularly updated content (or episodes) via an aggregator or feed reader. Some examples of these are explained further in this article. Recent enhancements in technology allow the user to download podcast content by using Internet access that is built in to devices other than a computer; examples of this include the iPhone and the iPod Touch. The iPhone, for example, has iTunes built-in. Users can search iTunes for relevant podcasts and subscribe to them. Since the iPhone also has a built-in iPod, they can be played back immediately with no computer mediation needed (see Figure 1).

## CONSUMER HEALTH PODCAST LANDSCAPE

A review of the literature shows that there are many more articles on using podcasts in an educational way for medical students, nursing students, and more, but there is a lack of research on the impact of podcasts on the actual delivery of consumer health information. Despite this lack of research, what is obvious is that the number of podcasts is growing related to consumer health. Some podcasts are published by commercial entities, medical doctors



**FIGURE 1** Subscribing to podcasts on the iPhone is easily done with iTunes built into the phone.

or nurses, medical or nursing schools, or libraries, and others by governmental agencies. Common search engines such as Google do not have an advanced search feature that allows for searching specific audio file types at the time of this writing.<sup>7</sup> There are some institutions that have created their own listings of selected podcasts. An example is the Southwestern Medical Center at the University of Texas. The site lists 30 podcasts for consumer health as of this date. The full list can be found at <<http://www3.utsouthwestern.edu/library/guides/podcasts/podcasts.cfm>>. Medworm <<http://www.medworm.com/rss/Consumer-Health-Advice-91.php>> also lists consumer health podcasts. The University of Pennsylvania Biomedical Library has published an online guide on finding and using medical podcasts at <<http://gethelp.library.upenn.edu/guides/biomed/podcasts.html>>.

Following is a small sampling of consumer health podcasts that can be found today and their associations with commercial entities or particular bias. These sites were chosen to show the breadth of topics from the 30 podcasts

listed in the Consumer Health Podcast Guide at the Southwestern Medical Center at the University of Texas.

### Ivanhoe's Medical Breakthroughs

<[http://ivanhoe.com/about/p\\_podcasts.cfm](http://ivanhoe.com/about/p_podcasts.cfm)>

This podcast includes information related to breakthroughs in medicine, staying healthy, and advice for women from women. Some recent episodes have targeted women and heart health, medicinal mushrooms, and drug-free help for attention deficit disorder. Ivanhoe is a news gathering agency. Their shows are not peer-reviewed, and they rely on medical doctors to substantiate claims made in stories. They do not list the names of the medical doctors on their Web site on whose opinions they rely.

### Ask the Naked Scientists

<<http://www.thenakedscientists.com/HTML/podcasts/>>

The Naked Scientists is a group of physicians and scientists from Cambridge University in England. Bios and contact information for the Naked Scientists are listed on their site. They host an hour long, weekly podcast about science. Some of their recent podcasts include New Diseases, the Science of Vision, Cancer, and Disco Psychology (the science of dancing and drinking). They have also recorded podcasts about food experiments. Not included as part of a downloadable podcast but available on the Web site are transcripts of the shows (see Figure 2).

