SYMBOL USAGE
IN HEALTH CARE SETTINGS
FOR PEOPLE WITH
LIMITED ENGLISH PROFICIENCY

PART TWO
IMPLEMENTATION RECOMMENDATIONS

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INTRODUCTION

In January, 2003, JRC Design was tasked by Hablamos Juntos with developing recommendations for program standards for signage to better serve Limited English Proficiency (LEP) patients in a variety of health care settings across the health care delivery system. While the national program specifically mentions "communication for Latinos", JRC Design's scope included that "[t]hese signage materials should not require literacy in order to be understood, and should be understandable to people regardless of their country of origin, primary language, education, socio-economic status, etc." [1]

Part One, completed in March, 2003, provided research and background information regarding the use of symbols in health care facilities in the United States and around the world.

Part Two provides eight recommendations for the use and implementation of symbol graphics for LEP populations to better utilize the health care industry, and so the health care industry overall can maximize efficiency within their facilities.

PART 2 | Implementation Recommendations

Based on a survey of grantee demonstration environments, this report will describe the range of possibilities or levels of implementation possible which are basic, and should be considered standard for all sites.

This report will conclude with recommendations and strategies for establishing a "minimum" standard for signage and symbol usage in the Hablamos Juntos demonstration environments and will describe:

- **The development and design process that should be employed globally at the initiative level to design signage and wayfinding using symbols or pictograms**

- **The process for implementing the recommended signage standards and what would be expected of grantees for implementation in the demonstration sites**

- **The technical support that will be provided to grantees to develop implementation plans and budgets for signage**

RECOMMENDATIONS

Prior to the following recommendations' development, each of the grantee sites was requested to fill out a questionnaire regarding terminology use, and to provide photographic surveys of the site signage, both interior and exterior. The questionnaires and surveys showed the range of signage needed for various sites. That information, and research gathered during Part One provided direction for the recommendations made.

Note: Recommendations 1-4 pertain to the multilingual symbol system overall, and should be completed before implementation can occur at the ten grantee sites.

1 DEFINE COMMON TERMINOLOGY

The terminology should be based on the SNOMED system (see below), and should be translated into the most common language groups likely to be encountered in the United States.

Rationale

There is no standard for terminology, let alone symbol usage, particularly when it comes to health care.

One way to make this effective is to start with a common nomenclature for room and department identity and symbol usage. Telling family members to meet a post-surgical patient in the "PACU," advising someone to come for an appointment in the "Imaging Department," or telling a hospital patient that her room will be cleaned by "Environmental Services," may leave patients and visitors scratching their heads. Part of successful wayfinding is understanding the meaning of destination names and landmarks. Clear, widely understandable terminology will make it easier for patients and visitors to navigate in, and around, complex health facilities.[1]

At the time of this report's release (April, 2003), the U.S. health care industry is expected to have adopted SNOMED International's SNOMED CT controlled clinical language, a standard medical terminology. This would allow "all institutions, all vendors and all locations to use the same vocabulary across all information systems," according to Dr. John Mattison, Assistant Medical Director for clinical systems with the Southern California division of Kaiser Permanente. [2]

To help understand the terminology used, and to develop a basis for common word usage, the ten Hablamos Juntos grantees were asked to review 136 terms and note whether they were used at their site(s), and if so, was the space publicly accessible, accessible only with an escort, or closed to the public. The most commonly used terms were:

> Admissions, Audiology, Cancer Center/Oncology, Cardiology, Critical Care/Intensive Care, Emergency, Maternity, MRI, Nursing, Obstetrics & Gynecology, Occupational Health & Therapy, Outpatient Services, Patient Check-In, Pediatrics, Pharmacy, Physical Therapy, Radiology [3]

These terms may form the basis of common terminology for department identity. In any case, these and any other terms used should correspond to the SNOMED standards. To maintain the new system, and to avoid confusion, staff will need to be encouraged to use these standard terms when giving directions and instructions.

2 DEVELOP HEALTH CARE SYMBOL SYSTEM

Based upon the adopted common terminology, develop a corresponding health care symbol system for public use.

Rationale

A common, available symbol system pertaining to the health care industry will encourage designers to use it. Several designers stated

that they didn't use symbols because a commonly accepted system didn't exist, and they were not being paid to develop one. "[These] icons are...modified versions of clip art in most cases, because the client didn't have a full budget to develop icons from scratch,"[4] was a common statement.

While some designers shy away from using symbols because of the cost and perceived complexity of designing symbols for medical settings, there are enough available symbols to create a framework to start from. These include Department of Transportation (DOT) symbols for Restrooms, Admissions, Emergency, Elevators, Waiting Room, Information, Pharmacy and Restaurant. (See Appendix D for examples.)

For other, more specific medical terms, symbols that have been used, but are not necessarily "standards," should be reviewed and adopted if deemed appropriate, and where other terms do not have appropriate symbols, grant support may be made available for selected designers to explore and test possible solutions. The final "pool" of symbols would be made available for all health care facilities and designers to use.

To make the selections required, one of the following three options should be utilized:

1) Have a group of designers, medical professionals and lay people select existing designs that are appropriate, and design new symbols as needed, testing them per ISO standards. This will take time, resources and money, and unless the symbols are tested in other countries, will not gain any status with the standards organizations.

2) Have a group of designers, medical professionals and lay people select designs that have been used, design new symbols as needed, and with minimal testing, decide upon a standard. The

testing could be conducted amongst LEP communities throughout the U.S. This may provide some insight to the effectiveness of the selected symbols, but again time, resources and money will need to be expended. The results will not gain any official status with the standards organizations.

