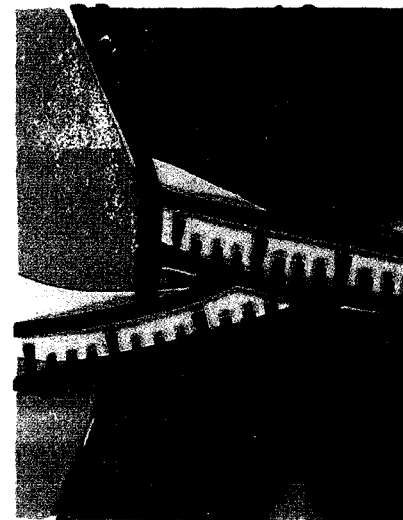
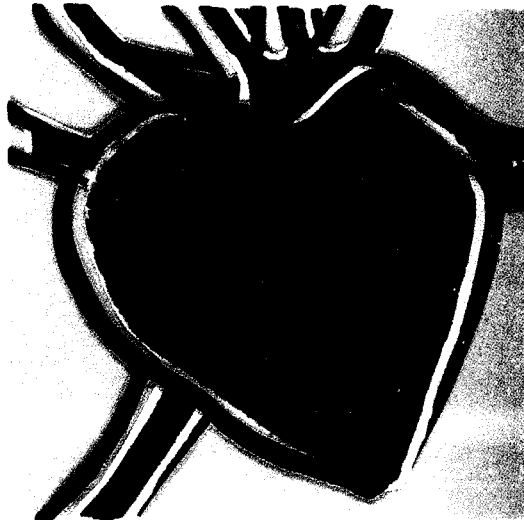
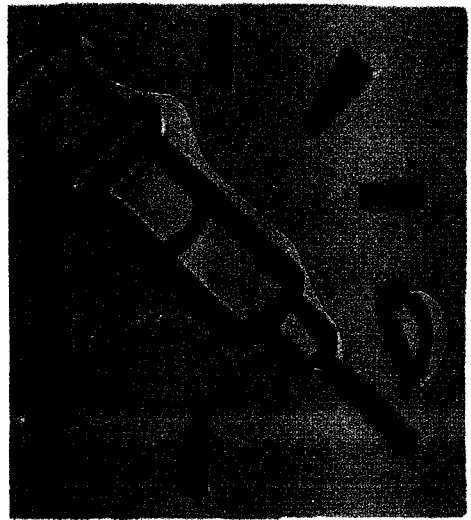
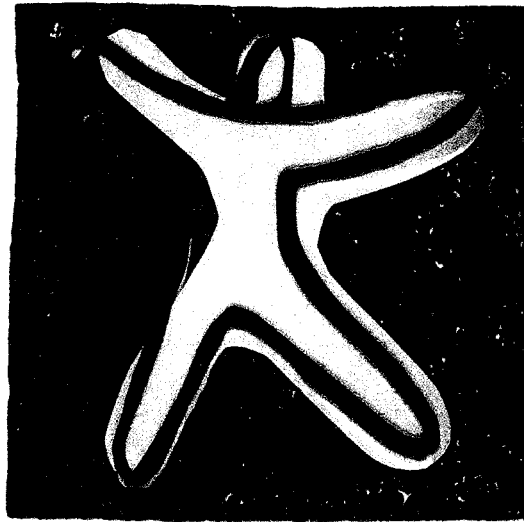
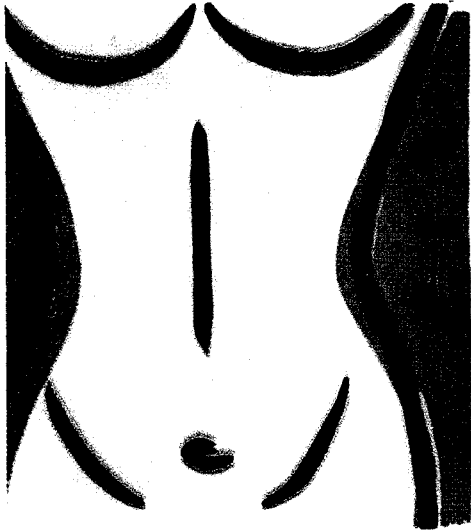


