University of Michigan Health System
Program and Operations Analysis

Improving the Patient Information and Education of University of Michigan Health System Web Content

Final Report

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Date: December 21, 2004
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Executive Summary

The University of Michigan Health System (UMHS), including its many departments and clinics, has patient resources and information on the Internet. The resources and information can be broken down into two categories: Patient Information and Patient Education. Patient Information consists of information on maps, visiting hours and other basic resources. Patient Education consists of health and wellness information, specifically *Health Topics A to Z*. The UMHS website when benchmarked to other health websites ranked high in *Health Topics A to Z* information, but improvement areas were identified in sections including detailed maps, standardization and language availability. UMHS is considering expanding their website by adding a Patient Portal. A Patient Portal will allow the user to access a variety of information and services on the Internet through the UMHS gateway website. This information may include obtaining general hospital and clinic information, making and changing appointments, and accessing test results. The Patient Portal will offer a tighter integration of content between different aspects of UMHS websites. Since the current website lacks tools, infrastructure and organizational structure to effectively share and integrate content. This change would improve the user experience with the website and can be applied to the Patient Portal.

UMHS has divided the Patient Portal project into phases. Phase 1 includes Portal Registration, Prescription Renewal, Patient Information and Education, Secure Messaging, and Appointment Request. As a part of Phase 1, the Patient Portal Project Client asked the Patient Information and Education Analysis Team to conduct a project to evaluate the current UMHS website and offer recommendations for improvement. This project focuses on improving the usability of web content within the Patient Portal.

The project excluded tasks not related to the Patient Information and Education portion of the Patient Portal project. Specifically, the team did not study tasks related to Prescription Renewal, Appointment Requests, and Secure Messaging.

The results from this project will be used in the implementation of the goals listed below, including goals for the overall project and goals specific to the team project.

General goals UMHS hopes to accomplish by implementing the Patient Portal project are to:

- Increase patient access to UMHS information and services
- Reduce the cost of operations
- Compete with industry to maintain patient loyalty and satisfaction

Goals specific to the efforts of the Patient Information and Education Analysis Team are to:

- Assess the state of the information and education on the current public UMHS website through benchmarking and website comparisons
- Develop a recommendations report related to the design of information and education within the Patient Portal
To analyze the current UMHS website, data was collected from departments in UMHS. Studies were performed by the Patient Information Education Analysis Team comparing the UMHS website to other health websites. Specifically, the team performed the following tasks:

- Collected Hits and Visits Data
- Collected Interpreter Request Data
- Performed Comparison Study
  - Patient Information Comparison Study
  - Patient Education Comparison Study

Findings from the data and studies were used to draw conclusions about the current state of the UMHS website as follows:

- Most Visited Health Topics
- Most Visited Website Pages
- Most Requested Non-English Languages
- Patient Information Comparison Study
  - Number of Clicks to Reach Hospital Information
  - Usability Score of UMHS versus health websites
- Patient Education Study
  - *Health Topics A to Z* explained well
  - Recognize areas for improvement

The following conclusions and recommendations were formulated from the findings above:

- Focus on most visited health topics, making these areas more patient-centric
  - Heart topics
  - Your Child
  - Pregnancy
  - Weight topics
- Make *Health Topics A to Z* available in the three most requested non-English languages, which account for more than 50% of the interpretation requests
  - Spanish
  - Russian
  - Chinese
- Improve the quality and detail of maps and *Find a Doctor* searches
  - Maps at Cleveland Clinic have good characteristics
  - *Find a Doctor* searches should have more search fields and have a link from individual health topics
- Implement hierarchy in an overall UMHS site map
  - 83% of health websites studied had site maps
- Implement a consistent design template and logo for easier navigation and a constant reminder of where the user is
  - 67% of the health websites studied had consistent design templates and logo
• Implement use of *You Are Here* indicators to show users the path they took to get to the current page.
  o 58% of health sites studied had *You Are Here* indicators
• Link to external sources within *Health Topics A to Z*

The following observations were noticed by the team to improve the user’s experience but could not be investigated due to time constraints.
• Provide a basic version of M-Call Non-Standard Referral Procedure to UMHS website users
• Research option of *Health Topics A to Z* in database form

By implementing these recommendations, the Patient Portal can be more patient centric, more competitive in the health care industry, and increase access to UMHS.