3) Have a small group of people select designs and decide upon a standard to be used with little or no testing. (See Appendices D.1-D.2 & E.1-E.2 for examples of existing symbol systems.) This option relies on education of the pubic to build recognition of the system, and for it to be effective.

Options 1 and 2 are similar situations to the Department of Transportation's symbols system, which was developed by designers selected by the American Institute of Graphic Arts. Option 3, however, may be the most time expedient. Many of the medical concepts needing symbols will defy an "intuitive" design, instead they will need explanations as to their meanings. As described in Part One, educating the public will be the key to a successful program.

3 DEVELOP TRANSLATION "POOL"

Once common terminology is decided upon, it should be translated into as many languages as likely to be encountered throughout the United States.

Rationale

Multilingual signs are a desire of Hablamos Juntos, the Grantees and the Federal Government. The U.S. Department of Health and Human Services' Office of Minority Health (OMH) issued fourteen Culturally and Linguistically Appropriate Services (CLAS) standards to aid LEP people using the health care system. Standards seven and eight are the most applicable to signage:

7 Provide oral and written notices, including translated signage at key points of contact, to clients in their primary language informing them of their right to receive interpreter services free of charge.

8 Translate and make available signage and commonly-used written patient educational material and other materials for members of the predominant language groups in service areas.[5]

The OMH *Checklist #2: Establishing adequate signage in other languages* further defined procedures to develop multi-lingual signs. (See Part One, pp 1.31-1.32 for the recommendations.)

The costs of translations have been points of concern for many people. "Placing the burden on health care providers to obtain accurate translations of medical and/or legal documents is a very high standard. Cost-effective resources may not be easily accessible to home care agencies and other health care providers to have materials accurately translated." [6]

SNOMED already exists in a Spanish language format, allowing for a common starting point to develop other translations. Another format is in German, with a Dutch version being planned.[7] Other factors may be the availability of qualified individuals who can do accurate and culturally appropriate translations. If SNOMED does become the standard for medical terminology, it should be the standard to be used in wayfinding terminology as well.

Nationally recognized leaders for each language community should be involved in developing and promoting translations for their

particular language.
Note that this is not a recommendation to include all the languages on the signs. Instead, this will be a resource to retrieve information—find the translations needed for inclusion in the support materials such as directories and site maps.

The common terminology developed in Recommendation 1, and their related symbols and translations will be combined to start an effective multi-language "pool" of commonly used terminology/symbols/translations for public use. Free access to this common pool will make the use of symbol signs easier to utilize and more attractive to medical facilities and designers alike. At this time, those professionals should be informed of this pool. While it is in the preliminary stages, they may wish to provide input that can further the system's effectiveness.

It is expected that over time, this pool should grow as new terms and needs are encountered.

4 DEVELOP USER STANDARDS

Implementation standards for both signage and needed support uses of the terminology/symbols/translations should be developed.

Rationale

Standards will have to be developed so that when symbols are used, they will be used in a manner appropriate for maximum effectiveness. The standards should show the adopted symbols, their English terminology, and their translations; examples of typical uses, do's and don'ts along with an explanation of how the system works.

There should also be examples of typical uses for translation leaflets and maps, and how they are an effective tool of the entire multilingual

symbol and wayfinding system.

These standards should not define a particular signage system. The sign design should be specific for each individual facility.

The requirements and recommendations from the Office of Minority Health because of Title VI of the Civil Rights Act of 1964 (see Part One of this report for further detail) can be addressed through the use of symbol signage and related print graphics.

5 PERFORM SIGN AUDIT AND PROGRAM EACH GRANTEE SITE

Rationale

The sign audit and programming go hand-in-hand. A **sign audit** is performed on existing projects. It is used to find all signs—official and unofficial (hand lettered, etc.)—within a project and make note of their content and locations. Without a sign audit, it will be hard for wayfinding experts to develop an efficient sign system.

From a wayfinding standpoint, **programming** reviews the site and determines the needed sign types, quantities and messages; along with their optimum placement. It differs from architectural programming which usually involves simple "bubble plans" that place uses within a facility for effective functionality. Unlike wayfinding programming, architectural programming is not designed to help people to navigate a site.

Wayfinding is using the whole environment to allow a person to self-navigate a site as much as possible using visual cues that direct and identify key, desired points within the environment. Cues include the architecture, the landscape, color, lighting, the staff, and signs that have words, symbols and direction arrows.
(See Appendix A for additional wayfinding information.)

During the planning stages of new projects, the designer needs to review the plans and understand the intended uses within the site. Key decision points and prominent architectural features must be noted so they can be effectively utilized in the wayfinding scheme. Knowledge of how people act and react helps to determine potential trouble spots within the site. At this point there are opportunities to mitigate trouble areas and make alterations or adjustments deemed necessary.

On an existing project, such as the ten grantee sites, opportunities arise to better understand the effectiveness of the sign system. People, both the staff and the public, will have navigated the site. They will have tested the usefulness of the signs. A signage system already in place can be evaluated by the number of times staff must be asked to provide directions, or by the number of paper signs staff added to supplement the system.

For the ten grantee sites, programming will also determine what signs and/or their components are still usable; what needs to be eliminated or moved; where any weak links to the communication chain are, and if anything is missing, thereby preventing the system from being fully effective as a wayfinding tool. It is also the first opportunity to develop the sign message schedule.