LITERACY HARVEST

Health Literacy Fall

Literacy Assistance Center



NAVIGATING HOSPITALS

Literacy Barriers

MANY PEOPLE, INCLUDING THOSE WHO SUCCESSFULLY make their way about the streets, transportation routes, and malls of small and large cities, find themselves ill at ease within specialized institutions, such as government buildings and medical facilities. These institutions offer important services to the public, but they are also the places where bureaucrats and professionals work. Consequently, the environments within these service centers are shaped by the nature of the assistance provided, as well as by the needs of those working within. The written word—in the form of signs, postings, and paper work—is used to welcome, direct, and sometimes screen visitors. These signs and postings often reflect the specialized language of the professionals who work there. Overall, the language, density, and complexity of these materials establish a literacy environment that makes demands on all who enter. This exploratory study focuses on the literacy environment of hospitals and on the factors that hinder, as well as support, the ability of individuals to make their way to, and within, a hospital.

The hospital is a place of work for people from various fields, including medicine, nursing, pharmacy, laboratory sciences, and the service industry. The culture and language of medicine permeate the buildings, and can be found in written materials, observed in the clothing and uniforms of the various personnel, and overheard in conversations among health workers. The written word, used in the various postings and materials, and the spoken language, used by the professionals working within the institution, are often not the words of everyday speech. In addition, the layout and the design elements of the physical environment

tend to have been shaped by a scientific and medical logic—a logic that is not necessarily intuitive to those not trained in the field. Some places are open to the public; others have restricted access; and others are not accessible at all. A service area, a clinic, or an office may be located on a certain floor based on the nature of an illness, a specific body part, or even the presence of a certain machine. Anyone unfamiliar with the common parlance of medicine and the traditional groupings of diseases and disorders might not follow this logic and therefore have problems navigating the floors, hallways, and offices.

With a group of research assistants, I conducted a small exploratory examination of hospital navigation issues in order to garner insight into the literacy environment of hospitals and into those factors that may hinder or support the ability of individuals to make their way about that environment. Interviewers walked with informants around the public areas of ten municipal hospitals. The walking interviews involved graduate students, research staff, adult education teachers, and students enrolled in adult education programs.

Background

Modern society and its institutions rely heavily on the written word. However, findings from the National Adult Literacy Survey (NALS) indicated that about half of U.S. adults do not have the literacy skills required for tasks in the workplace and for full participation in the activities of everyday civic life (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993; Tuijnman, 2000; Kirsch, 2001; Sum, Kirsch, & Taggart, 2002; Comings, Reder, & Sum, 2001). A 2004 analysis, *Literacy and Health in America* (Rudd,

Kirsch, & Yamamoto, 2004), focused on adults' ability to use health-related materials and to accomplish health-related tasks drawn from the NALS and other large-scale surveys using the same measures and understanding of functional literacy. Findings, mirroring those from the NALS, offer evidence that adults have difficulty accomplishing tasks using health-related materials. For example, as is illustrated in the report, three-quarters of U.S. adults would have difficulty using a chart from an over-the-counter pediatric medicine to determine the correct dosage for a child.

In addition, hundreds of studies that have focused on the assessment of health materials and been published in medical and public health journals indicate that the reading level of most health materials exceeds the reading ability of the people for whom they were designed (Rudd, Colton, & Schacht, 2000). Although a good deal of attention has been focused on assessing health-related materials in sentence and paragraph format, little attention has been given to the many signs and documents used in health care settings and to the overall literacy environment within hospitals. Based on these analyses, the Institute of Medicine (2004) called for change in institutional demands. When ninety million U.S. adults are unable to use much of the print materials provided in health and medical settings, words clearly get in the way. Unnecessary barriers such as those posed by these demands can hinder access to needed care and services.