The next step to this project will be to have the recommendations reviewed with the Patient Portal team and subject matter experts for validation and prioritization and those that impact vendor selection will be added to the Request for Proposal. The findings will be used during the project detailed web content design activities scheduled for the first and second quarter of 2005.
Introduction and Background

The University of Michigan Health System (UMHS), including its many departments and clinics, has patient resources and information on the Internet. Information on the UMHS website can be used for many reasons, such as to obtain maps, visiting hours and other basic resources. Also available are resources such as finding a doctor or clinic, and an information database to search for health and wellness information, specifically Health Topics A to Z. The UMHS website when benchmarked to other health websites ranked high in health topic information, but improvement areas were identified in sections including detailed maps, standardization and language availability. UMHS is considering expanding their website by adding a Patient Portal. A Patient Portal will allow the user to access a variety of information and services on the Internet through the UMHS gateway website. This information may include obtaining general hospital and clinic information, making and changing appointments, and accessing test results. UMHS is adding a Patient Portal to improve on privacy, patient specific information, and service needs. One opportunity with the Patient Portal is a tighter integration of content between different aspects of UMHS websites. Currently, the website lacks tools, infrastructure and organizational structure to effectively share and integrate content. This change would improve the user experience with the website and can be applied to the Patient Portal.

Project Scope
UMHS has broken the Patient Portal project into phases. Phase 1 includes Portal Registration, Prescription Renewal, Patient Information and Education, Secure Messaging, and Appointment Request. Patient Portal Project Client asked the Patient Information and Education Analysis Team to evaluate the current UMHS website and offer recommendations for improvement. This project focuses on improving the usability of web content within the Patient Portal (See Figure 1)
Patient Information and Education includes many topics such as *Health Topics A to Z*, Clinic/Doctor Information, Maps, pre-procedure and post-procedure instructions, and links to reputable Internet sites that may provide the patient with more information. The project did not include tasks not related to the Patient Information and Education portion of the Patient-Portal project. Specifically, the team did not study tasks related to Prescription Renewal, Appointment Requests, and Secure Messaging.

The team has analyzed the current Patient Information and Education materials on the UMHS website in comparison with other health websites and developed recommendations to improve the UMHS website. The purpose of this report is to present a comprehensive description of the completed task, and a detailed explanation of findings and conclusions.

**Project Goals**

The results from this project will be used in the implementation of the goals listed below, including goals for the overall project and goals specific to the team project.

General goals UMHS hopes to accomplish by implementing the Patient Portal project:
- Increase patient access to UMHS information and services
- Reduce the cost of operations
- Compete with industry to maintain patient loyalty and satisfaction

Goals specific to the Patient Information and Education task:
- Access to pre-procedure and post-procedure instructions via the UMHS website
- Expand Patient Information and Education access including finding and contacting clinics, departments, and doctors, parking information, and maps
- Increase patient education
- Links to reputable search/information sources
- Link between specific health topics and their appropriate departments and clinics within UMHS
- Make available, via the UMHS website, clinical guidelines specific to pre-visit needs for patients
- Establish policies for standardizing the existing UMHS department websites

Goals specific to the efforts of the Patient Information and Education Analysis Team
- To assess the state of the information and education on the current public UMHS website through benchmarking and website comparisons.
- To develop a recommendations report related to the design of information and education within the Patient Portal.
Methodology

To analyze the current UMHS website, data was collected from departments in UMHS. Studies were performed by the Patient Information and Education Analysis Team comparing the UMHS website to other health websites.

Collected Hits and Visits Data
Data collected included the frequency of UMHS website hits and visits for the past 15 months (July 2003 to September 2004), which the team obtained from a Program Associate of the Public Relations, Marketing, and Communications Department (PRMC). The PRMC hits and visits statistics do not include any data related to the Department of Surgery or the Kellogg Eye Center (Department of Ophthalmology).

Hits and visits have different definitions and therefore different uses. Hits are “the number of times a program or item of data has been accessed or matches some condition.” For example, when a user downloads a page from the Web, the page itself and all graphic elements that it contains each count as one hit to that Web site”1. Visits are “a count of how many different people access a website”2. Visits data is more accurate than hits data because visits data represents the user’s intended target site; therefore, visits data was used in the analysis. The 16 most frequently visited UMHS website pages were tallied, having at least one percent of the total number of page views. (See Appendix A)

Collected Interpreter Request Data
The next piece of data, Interpreter Requests by Language, was collected from a Coordinator of Interpreters Services Program. This data outlined the percentage of patient requests, by language, for an interpreter.

