CONSUMER HEALTH INFORMATION WEBSITES
IN TAIWAN

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Abstract: Developers of consumer health information (CHI) websites and pages in Taiwan have included: 1) individuals; 2) general hospitals; 3) disease-oriented associations; and 4) government health administrative agencies; and 5) commercial corporations. General hospitals have developed the largest number of sites, but the quality of these sites differs widely. The unpredictable impact of health-oriented websites on medical care and the health of the public in general necessitates the establishment of credible instruments for the evaluation and rating of the quality of such websites and pages. In this paper, we describe the current status of CHI websites and pages in Taiwan. Suggestions for improving the content of CHI websites and pages are also proposed.

This brief communication provides an overview of CHI websites and pages in Taiwan. To provide this overview, we thoroughly searched the Internet for CHI websites and pages already existing in Taiwan. Nevertheless, some important sites or pages may have been overlooked.

CHe Web Sites and Pages in Taiwan

Individual websites and pages
Most of the early CHI websites and pages in Taiwan were developed by young medical doctors, students, or paramedical workers. These developers tended to focus more on the visual presentation of their sites than on the medical information content. Besides, providing health information, some of these sites also provide subscription-based CHI updates to subscribers via email.

A common function of CHI websites is to provide answers to consumer inquiries on the Internet and through e-mail. Our calculations indicate that the inquiry response times tend to vary widely, ranging from a few minutes to 2 to 3 days, with an average of about 24 hours. Some inquiries that are not CHI-related are not answered, leading to an average response rate of approximately 60%. This is an immediate but ineffective way of obtaining CHI is very popular in Taiwan. The most frequently asked questions concern sex, sexually transmitted diseases, surgical problems, women's diseases, and children's diseases.

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CHI-based portal websites provide directory services about CHI websites for consumers in Taiwan. At present, there is only one such site in Taiwan that provides information about how to obtain accurate, credible, and appropriate health information (Taiwan Medical Network in Chinese) — 
www.imn.org.tw; or http://www.imn.com.tw). It uses the
expertise of doctors and other medical professionals to set
through review health information in order to provide the
consumer with information.

Hospital-based websites
A number of academic medical centers and teaching hospitals (general hospitals accredited by the government for training residents) in Taiwan have their own websites. However, the
content of these sites tends to focus more on the administrative
and operational aspects of the medical center or teaching hospital than on CHI, especially in the early stages of their
development. Few of these sites have patient or consumer health
education as their main objective. Hence, these sites do not
attract the interest or meet the needs of visitors. These conditions
have improved recently.

Websites of administrative health agencies
The third type of CHI website in Taiwan is made up of those
developed by the administrative health agencies. There is one
national level administrative-health agency, the 23 city/counties
levels of administrative health agencies in Taiwan. Several have
their own websites. The website of the Department of Health
(DOH) and the DOH of Taipei city displays useful CHI. Although other government agency-based websites with CHI
content are expected to be developed, only several are currently
in operation and their quality is generally poor.

Other medical websites
Websites developed by disease-oriented foundations or asso-
ciations in Taiwan usually provide information about only
one particular disease or disease group. These sites often
contain information about one specific disease, written in
plain and simple language for the general public. Their
quality is generally good.

There are now several commercial CHI websites on the Internet.
The homepages of these sites tend to be superior in technical presentation to other types of CHI websites because of
a higher level of professional support. However, the accuracy of their CHI content needs to be evaluated.

Several medical association journals are beginning to develop websites. Users from the general public will
frequently visit professional resources when they are well
designed. For example, MEDLINE was originally intended to be
a professional medical resource for the medical community.
However, as access began open to the general public in 1998, a
number of consumers, patients, and parents have advocated
its use in learning more about personal health [3]. The
recent appearance of MEDLINE Plus, designed specially for the public,
together with MEDLINE is example of the increased use of
these services by the general public [4].

Discussion
Usefulness of websites and pages for CHI
Advances in Internet technology have led to a remarkable
impact on health care in which the general public can now use
CHI websites to rapidly obtain information on health,
diseases, the prevention of diseases, and the promotion of
health. Medicine is now seen as less of a mysterious branch
of knowledge to be understood only by medical profession-
als. Patients visiting their physicians can use this information
to ask informed questions about health and disease issues,
and physicians often need to know about what is on the
Internet in order to respond to specific patient problems.
Thus, the availability of accurate, appropriate, and high-
quality health information on the Internet is extremely important.
Progress in information and communication technologies
may help reduce health disparities. The benefits of electronic
health information and data are becoming apparent, and
proper public policy and measures are essential for the
efficient development and use of the World Wide Web
(WWW) [5–7].

Question and answer websites
Taiwan has several interactive websites that provide direct
and immediate responses to inquiries. This is unlike most
English-based websites, which typically provide
responses to inquiries several weeks after the inquiries
have been filed, sorted, and selected. To effectively operate
an interactive website, the cooperation of visitors is
very important. This kind of website is usually supported
and maintained by a group of enthusiastic volunteers.
However, maintaining focus on health-related topics can
be difficult and visitors who submit questions that are
extraneous to the purpose of the site can be a major burden.
The importance of being polite and respectful on the WWW
has been stressed [8].