Methods

An interviewer recorded the activities and the perceptions of an informant entering a hospital and subsequently locating three places within the hospital. The process began in the lobby of the main entrance, where the interviewer and informant met for an initial discussion session. The pair then made their way from the information desk to the hospital cafeteria and to a pharmacy (designated as the place where people could buy medicine). The interviewer and the informant then chose the third destination together from an array of options, including a specific service area, such as ambulatory care, or a specialty department, such as an asthma unit, a women's health clinic, or physical therapy. Interviewers were instructed to ask the informants to talk about the process as they tried to locate each destination. At the end of the walking interviews, the interviewers were asked to engage the informants in a review of the overall experience.

Assessments and Tools

Before meeting with the informant, the interviewer visited the hospital to collect and assess a sample of available materials using the SMOG reading level assessment tool. SMOG readability formulas are designed to link the literacy demands of written materials to a specific grade level, or, in some cases, to rank the materials on a discrete score of reading difficulty. One of the most

commonly referenced formulas, SMOG requires no reference to charts and is easy to use in field assessments. SMOG is based on calculations of the number of polysyllabic words in a set number of sentences. The formula focuses on sentence and word length, both of which are associated with reading ease or difficulty (McLaughlin, 1969).

In addition, interviewers examined signs and postings using insights from the PMOSE/IKIRSCH document readability formula (Kirsch & Mosenthal, 1998), which assigns scores based on a document's organizational pattern and density, as well as how much information is contained within, or outside of, the document. All interviewers studied the PMOSE/IKIRSCH document readability formula and were particularly alert to the use of complex and nested signs.

Study Informants

Ten of 15 adult basic education (ABE) and English for speakers of other languages (ESOL) teachers who were contacted agreed to an interview, to participate in a tour, and to set aside time for an announcement in their classes. Fifteen students agreed to participate in a tour. About half of these students were drawn from adult education classes visited by graduate students from the Harvard School of Public Health. Just under half were drawn from classes in an adult education center that was engaged in discussions with

The culture and language of medicine permeate the buildings, and can be found in written materials, observed in the clothing and uniforms of the various personnel, and overheard in conversations among health workers.

the School of Public Health's health literacy research team. The informants in this exploratory study constitute a convenience—not a representative—sample. However, because the study drew teachers and students from adult education classes of varying levels, the sample does include people with both high and limited educational attainment and literacy skills.

The adult education students who agreed to participate in the interview exercise identified the hospital they would most likely use for their own care. Adult education teachers toured facilities closest to the adult education center where they worked. Each interview took approximately one hour. Teachers and students were paid for their time. In addition, teachers were offered a follow-up class session, an outlined lesson plan, or both. The research protocol was reviewed and accepted by an institutional review board. All participants offered informed consent.

Analysis

Findings, which were assembled from interview forms, reflect four different perspectives. Both teachers and students served as informants. However, teachers commented on their own experience in an unfamiliar setting and, in addition, commented on their students' probable reaction to the setting. Students commented on their own experience. Along with noting informants' comments and activities, interviewers added their own observations. Even when the informants did not offer commentary, the interviewers collected information about the overall literacy environment, as well as the specific characteristics of signs and other print materials.

We assembled commentary from the field records and noted the source of each comment: teacher, student, and interviewer. Comments were then grouped under the categories of the interview protocol: entering the hospital, the lobby, tools (information desk, maps, and signs), general process notes, and concluding commentary. We grouped together those comments under common themes. Findings are presented as observations attributed to teachers, students, or interviewers and are not tabulated in the form of counts. When only one informant offered a unique observation, the comment is attributed to the source; for example, "one teacher commented on use of people's names in signs." When more than two informants offered the same general commentary, the comment is attributed to "several teachers and students" or "several teachers."