Performed Comparison Study
To determine the differences between the UMHS website and other health systems’ websites, a comparison study was conducted. The websites used for comparison were determined with the assistance of the project Client. (See Appendix B for a complete list of websites.) Websites used in the comparison were broken down into four categories:

- Health Systems with a Portal
  - Geisinger Health Systems
  - Dartmouth-Hitchcock Health System
  - Aurora Health Care
- Local Health Systems
  - Henry Ford Health Systems
  - Spectrum Health
  - St John’s Health System
- Nationally Recognized Health Systems

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Using these websites, three different studies were completed focusing on Patient Information, Patient Education, and Usability.

**Performed Patient Information Studies** – Two comparison studies were completed, focusing on Patient Information: a clicks study and a usability study. The criteria were determined with the assistance of the Manager of Interactive Marketing at PRMC and the text *Don’t Make Me Think: A Common Sense Approach to Web Usability*.3

Every time the user had to push the mouse button, a click was recorded. The clicks study tracked the number of clicks needed to reach different information sources from the main page of each health website. Fewer clicks were desired. The team tracked clicks data on four pieces of hospital information: Find a Map, Find a Doctor, Visiting Hours, and Health Topics A to Z. These informational pieces were chosen because patients should be able to access them quickly, and these are general pieces of information a patient will need.

The usability study determined the absence or presence of the following 16 usability criteria. The criteria were:

- Site identification (What site is this?)
- Page name (What page am I on?)
- Major sections of the site
- Local navigation bar
- You Are Here indicator
- Can I search?
- Type of search
- Consistent logo
- Site Map (index of site)
- Consistent design template
- Recent health information available (News)
- Links to other health sources within Health Topics A to Z
- Medication information
- Easy to return home
- Disease information available

The site was given a point for the presence of each criterion it had from the list above. These usability scores were used to compare the usability of the health websites. The

The purpose of this comparison was to assess the UMHS website related to web content design, industry best practices and other health websites’ approach to health information design. This comparison was used to determine places where the UMHS site is superior and where it can be improved.

**Performed Patient Education Study** – Two areas of Patient Education were analyzed, one focusing on general health topics and the other on the top nine health topics. Although the team focused on two topic lists, each was analyzed using the same criteria:
- Referral Information
- Appointment Link
- Search Index Available
- Symptoms Listed
- Symptoms Explained
- Diagnosis Given
- Treatment Options
- Languages Available

**Findings**

Findings from the data analyzed and comparison studies conducted were used to draw conclusions about the current UMHS website.

**Most Visited Health Topics**
The four general topics that received the most visits were:
- Heart Related Topics
- Pregnancy
- Your Child Topics
- Weight Topics

These were the general topics used in the Patient Education Study.

**Most Visited Health Topics A to Z Website Pages**
The nine most frequently visited *Health Topics A to Z* website pages were also determined. These were the specific topics used in the Patient Education Study. See Figure 2 for the distribution of these topics:
- Ideal Weight Table
- Blood Pressure
- Target Heart Rate
- Durable Power of Attorney Form
- Your Child – Developmental Milestones
- Lasix
- CBC – Complete Blood Count
- Tubal Ligation
- Tachycardia
The line above the bars in Figure 2 tracks the cumulative percentage of health topics viewed. For example, the health topics ideal weight table, blood pressure, and target heart rate encompass 72.9% of health topics viewed in this analysis.

Three Most Requested Non-English Languages
The results from the data received from Interpreters Services indicate that 38 languages were requested by 2097 patients. The top languages requested are Spanish (20%), Chinese (18%), and Russian (18%) as shown in Figure 3.

Source: UMHS Public Relations and Marketing Communications web stats
Figure 3. Most Requested Non-English Languages

Source: UMHS Interpreter Service Requests

Patient Information Comparison Study
To evaluate information available on the current UMHS website, it was compared with eleven other health websites.

