

Fake medical news: avoiding pitfalls and perils

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In the present-day digital world, it is challenging to function comprehensively, given our increasing reliance on the internet, which has touched every aspect of our lives, including healthcare. We are constantly inundated by false information, including medical information—purposefully deployed—that spreads so quickly and persuades so effectively.¹ Some of this online health information includes interactive websites, internet-based games, online health press rooms, disease symptoms simulations, opinion polls, Twitter feeds, and doctor–patient online consultations.^{2–5} The professional and personal blogs, podcasts, chat rooms and forums are hallmarks of today’s medical care and a prominent source of health information among different kind of audiences, including the present group of general practitioners.

Hence, there is an ever-increasing need to check and evaluate data sources, particularly news items related to health and disease. It is imperative that online communities on social media platforms, such as Facebook, YouTube and Twitter, are aware of the authenticity of posted materials.⁶ Some of the vivid examples of this widespread dissemination of ‘fake news’ claim statements such as ‘birth control makes women unattractive and crazy’³ or ‘curing cancer using carrots’.⁷

In September 2017, a website called eternally.com, registered in Phoenix, Arizona, published an article with the headline ‘Dandelion weed can boost your immune system and cure cancer’. It was the most popular article on Facebook with the word ‘cancer’ in the headline last year, receiving more than 1.4 million shares, likes and comments, according to two separate web analysis tools. This potent root has no clinical evidence to support its miraculous characteristics.⁴ A PEW Foundation survey in 2013 in the USA revealed that 6 out of 10 Americans go online to find the cause for their medical condition.¹ Of those who found a diagnosis online, 35% of respondents said they did not follow this up

with a visit to a professional medical provider. The online medical advice can reinforce inaccurate views or biases, particularly when lay people follow online bloggers with false and inauthentic health-promoting or disease-alleviating claims.² The Food and Drug Administration in the past decade issued 90 warning letters to companies for producing products claiming to cure cancer. People who are suffering from such life-threatening diseases can fall prey to such claims or scams. Unfortunately, fake medical news can be written very persuasively, and it is easy to be seduced by false promises.

Before the age of internet, the news that was broadcast was produced and distributed by a few organisations or private companies like the British Broadcasting Corporation, the American Broadcasting Corporation or the National Broadcasting Company. These companies had a rigorous editorial process that checked for any fake news (minimised or eliminated unverifiable news). However, now, with the advent of the internet, any individual who has access to the internet is able to broadcast news online without being subjected to a rigorous editorial process.

In the last two decades, with the heralding of the World Wide Web and millions of websites on health issues, we have an explosion of varied information leading to information overload, according to Seymour, an assistant professor of oral health policy and epidemiology at Harvard University.^{8–10} As a result, we as health information consumers are faced with the conundrum of distinguishing between objective facts and personal opinions. In this atmosphere of information overload, objective facts are less influential in shaping public opinion than appeals to emotion and personal belief. For example, a personal account of battle with cancer using alternative therapies might have worked for an individual, but a personal narrative is used as an instrument to advocate for questionable therapies.



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Seymour opines that we have reached this situation in the present era because the balance of influence has shifted from broadcasters to individuals. Traditional broadcasters who used to provide authentic filtered information have been currently replaced by individual broadcasters who can put out information on the internet with similar ease as traditional broadcasters. The problem of fake news gets more exacerbated with connected networks that quickly reject any dissenter or contradictory piece of evidence.

Fake news consists of deliberate misinformation spread via traditional print and broadcast news media or on social media. Furthermore, fake news, particularly medical news, is written and published with the specific intent to mislead in order to damage an organisation and/or a person, often with sensationalist, exaggerated or patently false eye-catching headlines.