Findings

The interview protocol began at the entrance to the hospital because visitors are most likely to find an "Information" or "Help" desk at this site. However, informants first needed to get to the hospital and locate the main entrance. In an urban area, visitors and outpatients are most likely to use public transportation, and informants did make use of bus and subway systems. Thus, the analysis included comments related to finding the meeting place.

Access and Entry

Several informants reported difficulty finding the facility. In two cases where a transportation stop is named for the hospital, the informants found no signs on the street directing them to the actual institution. Not surprisingly, given that hospitals have multiple entry points, many informants had difficulty locating the official main entrance. One teacher noted that several of the hospital's entrances were prominent and well trafficked. Some entrances were named with terms such as admitting, receiving, ambulatory care, emergency entrance. The teacher found this confusing for her own appointment and noted that it could be very difficult for students looking for a main entrance. In addition, she noted that a poor reader, or even a good reader with an average vocabulary, might confuse "ambulatory" with "ambulance."

Literacy Environment

First impressions often set a tone or mood. Informants offered a wide range of first impressions. Comments ranged from "appalling" to "chaotic and overwhelming" to "pleasant and welcoming" to "unthreatening." The large facilities tended to elicit the widest range of comments. For instance, the same hospital lobby was variously described as "luxurious," "scary," "depressing," "intimidating," and "clean and beautiful." One of the teaching hospitals was likened to a hotel lobby or a corporate headquarters, while another was compared to a mall because of the franchise restaurants in the lobby. One student pointed out that many of the people in the hospital lobby were professional looking and well dressed. One teacher noted the presence of uniformed guards.

More than one teacher noted that settings with numerous signs and postings had a "high literacy demand"—meaning that people with low literacy skills entering such settings might feel overwhelmed by print. Interviewers noted that several hospitals had signs written in languages other than English. Spanish was the most frequently used second language, but one hospital that serves a large immigrant population also had signs in Portuguese and Haitian Creole. Two hospitals included in this project featured large signs in their lobbies with "Welcome" written in several languages.

The interviewers asked informants to request directions from the information desk to the cafeteria in order to begin the walk. For the most part, both teachers and students reported that the information desks were prominent and easy to access; many of the desks were labeled with the word "Information" or a question mark. One teacher suggested that foreign students in ESOL classes might feel intimidated by uniformed guards, particularly if a student's immigration status was in question. Overall, informants—both teachers and students—said that the staff members they spoke with were friendly and knowledgeable. Interviewers noted that two of the larger hospitals had volunteers waiting at the desks ready to escort visitors and patients to their destinations.

Maps

Because the interview protocol instructed informants to get a map (if available) at the start of the walk, almost all of the students attempted to use this tool to help them find their way around the hospital. Most could not. In one case, a student did have success using an "enhanced map"; a hospital staff member had traced a route in pen onto the map, highlighting the easiest way for the informant to find the desired location.

Interviewers reported that some of the lobbies contained maps—either posted on walls and in displays, or available in racks for hand held use—while others did not. In some instances, hand-held maps were also available for the asking from the staff at the information desk. Interviewers listed several problems with the maps, including:

- The size of drawings
- The use of small print
- The use of medical jargon and abbreviations for names of locations
- The lack of consistent vocabulary between the map and the names actually used in the hospital
- The complex color-coding and symbol schemes in the map that were not linked to hospital signs

Signs and Postings

One teacher and several students pointed out words on signs that were hard to understand. Several teachers noted that many of their students would have problems reading the signs because of medical jargon and abbreviations. Examples of medical jargon and abbreviations were numerous and included Pulmonary Diseases, Nuclear Medicine, EEG, EKG, EMG, and Rheumatology.

More than one teacher noted that settings with numerous signs and postings had a “high literacy demand” —meaning that people with low literacy skills entering such settings might feel overwhelmed by print.