Number of Clicks to Reach Hospital Information – The study quantitatively compared UMHS to other health sites. The number of clicks needed to reach each of the four categories from the main page is summarized in Table 1.
Table 1. Number of Clicks Required to Reach Hospital Information

<table>
<thead>
<tr>
<th></th>
<th>Map</th>
<th>Find a Doctor</th>
<th>Health Topics</th>
<th>Visiting Hours</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMHS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Geisinger Health System</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>St John Hospital and Medical Center</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Cleveland Clinic</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Spectrum Health</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Henry Ford Health System</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Dartmouth-Hitchcock Memorial Hospital</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Intermountain Health Care</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>4+</td>
<td>12+</td>
</tr>
<tr>
<td>Aurora Health Care</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Johns Hopkins</td>
<td>2</td>
<td>1</td>
<td>X</td>
<td>2</td>
<td>X</td>
</tr>
<tr>
<td>Mayo Clinic</td>
<td>X</td>
<td>X</td>
<td>0</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Source: Patient Information and Education Analysis Team, Patient Information Comparison Study

Table 1 numerically evaluates the ability to navigate each website to find four general items that patients would be interested in finding. An X in Table 1 indicates that the item could not be found. UMHS had a direct link from the homepage for all but visiting hours in which only one additional click was needed. Almost all of the health centers had a direct link to Find a Doctor. UMHS, Geisinger, and Cleveland Clinic were the only health centers to have a direct link to a map and driving directions from the homepage. Only Mayo Clinic had a small Health Topics A to Z Index directly on the homepage, most others required 1 click. Geisinger and St. John Hospital were the only two health centers that made finding visiting hours easier than those for UMHS. Though some health centers may have required more clicks, certain aspects were more informative than those of UMHS such as more in depth maps and detailed searches for health care providers.

Usability Score of UMHS versus other health websites – The results of the study can be seen in Figure 4, which outlines the number of health sites that fall into three ranges. Individual website scores can be seen in Appendix C.
As shown in Figure 4, the site can be improved in several areas. UMHS received a score of 11, outscoring only 3 of the 12 websites. UMHS missed 5 out of the 16 usability criteria. The five criteria UMHS did not meet are:

Table 2. UMHS Missed Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percent of Health Websites meeting criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Map</td>
<td>83%</td>
</tr>
<tr>
<td>Consistent logo</td>
<td>67%</td>
</tr>
<tr>
<td>Consistent design template</td>
<td>67%</td>
</tr>
<tr>
<td><em>You Are Here</em> indicator</td>
<td>58%</td>
</tr>
<tr>
<td>Links to other health sources within</td>
<td>33%</td>
</tr>
<tr>
<td><em>Health Topics A to Z</em></td>
<td></td>
</tr>
</tbody>
</table>

Source: Patient Information and Education Analysis Team, Patient Information Usability Study
Patient Education Comparison Study
UMHS had referral information and appointment scheduling links from the general categories studied, but not from the specific health topics searched. Geisinger, Dartmouth-Hitchcock, and Aurora were the same as UMHS. The rest of the sites studied did not have any referral information or appointment scheduling links for either the specific health topics or the general categories.

It was possible to search for *Health Topics A to Z* using a search box on the UMHS website as well as all the other sites studied except for Johns Hopkins Medicine, which did not have a resource like *Health Topics A to Z*.

For each health topic searched, UMHS listed and explained the symptoms, treatments, and diagnosis. Dartmouth-Hitchcock and Intermountain also explained 100% of the health topics. WebMD explained all of the health topics except the ideal weight table. Six of the websites studied explained less than 50% of the health topics studied. The average number of health topics that a health system’s website explained was determined from the averaging the number of symptoms listed, symptoms explained, diagnosis explained, and treatment explained that were present for each health topic at each website. (See Figure 5.)

![Figure 5. Average Number of Health Topics Explained at each Website](image)

Source: Patient Information and Education Analysis Team, Patient Education Comparison Study

Very few of the websites studied offered health topics in a language other than English. Those that did just offered Spanish as an alternative. Only the two sites that used MEDLINEplus®, Dartmouth-Hitchcock and Intermountain, had another language
available for all of the health topics searched. UMHS and Aurora had 3 and 2 health topics available in Spanish, respectively. None of the other health websites had other languages available for the Health Topics A to Z except English. The websites that used MEDLINEplus®, Dartmouth-Hitchcock and Intermountain appeared to have the most thorough health topics of those studied.