An evaluation of a site's signs, its uses and users, is imperative for effective wayfinding. Several factors help to establish possible solutions:

> The percentage of first-time visitors; the urgency of need for the services sought; the quantity of destination and/or decision choices; the emotional and mental condition of the visitors; the complexity of the route; the level of ambient distraction; [8] and the percentage of the site that is self-guided or escorted.

Once these factors are established and understood, the wayfinding system can be developed.

6 SIGN SYSTEMS TO BE EXPANDED, OR DESIGNED AND INSTALLED

Once the grantee sites are programmed, the expansion, design and installation of the sign systems and their related support material should occur.

Rationale

The proposed standards for multilingual wayfinding systems are for the content use of terminology/symbols/translations only—what should appear within the signs. The standards do not address the specific design of each site's sign system. New sign systems, if determined to be required, and supplemental information sheets (site maps in various languages, etc.) will need to be designed through all design phases including construction and installation. Existing sign systems may need additional signs to make their sites fully functional.

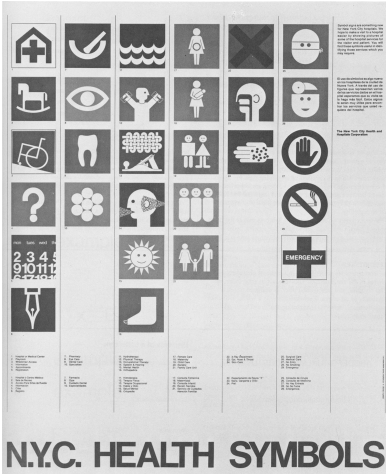
To accommodate multiple languages, it is recommended that the grantees use symbol graphics with English verbiage located underneath. The symbols should be used on both the interior as well as exterior directional signs when appropriate.

Inexpensively printed translation handouts in various languages used within the community should be developed to explain the symbols' meanings.

The use of individual handouts, each containing an individual language would address one of the concerns made early on about the CLAS standards: "Comments...raised concerns about the advisability of merely translating materials versus creating original documents in non-English languages." [9]

Translated site maps should be available on the facility's web site, included with pre-appointment materials, and at key points throughout the facility. These key points include entries of buildings, places adjoining directional maps or directories and other locations deemed relevant.

Each location having handouts will have to be serviced on a



An example of a poster designed by E. Christopher Klumb Associates for the New York City Health and Hospitals Corporation demonstrating in both English and Spanish what the sign symbols mean.[10]

Similar type handouts in various languages would help LEP people navigate throughout an unfamiliar site that uses symbol graphics. (See Appendix B for larger view.)

regular basis to make sure the handouts are readily available. One designer contacted for this report mentioned that litter from discarded handouts could be a problem, particularly in large hospitals or clinics with high daily visitation numbers. At each exit, boxes should be prominently displayed available as recycling centers for the handouts. It may or may not be desirable to reuse them, but they should not go to waste. The effectiveness of the handouts, and their benefits to the users, should outweigh the litter concerns. If a person is both LEP and illiterate in their native language, interpreters, whether on site or via telephone, may assist in explaining what the symbols mean.

Part One of this report explained that more than two languages on signs can make them extremely large and cumbersome to use. Spanish secondary copy may be desired when there is a large percentage of Latino clientele. In other cases, a different secondary language may be used instead of Spanish. Tactile letters and Braille translations are required by ADA Title III for English copy only. (See Appendix F.1-F.2 for Title III ADA sign requirements.) There is no mention of other languages. When a second language is used it is often smaller in size, and possibly in a different font. Arguments could be made that using smaller sized type could be seen as being discriminatory to the people that speak those languages. However,

Example of Patient Rights sign in both English and its Spanish translation. Note the type size differences between the signs.

when messages are translated into Spanish, for example, the translation is often longer than the original English. Using smaller type for translations helps to keep signs a manageable size.

After the sign audit, yet prior to installing the permanent signs, temporary signs should be used on site for a few weeks to make sure the messages and locations specified will be effective. Observations should be made and comments gathered from both test and general public users. Changes to the sign locations can be made as needed.

Also prior to the permanent installation of the sign system, the staff must be informed of its use. They are a part of its effectiveness.

> Orientation doesn't happen by osmosis. Staff who begin work at a large medical center don't know how to find their way around unless they are trained and have time to practice doing so. Staff also need to be instructed in how to give useful, concise directions. Otherwise, they will tend to give shorthand directions or direct people using too much detail.[11]

Finally, it must be understood that effective wayfinding is not static. The system must be maintained and updated as the site grows and evolves. Maps must be periodically checked that the information presented is still current, and copy on all signs is accurate and consistent.

7 EDUCATE THE PUBLIC

Once the new multilingual symbol sign system has been installed, the public must be informed of its use.

Rationale

Educating the public, English speaking and LEP, will play a key part in making the project successful. Locally and nationally, communities should be told about the implementation of this new system. On the local level, opportunities include community centers, church

groups and schools etc. Both locally and nationally, media outlets—television, radio, and newspapers should be contacted, and may provide free airtime or space through public service announcements. The more people realize that such a system exists, the more they may request their local health care facilities adopt its use. The attention to individual language groups should reflect well upon the local health care facilities.