There are several types of fake news. The first consists of inadvertent reporting of mistakes. These happen because of errors and gaps in the editorial process. Second, sometimes rumours lead to fake news. The third consists of conspiracy theories; these are, by definition, difficult to verify as true or false, and they are typically originated by people who believe them to be true. Fourth, satire that is likely to be misconstrued as factual also lead to fake news. Fifth, false statements by medical professionals or pharma companies in order to make profits add to fake news. Lastly, the most problematic fake news consists of reports that are slanted or misleading but not outright false.¹¹

The conception of present-day information sharing is based on the historical marketplace of ideas metaphor.¹² According to this metaphor, the internet is akin to a vast market where any individual can sell and buy his or her produce. In the context of medical news, this idea applies as any individual can post medical information on the internet; however, in this open marketplace of medical information, the consumer has to use his or use personal discretion to choose the best information that he or she wants. The underlying philosophy behind this is that robust engagement of ideas in a marketplace deals with an opportunity of offering diverse valid ideas.¹³ Additionally, the assumption is that multiple ideas on medical information should be the corrective to bad ideas and falsehoods. In this vision, regulation of medical information is not advocated, given the logic that any editorial intervention would harm the marketplace's natural and dynamic progression.

Inherently, Syed¹⁴ plays a devil's advocate and argues that this vision has two fundamental flaws, depending on how much information is available in a society: she questions that, what happens when individuals do not interact with contrary medical information because they are easy to avoid? Moreover, what happens when medical information is not heard at all because there is too much of it? Furthermore, the marketplace of ideas¹² philosophy is based on the premise that the best and most accurate medical information wins. However, it fails to

acknowledge, let alone address, questions of power irrevocably relevant in the present-day internet era, particularly with social media.

As mentioned earlier, the original marketplace metaphor sprang forth a couple centuries ago when the capacity to reach the general population through 'more speech' was restricted to a powerful few. In that era, few individuals truly had monopoly over information (like a pulpit or a pamphlet), but communicating to the masses was unattainable to most. For example, a person such as a preacher was listened to and believed by the majority of people. Thus, the marketplace never needed to address these power differentials when only the powerful had the technology to speak at scale.

In the present-day era, the internet, particularly social media platforms, have radically improved the capabilities of many individuals to put out medical information, but the marketplace theory lags behind.¹² For example, the marketplace theory is not able to address powerful individuals who post medical information and drown out other voices. These include pharmaceutical companies who flood Twitter posts critical of their drug with unrelated content and hashtags to obscure the offending post.

Added to this dilemma is the present situation in which there is intense competition for legitimate medical information, given the easy access to online advertising revenue, increased political polarisation and the popularity of social media, primarily the Facebook News Feed. These play a major role in the spread of fake medical news. Anonymously hosted fake medical news websites lacking known publishers have also been guilty because they make it difficult to prosecute sources of fake news for libel. With the expansion of easy hosting technology, the need for views and ratings has been increasingly higher. For medical news outlets, the ability to attract viewers to their websites has become a bigger necessity in order to please advertisers that pay for advertising on their websites. Publishing medical information with false content has become an easy way to produce a big caption and attract viewers in order to benefit advertisers and ratings.

There are several questions that are faced by individuals who want to obtain authentic medical information. According to Syed,¹⁴ when we consume medical information on the internet, we should ask: how do digital technologies change the social conditions in which individuals put out medical information? Further, in the context of theorising for better trustworthy medical information, we modify and apply Syed's suggestions, arriving at five conspicuous ways to sort and help us filter fake medical news.¹⁴⁻¹⁶

APPLY MULTIPLE CHECKS WITH ONLINE INFORMATION

While searching for medical information, it is advisable to use multiple checks. Since there is far too much information to consume in an online environment, there is a need to weed out authentic factual information from

fiction. Thus, there is a necessity to provide information filters. It is important to use actual typed filters that explicitly consists of search terms or hashtags on Twitter. These can filter out misinformation: for example, if one searches ‘cancer cures’, one will receive very different results than if one searches ‘fake cancer’. Typed medical dedicated filters can also include trained individuals who curate what is accessible on social media, like the concept of medical information editors or moderators.^{15 16}

Additionally, medical authorities hosting information should employ less visible implicit filters. These obvious filters consist of mathematical equations that either watch your movements automatically or change based on how you filter by typing specific words. These filters explain how websites decide a particular content helps an individual user, with the goal of increasing that user’s attention to the medical website. Let us see how this applies to an individual using the internet. If an internet user glances at a ‘miracle cure’ or a ‘weight loss programme’, the internet predicts his/her search as a specific cue to look for cure and weight loss. Multiple such searches cue these frantic attempts and accordingly supply false medical information. Similarly, viewing a fake medical article that provides information about a miracle health cure continues to supply similar content to the internet user applying the mathematical formula, even though a filter is used. In essence, apply as many filters as possible to narrow down your search when seeking health information.