Conclusions and Recommendations

Conclusions and Recommendations were developed from the data analyzed and the comparison studies conducted. The conclusions and recommendations developed regarding the current UMHS web content can be used to enhance the usability and patient-centricity of the Patient Portal.

Focus on Most Visited Health Topics
The findings suggest that patients are more interested in the general topics relating to heart topics, Your Child, pregnancy, and weight topics because these recorded the most number of visits. UMHS should focus on these four topics, making these areas more patient-centric. Methods of making a topic more patient-centric will be identified in the Patient Education Study recommendations.

The data analyzed does not include any hits or visits data related to the Department of Surgery or Kellogg Eye Center (Department of Ophthalmology). A similar study should be conducted to determine which topics patients are most interested in specific to those subjects.

Present Health Topics A to Z in Three Most Requested Non-English Languages
To improve on the usability of information and education within the Patient Portal, the Patient Information and Education materials should be available in Spanish, Russian, and Chinese. These three languages encompass more than 50% of the requested interpretations. When implementing this change, UMHS should start with the most visited general health topics: heart topics, Your Child, pregnancy, and weight topics.

Improve Hospital Information Areas
UMHS had direct links to each of the categories except visiting hours; however, the quality of the information can be improved. Many of the other sites studied had noticeably better maps and Find a Doctor searches. Cleveland Clinic had the best maps of all those studied. (See Appendix D) On the Cleveland Clinic Map, each building is assigned a letter and many of the landmarks are labeled. Buildings are color-coded by type. The building the user is looking for gets circled on the main map when it is clicked. A picture and short description of the building also appear on the page. This map system is very clear and allows the users to see exactly where they are going once they get to the health center’s campus. A similar style map, accessible from the Patient Portal website, should be designed for UMHS since it also has a large campus with many buildings in the same area.
The clicks study indicated that eight of the other health centers studied allowed a user to search for a doctor from a link on the main site using different search options such as specialty, location, or the provider’s last name. The Find a Doctor link at the UMHS site only takes a user to a site with a phone number to call. The user must make an additional click from this site to access a very basic physician and clinic directory search. The Find a Doctor link should not only link to the phone number, but also to the search for a provider on the same page. On that page, more search options should be added, including the following: by location, by specialty, or by the provider’s last name. (See Appendix E)

**Improve on Missed Criteria**

Since 83% of the studied health websites had a site map, to make the UMHS website more patient-centric, UMHS should create a site map. Some of the individual departments had their own site maps such as the Geriatrics Center and the Comprehensive Cancer Center. However, there was no site map for the entire UMHS website.

In addition to a site map for the whole site, consistent design templates and logos should be implemented on the UMHS website. Inconsistent templates and logos affected the usability of UMHS site. When on the UMHS website, a user may encounter a different template or an inconsistent logo. The different templates found throughout the departments hinder the user because each template has a different navigation bar. Of the health websites studied, 67% had a consistent design template and logo. These sites were easier for the user to navigate. A consistent logo is a constant reminder to the user's location in the website. Inconsistent templates make it difficult because users have to re-educate themselves with every new template. (See Appendix F)

UMHS should implement You Are Here indicators to help users navigate the website. Of the health sites studied, 58% had You Are Here indicators. You Are Here indicators show users the path they took to get to their current page. It allows a user to trace their steps, and move back and forth within the site easily. (See Appendix G)

Links to external sources should be added to UMHS Health Topics A to Z, starting with the most visited general health topics. Of the hospitals studied 33% had links to external sources within their Health Topics A to Z. UMHS was one of health sites that did not. Though some UMHS health topics do have links to external health sources there is no consistency in this linking. External links make Health Topics A to Z more patient-centric because the website links them directly to external sources for the topics they are interested in.

**Improve Characteristics Available for Health Topics A to Z**

Though the Health Topics A to Z on the UMHS website ranked well compared to the other heath systems studied, there are areas for improvement. All health topics should be available in popular languages other than English. All of the top visited health topics and the four general categories should be available in Spanish. Currently, only a selection of Health Topics A to Z on the UMHS website is available in Spanish.
UMHS should add a link to schedule an appointment as well as a search to find a doctor that has multiple search fields. Possible search fields for Find a Doctor based on those seen on the websites studied include:

- By care provider’s name
- Specialty
- Location
- Gender

This search could be linked directly to each health topic page so that a patient can easily search for a doctor related to the health topic of concern. An appointment link would allow a patient to request an appointment to be scheduled by submitting a form online, directly from a health topic page. These improvements would make UMHS Health Topics A to Z more patient-centric, and ahead of the other health systems studied since none have these types of links directly from the health topic pages.