Educating the public should also be on a one-on-one level. Before patients arrive to the facility, indeed a few days before the appointment, NHS Estates and several other articles recommend sending "pre-visit information" letters, particularly for first time visitors. These can include site/facility maps and symbol translations, and must include:

- Date and time of appointment
- The site and building name that appears on [the] site's external signs
- The department name that appears on [the] site's internal signs[12]

Including these types of materials should help the facility as well. More people will arrive on time, there will be fewer missed appointments, and people will find their destinations quicker, with less anxiety and less reliance on staff to direct them.[13]

While this information should be posted on the facility's web site, there are no guarantees that the visitor will have access to a computer, or will even think to look at the site if they do have one.

The development of the above information, including the maps, should be done by graphic design professionals and maintained by one department within the health care facility, and used by all other

departments for the sake of consistency and effectiveness.

9 EDUCATE THE MEDICAL AND DESIGN PROFESSIONS

This combination of terminology/symbols/translations should be announced to various organizations that can most benefit and utilize their existence: Medical administrators and facilities managers (American Hospital Association/AHA, etc.) Graphic designers and wayfinding experts (SEGD/Society of Environmental Graphic Designers, American Institute of Graphic Arts/AIGA); and architects, interior designers and planners (American Institute of Architects/AIA, American Society of Interior Designers/ASID, American Planning Association/APA).

Rationale

Once the standards are established and have been shown to be effective at the ten grantee sites, they should be made available through various design and medical organizations for distribution to their members via either their websites, trade magazines or CDs. While these organizations will have known of the project after Recommendation 4, at this point there will be field usage to show the validity of the chosen symbols. Having these and other related groups involved will help to ensure the use and success of the program and its adoption in other locations throughout the country.

CONCLUSIONS

The grantee sites range from small medical offices to large hospital campuses. Symbol signage can help their LEP clients to varying degrees. The smaller facilities will have fewer rooms to identify; they will need fewer symbol signs. They will need to have translated government mandated signs regarding services available. These types of signs don't benefit from symbol usage. The larger facilities will certainly benefit from their use. Each site will have to be evaluated on their own merits before the full scope of their needs can be determined.

The eight recommendations do not present a simple fix to a minor problem. The eight recommendations will require a hard look at each site's signage and wayfinding systems. The recommendations also require a total commitment for their implementation.

The population of LEP people in this country is growing. Their health care needs must be addressed. With the requirements and recommendations of Title VI of the Civil Rights Act of 1964, and the adoption of SNOMED terminology standards, there is an opportunity to develop standards for terminology/symbols/translations that benefit not just the LEP population, but the public as a whole. When people enter an unfamiliar health care facility across town or across the country, they should be able to understand the sign vernacular and wayfinding system of that building.

A standard terminology/symbols/translations pool will mitigate costs for health care facilities since the common terminology and symbol system with ancillary handouts can address a wider variety of the population with smaller, less complicated signs. Wall space will be saved. And translation needs will be reduced.

With an initial audit of each site, it will be possible to determine the scope of signage needed. At that time, budgets for implementation can be determined.

A major component to this project's success will be a commitment by the ten grantees, and any other facility that adopts it, to take a complete look at their existing interior and exterior sign package.

> Wayfinding leadership in the form of verbal, political and financial support, needs to emanate from top management in order to be felt throughout the organization. Facilities managers need to encourage top management to act as stakeholders from the outset of a wayfinding project and to commit to its long-term support.[1]

WAYFINDING

Part One explored the existing or non-existing use of symbol signs for LEP populations, particularly in health care facilities. Part Two provides recommendations to develop a terminology/symbols/translations pool to be available to those facilities. That pool will greatly assist both English speaking and LEP groups to navigate through and identify spaces within medical buildings and campuses. To make these symbols most effective, they must become part of an overall, effective wayfinding system.

What Is Wayfinding?

Placing a sign on a wall with an arrow pointing in a particular direction is not wayfinding. Attaching a new sign system to an existing sign system, or adding symbols to that system, is not wayfinding. Wayfinding is using the whole environment to allow a person to self-navigate a site as much as possible using visual cues that direct and identify key, desired points within the environment. Cues include the architecture, the landscape, color, lighting, the staff, and signs that have words, symbol graphics and direction arrows.

"Unlike some other issues, wayfinding is not trendy, not time-limited and not able to be improved in a piecemeal fashion or on only a temporary basis."
Myron Grant [1]

Orientation is the first step to effective wayfinding. The person must understand where they are before they can get to where they need to be. In an exterior setting, visual cues such as mountains, buildings, architectural features, trees, roads, etc., as well as signs, help to orient a person, and guide them to their destination. Inside a parking structure or building, the previous visual cues are lost. New cues, usually signs and graphics, replace the lost cues.

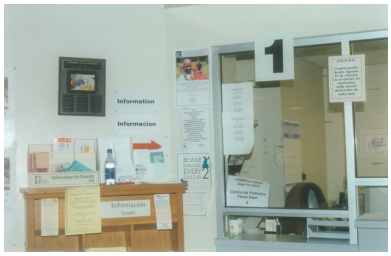
Often when a person enters an unfamiliar location, they will do a quick scan of the site to try to understand the layout. Upon entering a campus or parking structure, directional requirements must be readily apparent to avoid traffic congestion and backups. When entering buildings, reception desks and/or directory signs often

become the first point of reference for the visitor within a building. Directional maps can be combined with the directory signs to further their orientation effectiveness.

As a person travels through a new site—be it a campus, parking structure or building—at every intersection or decision point they will need to reorient themselves. Directional or wayfinding signs should be placed at these key locations to avoid confusion or indecision. However these signs need to be placed so that they make sense of the information given. The information given must be current, and direction arrows should be correct. A good wayfinding system doesn't require the user to "think." The system triggers a natural response to the direction provided.