ENHANCING DIGITAL COMMUNITIES

Just like information filters assist in weeding out false medical content, we, as informed consumers of health information, need ‘digital community-based interpersonal filters’. An essential skill is to ask for suggestions from your immediate social network for places to look before seeking medical information. In this case, trusted information that has been found useful by your ‘closed in person group’ is tested. Likewise, if you find any information online that looks interesting, share it first with your immediate colleagues and get their opinions. The personal digital community that you belong to can easily overcome any problems of distances. Build your own trustworthy group of individuals; for example, one can have a closed Facebook online community network with a moderator who controls and appraises the information communicated via this network. In this way, there is a good filter, especially for fake information. Through developing these social networks, these groups can produce their own methods to create, put out and avoid fake medical information. Your personal online group—consisting of friends you trust—can provide you with different choices that are authentic based on their personal experiences. This mechanism will provide a ground-up approach that is full of personal trust as opposed to conventional confusing flow of information from the wide-open World Wide Web.^{14–16}

DETECTING AND AVOIDING INFORMATION GROWTH

Information on the internet spreads like wildfire, in part due to the ‘amplification’ process. During amplification (information growth or multiplication), fake medical information rotates through filters and reaches groups because of the immense capacity of the internet. There are a couple ways by which this happens: (1) to start with, untrustworthy medical news is generated in isolated areas of the internet, and (2) second, this medical information floods into traditional journalism outlets where it is accessible to everyone. It is here that this untrustworthy medical information overcomes the typed filters that we put in. After this process, individuals attach a hashtag that leads to more quick spread on Twitter, thus increasing the viewpoint that a specific medical story is good. It is here that the acceleration helps in perpetuating the viewpoint that a particular medical news story is authentic or not. The literature in personal psychology explains that we as consumers of information evaluate information logically and, more importantly, by a process of outside cues that point out if the information can be believed. The pointers of trust are related to if the information provider is trustworthy and also the information consumer’s earlier thoughts and a person’s familiarity with the information. The familiarity is most important here as we are more prone to believe the information that is told to us again and again. Avoiding the traps of amplification could help falling in the trap of consuming fake medical information.^{14–16}

RECOGNISE AND COUNTER PROFIT-RELATED MOTIVES

During each search for medical information, it is important to recognise that profit motive drives the social media platforms, and this makes fake medical news all the more prone to manipulation. Each online visit to a medical article results in adding to the popularity of the article thus helping raise the ad revenue generated. This is the incentive which fuels the desire to produce medical information which does not involve much editorial cross checking. Any popular medical information that is made up to further the profits is preferred by social media platforms. It can again happen in two ways: The advertising dynamics leads to adding to false content as unlike the traditional printing process, the online distribution does not involve the production and distribution efforts. The online production further fuels this process. Second, it is difficult to distinguish between advertising platforms disguised as medical websites. It leads to conflict between the authenticity of information and external monetary incentives. Computer-based algorithms can now filter ‘false advertisements’ ‘on the internet.’^{14–17}

PRACTICAL TIPS AND PROPOSED SOLUTIONS FOR MANAGING FAKE MEDICAL INFORMATION

In conclusion, we have three suggestions for medical and healthcare practitioners:

1. Each one of us has to empower ourselves with informed tools to navigate health information.
2. Healthcare practitioners need to use the following criteria for evaluating internet resources (particularly websites): applying multiple checks with online information, enhancing digital communities, detecting and avoiding information growth, and recognising profit-related motives.^{16 17}
3. The previously mentioned filters should greatly assist general practitioners as well as lay people in weeding out false information and news.

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