**Other Observations**

These are observations the team noticed would improve the user’s experience, but due to limited time, could not research.

The M-Call Non-Standard Referral Procedure is a very useful tool used by UMHS staff to assist in the patient referral process. It contains referral procedures specific to certain clinics, such as which tests or forms need to be completed before going to the appointment. A basic version of this tool could be available to patients to assist them in making appointments.

Every six months, up to 20 hours are spent updating the Health Topics A to Z. This time is spent programming, manually updating, and cross-checking the indices. If the Health Topics A to Z were offered in database form, this update could be completed quicker. A database form for health topics should be explored only if the content of the Health Topics A to Z meet the clinician requirements.

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Summary of Recommendations

• Focus on most visited health topics
• Make Health Topics A to Z available in Three Most Requested Non-English Languages
• Improve Maps and Find a Doctor Searches
• Implement hierarchy in UMHS site map
• Implement a consistent design template and logo
• Implement use of You Are Here indicators
• Link to external sources within Health Topics A to Z
• Make basic M-Call Non-Standard Referral Procedure available to UMHS website users
• Electronically save Hits and Visits Data monthly
• Receive Health Topics A to Z in database form

By implementing these recommendations, the Patient Portal can be more patient centric, more competitive in the health care industry, and increase access to UMHS.

Next Step

The next step to this project will be to have the recommendations reviewed with the Patient Portal team and subject matter experts for validation and prioritization and those that impact vendor selection will be added to the Request for Proposal. The findings will be used during the project detailed web content design activities scheduled for the first and second quarter of 2005.
# Appendix A: Top Health Topic Visits

<table>
<thead>
<tr>
<th>Topic</th>
<th># of months</th>
<th># of views</th>
<th>% of total views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal weight table for men and women</td>
<td>15</td>
<td>257,241</td>
<td>28.84%</td>
</tr>
<tr>
<td>Dangers of high blood pressure</td>
<td>15</td>
<td>125,934</td>
<td>14.12%</td>
</tr>
<tr>
<td>Main page</td>
<td>15</td>
<td>113,325</td>
<td>12.70%</td>
</tr>
<tr>
<td>Target Heart Rate</td>
<td>11</td>
<td>49,050</td>
<td>5.50%</td>
</tr>
<tr>
<td>Lowering your blood pressure</td>
<td>12</td>
<td>36,208</td>
<td>4.06%</td>
</tr>
<tr>
<td>Durable Power of Attorney form</td>
<td>12</td>
<td>35,876</td>
<td>4.02%</td>
</tr>
<tr>
<td>Your child - Developmental milestones</td>
<td>9</td>
<td>32,435</td>
<td>3.64%</td>
</tr>
<tr>
<td>Lasix</td>
<td>10</td>
<td>28,750</td>
<td>3.22%</td>
</tr>
<tr>
<td>CBC</td>
<td>9</td>
<td>27,753</td>
<td>3.11%</td>
</tr>
<tr>
<td>Tubal ligation</td>
<td>7</td>
<td>25,353</td>
<td>2.84%</td>
</tr>
<tr>
<td>Tachycardia</td>
<td>8</td>
<td>24,215</td>
<td>2.71%</td>
</tr>
<tr>
<td>Diagnosing pregnancy</td>
<td>7</td>
<td>22,784</td>
<td>2.55%</td>
</tr>
<tr>
<td>Colds &amp; Flu during pregnancy</td>
<td>4</td>
<td>18,910</td>
<td>2.12%</td>
</tr>
<tr>
<td>Choosing foods low in fat &amp; cholesterol</td>
<td>4</td>
<td>13,010</td>
<td>1.46%</td>
</tr>
<tr>
<td>Menstrual period, late or missed</td>
<td>4</td>
<td>11,654</td>
<td>1.31%</td>
</tr>
<tr>
<td>Your Child - Masturbation</td>
<td>5</td>
<td>11,400</td>
<td>1.28%</td>
</tr>
</tbody>
</table>