Providing information is the second step. Where a multilingual, symbol-graphic sign system is desired or required, the directional signs may be the first opportunity to establish to LEP people that such a system is in place; that this is a facility concerned with their clientele's well-being. As shown in Appendix E of Part One, "I Speak" cards can establish a person's language needs for verbal interpretation and assistance. Hand-outs in various languages should demonstrate how the symbol signage system will help to guide the visitor throughout the site.

Messages should be brief and to the point, particularly if symbols are used. All signs should be displayed prominently. They need to be seen to be understood. Consequently, there should be no surrounding clutter that will diminish their message and impact.



Example of excessive number of signs and clutter causing diminished effectiveness for all the signs.

Adequate, accurate directional signs benefit the health care provider in several ways. The American Hospital Association reported that "[a] coherent, logical, and easily understood system of informational signs

and graphics in a hospital or other health care institution can make a substantial contribution to the smooth functioning of the institution and the satisfaction of its users." [2]

In addition to getting people "where they need to be and tactfully steer them away from areas where they should not," a clear, consistent signage and wayfinding system can add to the "message that the institution and its personnel are concerned with the needs and anxieties of patients and visitors that they want to help." [3]

According to Patricia D. Malick, other intangibles are that "[p]eople assume that the quality of care is consistent with the quality of the interior." [4] Further,

> [p]atients and employees often interpret the physical settings of various departments as indicative of the hospital's attitude toward those departments. Therefore, it is important to avoid creating a two-class system, such as in a hospital that has a beautiful new unit attached to a shabby core....[5]

The report *Methodologies of Providing High-Quality Customer Service: A Facilities Management Approach*, states:

> By the time your customers get to the entrance of the hopsital, they should already have a positive impression. As they enter your facility, your customers should be impressed with the interior setting of the hospital. Once again, directional signage is of the utmost importance....
>
> When your customers interact with the interior environment of your hospital, they will expect to see a clean, orderly, well-maintained facility that is easy to get around in. All patient care and public areas must be clean, clutter-free, and aesthetically

pleasing to customers. If an area looks sloppy, the customer may think the patient care is the same. [6]

People found within a medical facility tend to fall into one of three categories: Staff, patient or visitor. The signage should respond to each of these groups specific needs.

Staff may be full time or part-time. They may be fully aware of the ins and outs of their building. However, some of the staff may be new, may work on site only occasionally, or may be familiar only with their own particular area.

Patients and visitors are usually less familiar with the surroundings. The signage must be most responsive to them. Their reasons for being on site are often stress inducing. If a building is not well thought-out, or has grown over time to become maze-like in its layout, and if the existing signage system is incoherent, incorrect or otherwise ineffective, the opportunity to add to that stress is greatly increased.

In conducting a survey of patients, visitors and staff to develop better wayfinding in their medical facilities, NHS Estates discovered that people became "anxious because car parking problems made me late for my appointment" or even became angry when directional signs "weren't clear" or were "too cluttered." Some of their medical sites caused confusion because "the entrance is not at the front of the building" or their own "[s]taff don't get to know about new departments or name changes." [7] NHS Estates determined that the more stressed people became, the less information they were able to take in. Poor wayfinding caused people to:

"Building Research Survey" noted that in a typical 800 bed hospital with an inadequate sign and wayfinding system, an average of 8000 people hours were spent each year by staff members to give directions to visitors. [8]

Be late for, or miss, their appointments; get angry and violent; have their stress levels affect medical test readings, find the site

inaccessible; develop a poor opinion of the site; ask staff for directions, causing the staff to lose productive time.[9]

In addition, if those people do not speak English or have Limited English Proficiency (LEP), the already stressful environment can become nearly intolerable. As noted in Part One of this report, a cohesive symbol signage system can benefit all portions of the population.

The need for wayfinding expertise should not be underestimated. Wayfinding decisions are often made by committees or by individuals without training or previous exposure to the issue. Some organizations incorrectly assume that all architects are highly knowledgeable about wayfinding, and rely on them exclusively for wayfinding advice, as well as for sign and map design. Bringing in wayfinding experts early in a project can help facility managers focus on key issues and avoid costly mistakes.[10]

OTHER SYSTEMS

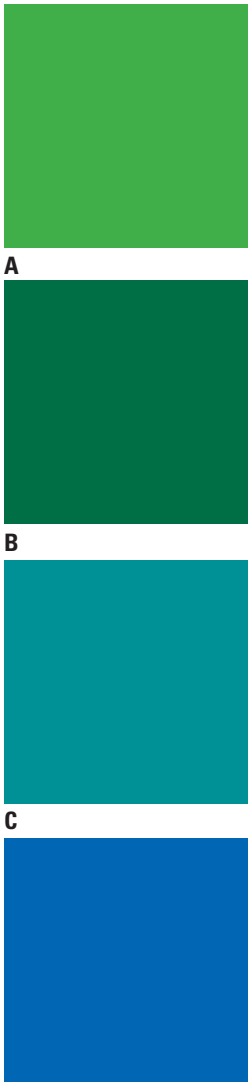
The **Addressing** system noted in Part One as used by Kaiser Permanente and developed by Kate Keating (Part One, pp 28-29) is a potential option. It tends to uses the same ancillary materials that are recommended for the symbol system, including leaflets explaining the correlation between numbers and rooms. Both systems share the same methods, they have different features to achieve the same goals. However, as shown in Part One, and noted in Part Two, government CLAS standards are recommending the use of symbols to reach others who have LEP.