The format and placement of signs and directories were problematic as well. Many teachers reported that the print was too small to be read easily, that the signs were inconsistently placed around the hospital, that they contained too much information to process at one time, and that the vocabulary was inconsistent. One teacher highlighted a difficulty with donor names. Signs often included, in headline banners, the donor name of the floor or wing. One teacher suggested that her students would have difficulty differentiating between proper names and medical terms. She indicated that the use of proper names to identify particular wings, rooms, and clinics was confusing.

One teacher involved in ESOL education also commented on the presence or absence of signs in languages other than English, an important consideration in a multi-ethnic city. However, another teacher noted that some people with very low-level reading skills might be confused by signs in more than one language because of the different words (and, in some cases, alphabets) used.

Informants also took note of where signs were placed. A teacher pointed out that signs were often placed inconsistently around the hospital. For instance, in one case, signs for a specific destination, which for the most part had been placed at eye level, hung from the ceiling at infrequent intervals. In some cases, the vocabulary was inconsistent as well. For instance, a teacher

pointed out that the word “cafeteria” was used in signs but “café” was used at the actual location—a small change, but one that might confuse someone who does not read very well.

Most of the students said that they had problems reading text when the font size was small and that the language was confusing. Interviewers indicated that the size of the print on posters was often too small to be read with ease.

Hospital Workers as Resources

Several teachers said that people with limited literacy skills often ignored the written word and made use of other tools to find their way around. Interviewers observed that many of the students ignored the signs and other written materials from the onset. Interviewers reported that many of the students did not note or comment on signs until they were asked to do so. One student explained that whenever she has a medical appointment, she always arrives early so she has enough time to ask questions and feel her way around. She anticipates that she will get lost and builds it into her plan. During the walking interviews, some teachers and students stopped hospital personnel in the hallways to ask for directions. In several cases, hospital staff offered unsolicited help to informants who appeared to have lost their way.

Generally, students asked for directions as they moved from one location to another. During one walking interview, a student returned to the information desk when faced with a confusing choice of corridors. Interviewers observed that the most frequently used resource was the individual people informants encountered along the way. Although asking for assistance was popular and, in most cases, effective, this strategy also had its limits. For instance, in a few cases, students asked for directions from hospital workers, who, though friendly and eager to help, had not been oriented to the overall layout of the hospital. One interviewer, speaking to a hospital volunteer, discovered that while the volunteer was expected to assist patients and visitors entering the hospital, she herself had not been oriented to the hospital and was still learning her way around. One interviewer, who conducted a pre-interview walking tour of a community hospital on a weekend, reported that the front desk was not staffed.

Assessments of Materials and Signs

Some hospitals were described as dense literacy environments because they contain numerous signs and posting, while others were reported as sparse. Interviewers noted that individual directories, signs, and postings varied in complexity as well. Most directories were complex, containing nested information. Some signs contained different size fonts and multiple layers of information, such as those found on a newspaper front page: banner, headline, subhead, and text. Some signs were color- and letter-coded and required access to explanatory materials. Interviewers had highlighted and labeled these documents as complex and difficult to read according to the PMOSE/IKIRSCH document

readability formula during the pre-interview assessment of materials (Mosenthal & Kirsch, 1998).

Interviewers also assessed a sampling of postings, brochures, and pamphlets that were made available for patients and visitors. According to reading level assessments based on the SMOG readability formula mentioned above (McLaughlin, 1969), the reading demand of the materials ranged from grade 8 to grade 21

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(advanced doctoral level). Several teachers indicated that longer sentences, which are more likely to contain clauses, are harder to follow, and that longer words are more difficult for new readers to sound out and read. Overall, while some materials scored at levels accessible to average adults (8th grade level), most of the materials scored at higher, more demanding levels. Ironically, the research assistants reported that the postings of patient rights and responsibilities often contained complex sentences and difficult vocabulary.