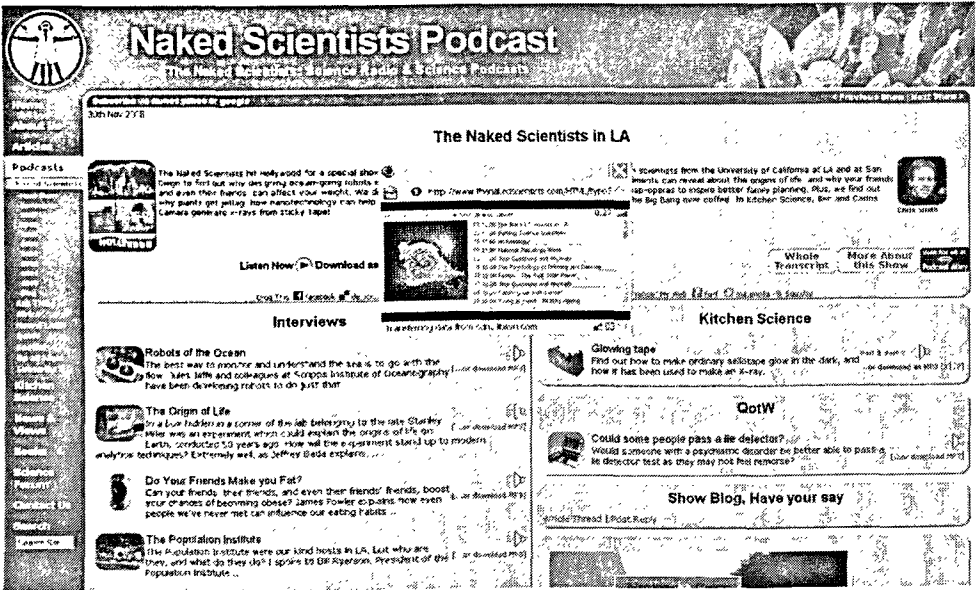


FIGURE 2 Naked scientists podcast.

## Family Health

<<http://fhradio.org>>

This podcast is a production of the Ohio University College of Osteopathic Medicine and the Ohio University Center for Public Media. The Web site for Family Health lists the credentials for the hosts of the podcast and their affiliations. They provide short (two-and-one-half minute) podcasts on common health problems and the latest developments in health care. How diet and lifestyle affect blood pressure, how to shop for a proper cane, and how to avoid radiation exposure are just a few of the recent podcasts they have made available on their site.

## Sound Medicine

<<http://soundmedicine.iu.edu>>

Indiana University and partners produce this podcast. Some recent topics include Medicare scams, Gulf War illness updated information, and kids with arthritis. It is a weekly show that can also be found on WFYI 90.1. Listeners can either subscribe to the podcast or listen to it live on the radio.

## OTHER WAYS TO FIND CONSUMER HEALTH PODCASTS

One way to find health podcasts is through journal articles such as this one. Most often, however, persons will be seeking a particular topic or will want to browse. There are numerous ways to do this. iTunes <<http://www.apple.com/itunes>>, the software program created by Apple, makes it easy to find and download podcasts. Doing a simple browse (by simply clicking on “Podcasts” in the iTunes store and then the “Health” Category) uncovers some featured health podcasts. Performing a search of the iTunes store using the keywords *consumer* and *health* reveals results from all areas of the store. iTunesU, which is an educational subset of iTunes proper, lists nine podcasts. Here are some examples:

- Consumer Health (Emory University) – Medical experts from Emory and Emory Healthcare provide information on diagnosis and treatment of diseases, sports medicine, fitness, and so forth. Time lengths range from four minutes to twelve minutes each.
- MiniMedical School (Emory University) – These podcasts have been created and designed for consumers to be able to emulate the medical school experience. MiniMedical School for 2008 features 11 of Emory School of Medicine’s top faculty. Time lengths range from about 45 minutes to just over an hour each, and subjects include allergies, memory advances, heart health, men’s health, and respiratory health.

- Focused on Health (M.D. Anderson Cancer Center at University of Texas) – Topics include obesity, mammograms, cancer prevention, and cessation of smoking. This is a monthly newsletter and teaches listeners about well-balanced diets, fitting exercise into your routine, and cancer screening. They range in length from 90 seconds to five minutes each. They are also available as video podcasts.
- Biomedical Informatics (University of Utah School of Medicine) – The School of Medicine has a National Library of Medicine (NLM) training grant in biomedical informatics. As of December 9, 2008, there were eight featured lectures in podcast form. Time lengths range from about 30 minutes to 45 minutes. There are video versions of each of the audio podcasts available. Video podcasts are sometimes referred to as “vodcasts.”<sup>6</sup>

There is no cost for downloading or listening to these podcasts.