Color-coding is often suggested as a component of wayfinding. However if it is implemented, it is often not carried through completely, and it is rarely explained to the public how it is supposed to work.

Studies have shown that most people can only recognize five colors before they have trouble differentiating between them. A large health care facility in England utilized a color coding system for their campus. A color was assigned to each public building; ten buildings in all. To complete the code, two greens (light and dark green) and two blues (turquoise and mid-blue) were used. People became confused when told by staff—who often wouldn't differentiate the light or dark colors—to "follow the blue (or green) signs". [1]

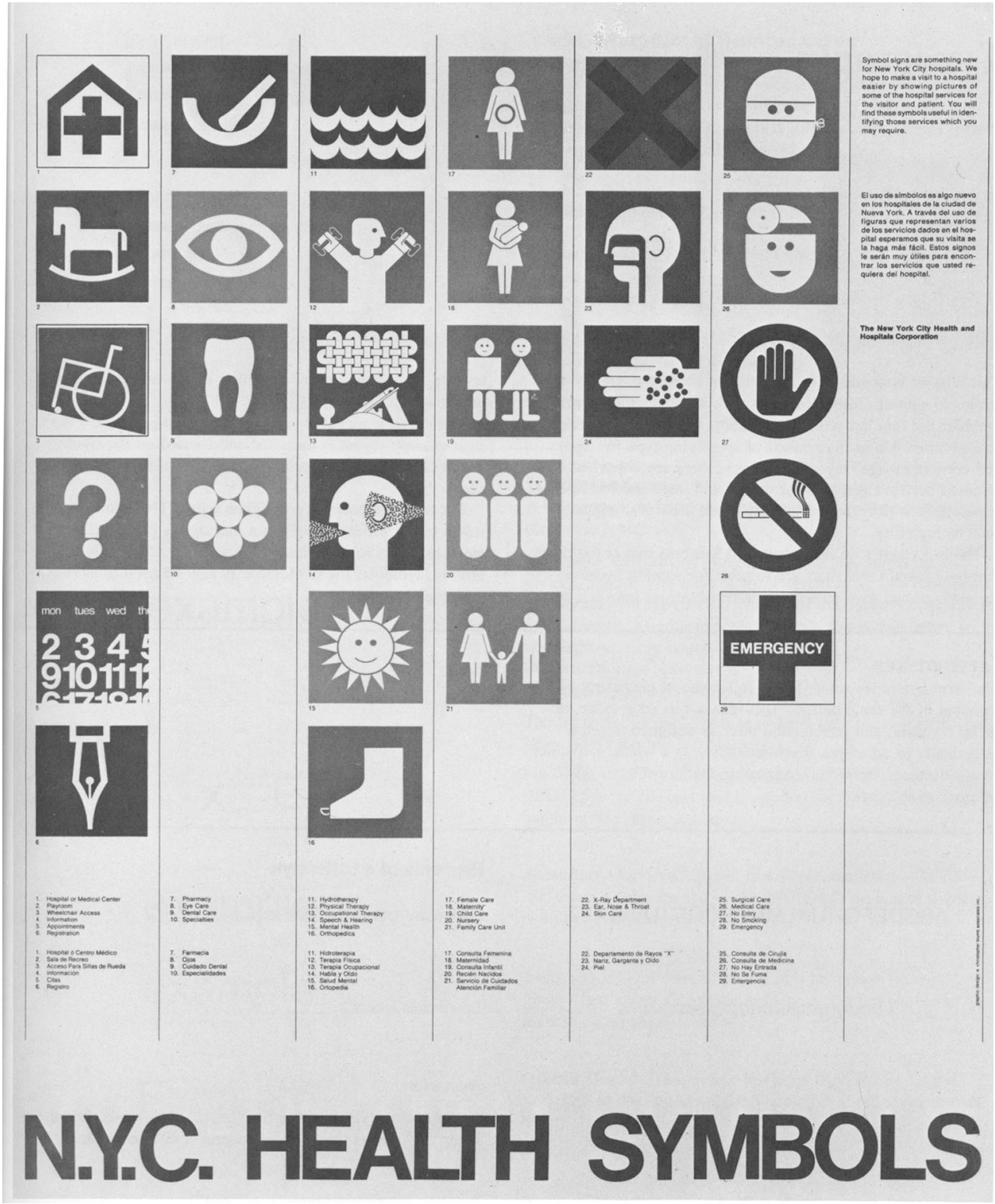
Another challenge to color coding is that eight percent of men and one percent of women have color impaired vision, usually red/green differentiation.[2]

Unless it is carried out throughout the interior furniture and finishes scheme, color coding is rarely effective. According to wayfinding specialists Information Design Unit, two out of three people do not even notice color-coding on signs.[3]



Problems arise with color coding when versions of the same color have to be used. Is A green or light green? Is B dark green or forest green, C turquoise or blue green?

SYMBOL POSTER, KLUMB & ASSOCIATES



DOT SYMBOLS

Restrooms

Accessibility

Elevators

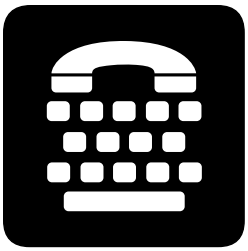
Hospital

Waiting Room

Volume Control

Nursery

Hearing Assistance

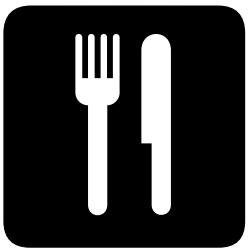


Text Telephone

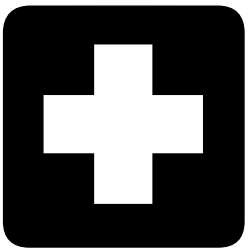
Drinking Fountain

Information/US

Coffee Shop



Restaurant



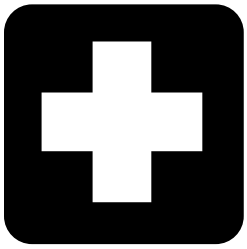
First Aid

Tickets

Examples of DOT standard symbols appropriate for immediate use in health care settings.