Informants' Suggestions

Each interview concluded with a summary discussion between the interviewer and informant. A number of very concrete suggestions for easing the navigation process came out of these discussions.

Teachers suggested that hospital personnel—especially staff members who work at the information desks—should be trained to give precise directions in common terms and in a friendly and respectful manner. Interviewers noted that hospital workers—some of whom may have difficulty understanding medical language and reading signs and maps themselves—need to be familiarized with the layout of the hospital. For example, one interviewer cited an instance when a student approached a friendly janitorial aide. With expressed regret, the aide was unable to provide information about the hospital layout.

Teachers and students suggested that hospitals adopt consistent design elements. For example, maps should be simplified and correspond to the colors and words used in signs and hallways. Directories and maps should be placed in multiple locations, and signs for common destinations—such as the cafeteria, pharmacy, medical records, ambulatory care facilities, physical therapy, and patient rooms—should be prominently displayed, be consistently labeled, and include a “* You Are Here” notation.

Furthermore, teachers stressed the importance of maintaining a consistent vocabulary for all signs within the institution. For example, in one hospital, directions for the same clinic used the terms *asthma* and *pulmonary* interchangeably. Teachers also suggested that the signs employ common language instead of medical jargon. One teacher noted that since the doctors and nurses generally know their way around, signs should be oriented toward those not familiar with medical institutions or medical language. Some teachers suggested that both a medical term and a lay term could be used together.

Nearly all of the informants, regardless of their reading ability, experienced some difficulty navigating from place to place. Teachers (who had strong literacy skills) tended to rely more heavily on the written word in the form of maps and signs than did students. They seemed to assume that the maps from the front desk or the signs on the walls would be logical and that their reading skills would make the information decipherable, even when the maps were poorly designed and the signs contained inconsistent, highly technical vocabulary. The students, on the other hand, did not operate under this assumption. They started out by asking for directions, a strategy that was not only effective but was, in fact, eventually employed by almost all of the informants.

Discussion and Implications

Overall, the participating teachers and students offered a great deal of insight into the barriers hospital visitors face. Findings from this exploratory study indicate that when people need assistance, they currently rely more heavily on other people than they do on signs and maps. This preliminary study indicates that a dense and demanding literacy environment can be intimidating, that most people find complex signs difficult to read, and that a person with average literacy skills is not familiar with many of the medical terms used on signs and in forms.

This limited exploratory study is based on a small convenience sample of informants and institutions. These findings, which are in the form of insights, need to be further explored and confirmed through more rigorous studies. However, they do indicate that the language and vocabulary in signs and postings, while familiar to health professionals, is not easily decipherable to the lay public. In addition, the format and content of signs and forms are complex and do not correspond to the average skill level reported in the NALS (Kirsch et al., 1993). Thus, the tools intended to help the public gain entry into, and make their way around, a hospital are of little use to the visitors and non-professional staff for whom they have (at least in part) been designed. In other words, words do get in the way.

Overall, the participating teachers and students provided useful suggestions for those interested in reducing the barriers. Their observations and comments indicate that the communications and outreach departments of the hospitals would do well to

test all written materials with adults who are served by the institution. In addition, hospital administrators might explore the use of a glossary of terms and an explanation of organizing principles to help those who are new to their institution.

Because these findings indicate that when people need assistance, they rely on other people more heavily than they do on signs and maps, hospital administrators might consider the representative role that all employees have and expand worker training and orientation programs. The individual sweeping the floor is sometimes more likely to be approached for help than the busy professional hurrying along a hallway.

To help identify these barriers, hospital administrators might conduct relatively simple walking tours with local informants, and then assess signs and maps, orientation materials, postings of patient rights, educational materials, descriptions of procedures, directives, informed consent documents, and medical history and insurance forms. Overall, policy boards within hospitals, as well as external boards of accreditation, need to consider the literacy environment of hospitals and develop formal literacy-related audit procedures to make sure that words do not get in the way.

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