As for the non-iTunesU podcasts on consumer health, there were a larger number represented. These include MedlinePlus: NLM Director's Comments (weekly brief updates to MedlinePlus by NLM director Dr. Donald Lindberg), Medical News from *Ivanhoe.com*, Tempur-Pedic Health and Wellness Podcast Series, and Your Health Now (Merck). Doing a more general search in iTunes of the term “health” returns many more results. Health sciences librarians can be of service to their patrons by explaining how to discern quality versus quantity.

Google Reader <<http://www.google.com/reader>> and Bloglines <<http://www.bloglines.com>> are also tools that can be used to discover podcasts on consumer health. The results of the searches must be looked at closely, because not all are actual podcasts but may be blogs or news articles that mention consumer health podcasts.

Performing a simple search in Google for the terms “consumer health podcast” returns about 313,000 results. A health sciences librarian would be instrumental in helping consumers to evaluate results for their needs. Add the word “directory” to this same search in Google and the results are 124,000. It is likely that podcast directories come and go on a regular basis, so again it is important to include the health sciences librarian in determining relevancy of results. When searching in Google for the terms “podcast directory,” some popular (based on ranking) podcast directories appear at the top.

There are seemingly hundreds of podcast directories on the World Wide Web. With the proliferation of podcast search tools, and the fact that they do not index the same podcasts, this can make for a time-consuming search. The search engine Yahoo! has an audio search <<http://audio.search.yahoo.com>>. When the search terms “consumer health” were used in a query, four results were returned. Podcast Alley <<http://www.podcastalley.com>> is an example of a subject-specific search tool. This search tool places podcasts into categories. The health category contains approximately 1,200 podcasts. The description of this genre is: Athletic, Nutrition, Work-Out, and other health

and fitness related podcasts. A search of the terms “consumer” and “health” in Podcast Alley resulted in about 200 listings. Another search tool, PodcastDirectory <<http://www.podcastdirectory.com>>, also has a health category, but it is not clear as to how many actual podcasts are listed. Once podcasts that appear to be relevant to the interest of the user are discovered by searching, users should be discriminating and assess the accuracy, relevancy, and reliability of the results from any search tool they use to find consumer health podcasts.

## SUBSCRIBING AND LISTENING

Searching for podcasts is only part of the process. As mentioned in the introduction, one does not need any mp3 player or other portable player to hear a podcast. It should be noted, however, that there might be some quirks with using Web-based services such as Google Reader and Bloglines to subscribe and listen to podcasts. Google Reader embeds anything that is not text into subscribed feeds. Depending on what version of Adobe Flash Player <<http://getadobe.com/flashplayer/>> is installed on the end user’s machine, the embedded player for podcasts may or not appear for items. This is not an insurmountable problem, because the audio or video file is usually available for download via a link.

One solution is to go out to the original item (usually the Web site where it came from) and see if the audio file can be found. Typically there is a direct link to the podcast file available on the Web page where the podcast is promoted. Users can click on this direct link and play the file in the default program on the computer for this file type. It is usually possible to right-click on this direct link and save the actual audio file to the computer. Another solution would be to upgrade the free Flash Player and re-open Google Reader. Similar problems might occur for Bloglines users. While not the only site to have done so, the Southwestern Medical Center at the University of Texas Web site includes some useful links to sites that describe how to subscribe to and even create podcasts.

Using RSS to subscribe to the podcast content ensures that the listener will receive regularly updated content, as it is published. The aggregator you choose to use to subscribe checks the RSS feed to see if there are any updated audio files. The aggregator analyzes the feed on the computer and/or mobile device and determines what files need to be updated.<sup>8</sup>

There are multiple file types associated with podcasting. The terms “mp3” and “mp4” are commonly referred to when speaking of podcasts. As mentioned above, there are other file types, and it is worth noting their major differences and similarities:

- mp3—Created and developed by the Moving Picture Experts Group, it is a compressed audio file format that is commonly used to store audio files on a hard drive.