SYMBOLS EXPANDED

Examples of standard symbols redesigned for use in health care settings.



First Aid

Emergency

ATA / Tickets

Admissions

Shops

Gift Shop

Women

Maternity

Maternity Detail

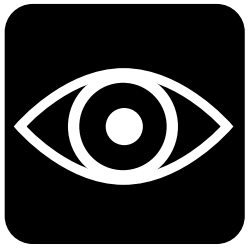
Men

X-Ray

X-Ray Detail

SYMBOLS EXPANDED (CONT.)

Examples of potential standard symbols for use in health care settings.



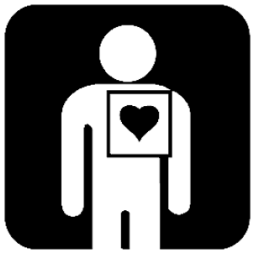
Opthamology

Ambulance

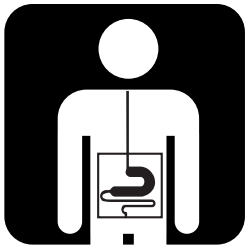
Dentistry

Human Standard

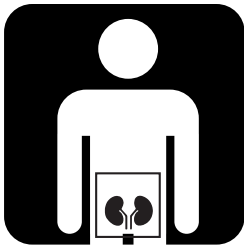
Nursing



Cardiology



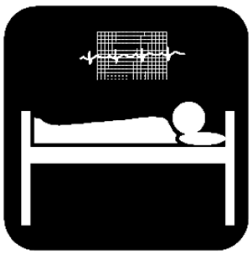
Gastroenterology



Kidneys

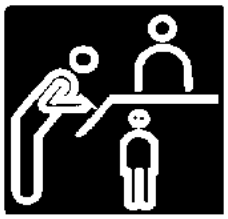
Pathology

Pathology

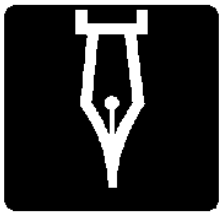


Critical / Intensive Care

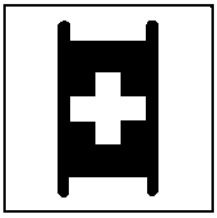
SYMBOL COMPARISONS

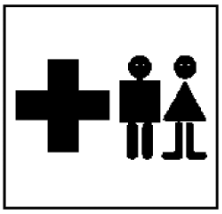


Comparisons of similar symbols used in health care settings.



Admissions

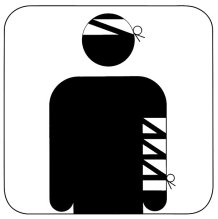




(Pediatric Emergency)

(Directional)

Emergency



Outpatient

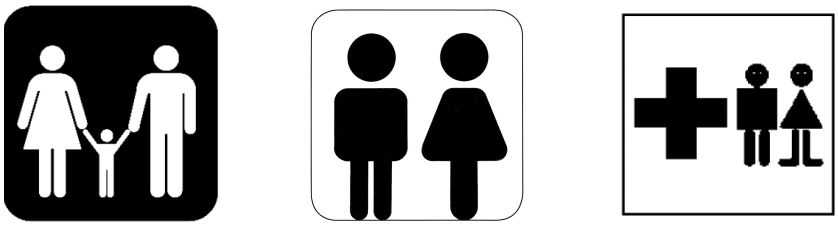
SYMBOL COMPARISONS

Comparisons of similar symbols used in health care settings.

Pharmacy

Maternity

Nursery



(Emergency)

Pediatrics

Patient Rooms

TITLE III, THE AMERICANS WITH DISABILITIES ACT

"Signs which designate permanent rooms and spaces shall comply with 4.30.1, 4.30.4, 4.30.5 and 4.30.6"* of Title III of the ADA. "Other signs which provide direction to, or information about, functional spaces of the building shall comply with 4.30.1, 4.30.2, 4.30.3 and 4.30.5"* of Title III. "Parking spaces designated as reserved for individuals with disabilities;...accessible passenger loading zones;...accessible entrances when not all are accessible (inaccessible entrances shall have directional signage to indicate the route to the nearest accessible entrance;...[and] accessible toilet and bathing facilities when not all are accessible"* shall be identified by the International Symbol of Accessibility.

4.30.1 General. Signage required to be accessible by 4.1 shall comply with the applicable provisions of 4.30.

4.30.2 Character Proportion. Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10.

4.30.3 Character Height. Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read. The minimum height is measured using an upper case X. Lower case characters are permitted.

4.30.4 Raised and Brailled Characters and Pictorial Symbol Signs (Pictograms). Letters and numerals shall be raised 1/32 in, upper case, sans serif or simple serif type and shall be accompanied with Grade 2 Braille. Raised characters shall be at least 5/8" (16mm) height, but no higher than 2 in (50mm). Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram. The border dimension of the pictogram shall be 6 in (152mm) minimum in height.