Source: UMHS Public Relations and Marketing Communications web stats
## Appendix B: Health Websites Used

<table>
<thead>
<tr>
<th>Health Website</th>
<th>Uniform Resource Locator</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Michigan Health System</td>
<td><a href="http://www.med.umich.edu">http://www.med.umich.edu</a></td>
</tr>
<tr>
<td>Geisinger Health Systems</td>
<td><a href="http://www.geisingerhealth.com">http://www.geisingerhealth.com</a></td>
</tr>
<tr>
<td>Dartmouth-Hitchcock Health Systems</td>
<td><a href="http://dartmouth-hitchcock.org">http://dartmouth-hitchcock.org</a></td>
</tr>
<tr>
<td>Aurora Health Care</td>
<td><a href="http://www.aurorahealthcare.org">http://www.aurorahealthcare.org</a></td>
</tr>
<tr>
<td>Henry Ford Health Systems</td>
<td><a href="http://www.henryford.com">http://www.henryford.com</a></td>
</tr>
<tr>
<td>Spectrum Health</td>
<td><a href="http://www.spectrum-health.org">http://www.spectrum-health.org</a></td>
</tr>
<tr>
<td>St. John’s Health System</td>
<td><a href="http://www.stjohn.org">http://www.stjohn.org</a></td>
</tr>
<tr>
<td>Johns Hopkins</td>
<td><a href="http://www.hopkinsmedicine.org">http://www.hopkinsmedicine.org</a></td>
</tr>
<tr>
<td>Mayo Clinic</td>
<td><a href="http://www.mayoclinic.com">http://www.mayoclinic.com</a></td>
</tr>
<tr>
<td>Cleveland Clinic</td>
<td><a href="http://www.clevelandclinic.org">http://www.clevelandclinic.org</a></td>
</tr>
<tr>
<td>Intermountain Health Care</td>
<td><a href="http://www.ihc.com">http://www.ihc.com</a></td>
</tr>
<tr>
<td>WebMD</td>
<td><a href="http://www.webmd.com">http://www.webmd.com</a></td>
</tr>
</tbody>
</table>
## Appendix C: Patient Information Score by Health Website

<table>
<thead>
<tr>
<th>Health Website</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. John’s Health System</td>
<td>15</td>
</tr>
<tr>
<td>Geisenger Health System</td>
<td>14</td>
</tr>
<tr>
<td>Henry Ford Health System</td>
<td>14</td>
</tr>
<tr>
<td>WebMD</td>
<td>14</td>
</tr>
<tr>
<td>Aurora Health Care</td>
<td>13</td>
</tr>
<tr>
<td>Spectrum Health</td>
<td>13</td>
</tr>
<tr>
<td>Mayo Clinic</td>
<td>13</td>
</tr>
<tr>
<td>Intermountain Health System</td>
<td>13</td>
</tr>
<tr>
<td><em>University of Michigan Health System</em></td>
<td>11</td>
</tr>
<tr>
<td>Johns Hopkins</td>
<td>8</td>
</tr>
<tr>
<td>Cleveland Clinic</td>
<td>8</td>
</tr>
<tr>
<td>Dartmouth-Hitchcock Memorial Hospital</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Patient Information and Education Analysis Team, Patient Information Usability Study

![Health Website Score](chart.png)

Source: Patient Information and Education Analysis Team, Patient Information Usability Study
Appendix C (cont.)

Missing Criteria by Health Website

Source: Patient Information and Education Analysis Team, Patient Information Usability Study
Appendix D: Screenshots of UMHS and Cleveland Clinic Maps

UMHS Map

Search
Maps, Directions, & Virtual Tours
Centers for Cancer, Heart, Geriatric, & Women's Health
What information are you looking for?
Hospitals & Community Health Centers
Contact Us
Home

Directions From the North
Take US-23 South, to the Plymouth Road exit 41. Turn right and follow Plymouth Road approximately two miles until you reach Maiden Lane and turn left. (Just before the Broadway Bridge construction area). To reach the Kellogg Eye Center, continue on Maiden Lane for approximately 1/4 mile and turn right on Maiden Court and then a quick right on Wall Street. To reach the U-M Hospitals and U-M Cancer and Geriatrics Center, continue on Maiden Lane and it will change to Medical Center Drive as you cross Fuller Rd.