- **mp4**—This is a protected .aac audio file for the iTunes music store. It incorporates Apple Computer's DRM copy protection, which sets limits on the number of computers where a particular file can be played. It is also a standard for video. Both .mp3 and .mp4 file types work on multiple devices.
- **Ogg Vorbis (.ogg)**—Similar to an .mp3 file but sound quality is usually better. This file type is not compressed so it is usually much larger in size.
- **WMA**—Windows Media Audio File, compressed with Windows Media. This is a proprietary file format developed by Microsoft. Common music players that can play this format: Microsoft Zune and the Disney Mix Stick.
- **WAV**—WAVE audio file – Standard digital audio file format that is more common on Windows-based systems.
- **AVI**—Audio Video Interweave – AVI files can be audio and video in one file.
- **FLAC**—Free Lossless Audio Codec – Similar to .mp3 but the audio is compressed without any loss in quality (i.e., “lossless” is a term used often for audio that has been modified or reduced in file size with no loss in the quality of the audio).

## QUALITY VERSUS QUANTITY

Podcasts have become a popular tool due to the ease of use and portability. The ease with which podcasts can be created also contributed to their popularity. It is possible to create medical content without much difficulty and make it available almost immediately on the World Wide Web. To create a podcast, all a user needs is a microphone to record voice, a computer to store the recording, an audio editing and recording program, and an Internet connection. An example of audio editing software is Audacity <<http://audacity.sourceforge.net>>, which is open-source freeware. Some other examples of audio editing software include GarageBand (Mac OS/X) <<http://www.apple.com/ilife/garageband/>>, Adobe Audition (Windows) <<http://www.adobe.com/products/audition/>>, and Snd <<http://ccrma.stanford.edu/software/snd/snd/snd.html>>.

The fact that anyone can create a podcast with the tools mentioned above may lead to concerns about quality, although the quality of a podcast recording does not seem to be of major concern among listeners.<sup>9</sup> The amount of health information available on the Internet can be overwhelming and can even cause stress. The many sources that make the information available often exacerbate the problem.<sup>10</sup> Much like being able to sift through Internet search results and rate them by accuracy, relevancy, bias, and other criteria, people can apply many of these same tools to discern legitimacy of podcasts. The National Library of Medicine (NLM) has put together a guide for evaluating the quality of health information on Web sites. Some questions



to ponder when considering the reliability of consumer health information received from a podcast:

- Consider the source and look for the evidence: who created the podcast? Can you contact the speaker(s) or the creators? Are their medical credentials readily available?
- Beware of bias: is there an obvious bias in the podcast to a particular drug or regimen? Does the podcast include advertising in the recording?
- Check for currency: podcasting is a relatively new medium but timeliness is important in regards to medical or health information.
- Be a cyberskeptic: be wary of talk of remedies, “breakthroughs,” or “secret ingredients.” Get a second opinion!
- Protect your privacy: is there a privacy policy for the podcast? Does there need to be one?<sup>11</sup>

While podcasting is becoming more recognized as a legitimate information delivery mechanism, even some medical students and other medical professionals say they “did not use medical or nursing podcasts because they did not know how to find reliable or clinically relevant ones.”<sup>9</sup>

## CONCLUSION

Podcasting is a fairly new method for obtaining consumer health information and is an important addition to traditional methods currently used by the general public. Many organizations, commercial entities, and practicing medical experts have created podcasts to inform the general public about health issues. Using already created guides of podcasts by reputable organizations will help consumers to locate the reliable and accurate information they need to stay healthy. Ensuring that health information professionals have access to these podcasts so they can in turn better guide their users is of paramount importance. The general public should look to their trusted information sources (i.e., libraries, their own doctors, and national organizations) for correct information.

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