4.30.5 Finish and Contrast. The characters and background of signs shall be eggshell, matte or other non-glare finish. Characters and symbols shall contrast with their background—either light characters on a dark background or dark characters on a light background.

4.30.6 Mounting Location and Height. Where permanent identification is provided for rooms and spaces, signs shall be installed on the wall adjacent to the latch side of the door. Where there is no wall space to the latch side of the door, including at double leaf doors, signs shall be placed on the nearest adjacent wall. Mounting height shall be 60 in (1525mm) above the finish floor to the centerline of the sign. Mounting location for such signage shall be so that a person may approach within 3 in (76 mm) of signage without encountering protruding objects or standing within the swing of a door.[1]

SOURCES

INTRODUCTION

1 *Memorandum of Understanding*. Hablamos Juntos. 15 Jan. 2003

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RECOMMENDATIONS

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7 Skiba, Joanne & Joe Schramm. [Telephone interview]. 27 Feb. 2003.

8 Hunt, Wayne. "Basic Principles of Wayfinding." Designing and Planning Environmental Graphics. Madison Square Press. 1994

9 United States of America. Office of Minority Health [Online]. *A Practical Guide for Implementing the Recommended National Standards for Culturally and Linguistically Appropriate Services in Health Care*. U.S. Department of Health & Human Services. <http://www.omhrc.gov/inetpub/wwwroot/clas/sec6ck2.htm> Accessed 6 Feb. 2003.

10 Follis, John, Dave Hammer. *Architectural Signing and Graphics*. Whitney Library of Design. 1979.

11 Grant. [Online].

12 *Patient Experience*. [Online]. NHS Estates. <http://patientexperience.nhsestates.gov.uk/wayfinding/wf_content/solutions/pre-visit_information.asp>Accessed 23 Jan. 2003.

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CONCLUSIONS

1 Grant, Myron. *Wayfinding Woes*. [Online]. Hospitalconnect.com. <http://www.hospitalconnect.com/jsp/article.jsp?dcrpath=AHA/NewsStory_Article/data/HFMMAGAZINE572&domain=HFMMAGAZINE> Accessed 3 Feb. 2003

SYMBOLS AND WAYFINDING

1 Grant, Myron. *Wayfinding Woes*. [Online]. Hospitalconnect.com. <http://www.hospitalconnect.com/jsp/article.jsp?dcrpath=AHA/NewsStory_Article/data/HFMMAGAZINE572&domain=HFMMAGAZINE> Accessed 3 Feb. 2003

2 *Signs and Graphics for Health Care Facilities*. American Hospital Association. 1979.

3 Ibid.

4 Malick, Patricia D, IDC. *Environmental Master Planning: A Step-By-Step Approach to Creating A Unified Quality Environment*. [Online]. <http://www.hospitalconnect.com/ashe/member/members/enviroplan0491.html> Accessed 3 Feb. 2003.

5 Ibid.

6 Grady, F. Dennis, et al. *Methodologies of Providing High-Quality customer Service: A Facilities Management Approach*. American Society for Healthcare Engineering of the American Hospital Association. 1999.

7 *Patient Experience*. [Online]. NHS Estates. <http://nhsestates.gov.uk>Accessed 23 Jan. 2003.

8 Follis, John, Dave Hammer. *Architectural Signing and Graphics*. Whitney Library of Design. 1979.

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10 Grant [Online].

OTHER SYSTEMS

1 *Wayfinding strategy, Is colour-coding appropriate?* [Online]. NHS Estates. <http://patientexperience.nhsestates.gov.uk/wayfinding/wf_content/strategy/colour_coding.asp>Accessed 23 Jan. 2003.

2 Ibid.

3 Ibid.

APPENDIX F.1-F.2

1 United States of America. Department of Justice. Civil Rights Division. *The Americans with Disabilities Act, Title III Technical Assistance Manual*. U.S. Department of Justice, Civil Rights Division. No Date Given.

THE AUTHORS

Jamie R. Cowgill, SEGD

President / Principal Designer, JRC Design

Jamie has over twenty years of professional experience in the graphic design field, of which eighteen have been devoted almost exclusively to environmental graphic design, wayfinding and corporate identity/ communications. Prior to starting JRC Design in 1988, Ms. Cowgill was Art/Creative Director for Bleier Industries, one Arizona's most prominent custom fabrication firms for signage and graphics. She has developed complete sign packages for several health care facilities.

Jim Bolek, SEGD

Senior Designer, JRC Design

Jim has over fifteen years experience in graphic design, environmental graphic design and wayfinding. He has coordinated all phases of environmental graphics projects for office, retail and residential environments, and has taught classes in EGD at the University of Arizona and Northern Arizona University.

JRC Design

JRC Design was established in 1988 in Scottsdale, Arizona as an independent graphic design firm, specializing in environmental graphic design and corporate communications. Their team of designers/ artists brings diverse individual talents to the collaborative design process. They are dedicated to creating design solutions that are imaginative, appropriate, functional and enduring.

Their expertise comes from many combined years of experience in complete design and project coordination, materials knowledge, production techniques, printing, and fabrication for varied clientele – from private corporations to municipalities, institutional to hospitality, retail to residential. This diversity in clientele and project types gives them the ability to apply design in ways that help define and communicate the client's needs responsibly. It further ensures that their clients will receive a thorough assessment and understanding of the project with guidance towards unique solutions that match the project's needs.

Further information can be requested at 480-946-3028 or jimb@jrcdesign.com.