Directions From the South

Directions From the East

Directions From the West

Source: UMHS
http://www2.med.umich.edu/pcdv2/index.cfm?fuseaction=Maps.UniversityHospital&building_name=University%20Hospital&bn=179
Appendix D (cont.)

Cleveland Clinic Map

Building H - Cleveland Clinic Hospital Building
2854 Clinic Drive
Cleveland, OH 44195

The H building contains the main hospital entrance and lobby, the hospital cafeteria, and many hospital units. It is directly connected with and hard to distinguish from the F, G, and M buildings.

Source: Cleveland Clinic
http://www.clevelandclinic.org/maptour/buildings.asp?building=h
Appendix E: Screenshots of UMHS and Aurora *Find a Doctor* Searches

**UMHS Doctor Search**

*Physician and Clinic Directory*

Search here for
**Departments, Centers of Excellence, and Community Health Centers...**

OR, Search here for **UMHS Clinics** (primary care, specialty services, and health centers)...

by Clinic Name
by keyword
or Department

OR, Search here for a **physician** or **health care provider**...

by Last Name
by keyword
by Department
by Specialty

Source: UMHS

[http://www2.med.umich.edu/pcdv2/index.cfm?fuseaction=home.searchoptions](http://www2.med.umich.edu/pcdv2/index.cfm?fuseaction=home.searchoptions)
Appendix E (cont.)

Aurora Doctor Search

Source: Aurora Health Care
http://www.aurorahealthcare.org/doctors/index.asp
Appendix F: Screenshots of Templates and Logos

UMHS

Source: UMHS

http://med.umich.edu/
http://www2.med.umich.edu/healthcenters/universityhospital.cfm
http://www.med.umich.edu/anes/
Appendix F (cont.)

Dartmouth-Hitchcock

Welcome to southern New England's most comprehensive health care system. We provide a full range of hospital and community medical services, from Dartmouth-Hitchcock Medical Center in Lebanon, NH, to the health centers in White River Junction, Hanover, Lebanon, and Wolfeboro, NH. Dartmouth-Hitchcock's teaching program is affiliated with the University of New Hampshire School of Medicine. Dartmouth-Hitchcock also offers a wide range of programs, services, and resources to help you live a healthier lifestyle.

Source: Dartmouth-Hitchcock Health Systems
http://dartmouth-hitchcock.org/
http://www.dhmc.org/
http://www.dhmc.org/webpage.cfm?site_id=2&org_id=98&gsec_id=0&sec_id=0&item_id=2256
Appendix G: Example of a You Are Here Indicator from Spectrum Health

Source: Spectrum Health
http://www.spectrum-health.org
## Appendix H: Interviews Conducted

<table>
<thead>
<tr>
<th>Date</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/01/04</td>
<td>Sharon Redmer (Administrative Manager, UMH Operations)</td>
</tr>
<tr>
<td></td>
<td>Bonnie Turner (Manager of Interactive Marketing, PRMC)</td>
</tr>
<tr>
<td></td>
<td>Jane Severson (Administrator of Ambulatory Services)</td>
</tr>
<tr>
<td></td>
<td>Pam Cittan (Manager of Clinical Department)</td>
</tr>
<tr>
<td></td>
<td>Teresa Katlin (Project Client)</td>
</tr>
<tr>
<td>10/06/04</td>
<td>Kallie Michels (Associate Director of Planning and Marketing, PRMC)</td>
</tr>
<tr>
<td></td>
<td>Dave Bruden (Associate Director, PRMC)</td>
</tr>
<tr>
<td></td>
<td>Teresa Katlin (Project Client)</td>
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<tr>
<td>10/15/04</td>
<td>Kris Talley (Applications Programmer, PRMC)</td>
</tr>
<tr>
<td>10/21/04</td>
<td>Lynn Bryant (Program Associate, PRMC)</td>
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<tr>
<td>11/03/04</td>
<td>Michelle Harris (Program Associate, UMHS Interpreters Program)</td>
</tr>
<tr>
<td>11/12/04</td>
<td>Josie Aguirre (Assistant Director, PRMC)</td>
</tr>
<tr>
<td></td>
<td>Bonnie Turner (Manager of Interactive Marketing, PRMC)</td>
</tr>
</tbody>
</table>