Warnings and disclaimers
Although visitors are warned in disclaimers that information
appearing on websites is general medical knowledge and
may not be applicable to particular cases, it is doubtful that
the general public really understands the implications of such
disclaimers. It is, therefore, critical that the CHI providers be
careful not to mislead patients into believing that the informa-
tion given on the site is medical advice for their specific
conditions [9].

Easy access
A few high-quality CHI webpages are hidden so deep under
their homepages that they are difficult to access and visitors
reach them only on occasion. Although visitors to a hospital's
homepage may have different objectives (such as seeking
information about procedures for medical consultation or
finding a specific doctor's schedule), it is important that these
sites clearly direct visitors to the whereabouts of any specific
page on the site.

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Tradeoffs between accurate content and visual appeal
Although the rapid progress and development of digital technology and computer creation have led to an increase in the graphical content of webpages, these applications also slow down access time. CHI sites should be aimed primarily at the promotion of health and the prevention and cure of diseases. In these matters of life and death, all content must be readily accessible, accurate, and easily understandable by the general public. In this context, a clearly designed site that makes optimal use of simple HTML may be more suitable [10]. Some English websites are displayed in both graphical and text-only styles, but this kind of display is not yet common in Taiwan.

To be accurate, the content of websites should meet basic standards of authorship, attribution, disclosure, and currency [11]. Of the existing CHI webpages in Taiwan, only a few meet all of these criteria. Some do not give authors' names and the attributions are unclear. In addition, many do not post the dates of publication or revision. Because of the rapid progress in medical science, updating content at least once a year is definitely necessary, and when a new fact appears, the site should be updated as soon as possible. The benefits of the Internet are obvious, but inaccurate information could also result in potentially harmful effects. The establishment of a rating system for CHI on the Internet is sorely needed in Taiwan, but practical obstacles exist [12, 13].

Misplaced, broken, and obsolete hyperlinks
Many new websites have links that are obsolete or no longer active. This condition is common in the classified directory websites. This may be due to the carelessness of the web developers, who fail to check the activity of the hyperlinks. Webmasters should endeavor to update links as frequently as possible [10].

Search engines and categorized classifications
Similar to the problem with English search engines, massive searching results from Chinese search engines can be confusing. Although a categorized directory is much friendlier than a webpage full-text search engine, the question of unreasonable categorization still exists. At present in Taiwan, the items of grouping are often redundant, and many necessary groups are often lacking. Even with the appropriate grouping, the arrangement may be improper. This situation could be improved if webmasters allowed registrants to choose a category themselves. However, problems such as registration of websites to a group that favors their own interests are common. Since most webmasters cannot afford to pay for professionalism properly categorized and arrange the vast number of categories and pages, volunteers are typically used to resolve these problems. For the effective use of CHI websites and pages, a smart medical directory or well-designed search engine is needed.

For people whose mother tongue is English or some other alphabetic language, disease names are easily searched for by alphabetical order. For Chinese native language users, the idiographic Chinese characters are usually arranged by simplicity in the number of strokes of a character. Literature searches by these methods are cumbersome. Usually, people in Taiwan categorize a disease by the clinical area to which it pertains. A similar categorization on websites may facilitate understanding by the general population in Taiwan. Furthermore, frequently seen or hot-topic diseases could be grouped into one category, as is found in the "hot topic" list of the Healthfinder website [14].

The content levels of CHI
When a particular consumer views a CHI webpage, he or she may feel that the content is too esoteric to continue reading, while another may perceive that it is very well written and useful. This may not necessarily be related to their educational backgrounds. The first visitor may be browsing for any article to read while the second may be searching for a specific article. Therefore, at least two different levels of writing for the same heading are needed.

Need to make CHI websites more attractive
The appearance of the WWW and other elements of the Internet have had a profound influence on the prevention and treatment of diseases and on the promotion of health [5, 9]. In the US in 1997, nearly half of all Internet users sought health information on the Internet. In contrast, according to a study performed in 1998, only 1% of 25327 visitors in Taiwan have visited health-related websites, compared with 25% of visitors who visit leisure websites as their first and second main purpose [13]. The same study also disclosed that most Internet users in Taiwan are young (students) and that their interests are focused on Taiwanese leisure-related websites [15]. It is important that the motivation to visit health-related websites is encouraged and that such websites are maintained in a more attractive way [9].

Conclusion
The construction of a high-quality CHI website depends on the experience of the developers, the respect and quantity of medical information provided to the developers, and the existence of a credible party and instrument for the evaluation of the site content. Hospital administrators need to encourage their staff to provide information resources and to assist them if they are unfamiliar with web authoring. A conspicuous label for health information needs to be arranged for visitors, and changes of URLs should be minimized.

Finally, government agencies and medical societies should include the construction of CHI webpages as a criterion for the accreditation of teaching hospitals, finance and award individuals and institutions with high-quality CHI websites, and establish instruments for rating websites.

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