



Developing Universal Symbols for Health Care Facilities

Strengthening the evidence and understanding of how to improve hospital facility signage

SUMMARY

To someone who doesn't speak English, or has minimal reading skills, going to a hospital or health care facility can be like entering a foreign country—beginning with the signs on the wall that they don't understand.

Universally recognized graphic symbols, such as those used to delineate parking spaces and other facilities for individuals who are physically disabled, no smoking areas and restrooms for women and men can be effective communication tools.

Project staff at the University of California, San Francisco, and the Society for Environmental Graphic Design (SEGD) worked with a design team to create and test a set of universal graphic symbols to help people with limited proficiency in English find their way around health care facilities.

Results

Project staff created, tested and disseminated 54 graphic symbols, available [online](#), to help those with limited English navigate health care facilities.

- Four demonstration sites developed "wayfinding" systems that incorporated these symbols into their signage. By the fall of 2010, two sites had fully implemented new signage and the other two were expected to do so over the next few months.
- Project staff developed best-practice guidelines and other resources to help health care facilities redesign signage using graphic symbols, including *Universal Symbols in HealthCare Workbook: Executive Summary Best Practices for Sign Systems* and *Universal Symbols in Health Care: Developing a Symbols-Based Wayfinding System: Implementation Guidebook*.

Lessons Learned

1. Incorporating symbols into signage in health care settings is complex, and there is a lack of evidence about which symbols are best.

2. While it is important to test symbols in diverse settings, that diversity can impede cross-site comparisons.

Funding

The Robert Wood Johnson Foundation (RWJF) provided two grants totaling \$767,614 to support this project.

CONTEXT

With a plethora of signs and directories, health care facilities can be challenging places to navigate, particularly for people who speak limited English. Given that language diversity in the United States is greater than that in Europe, and that federal law requires health facilities to display signs that all patients can understand, facilities need to find effective ways to communicate with their diverse populations.

Universally recognized graphic symbols, such as those used to delineate parking spaces and other facilities for individuals who are physically disabled, can be useful, but very few have been created for health care facilities.

In 2003, *Hablamos Juntos*, a national program of RWJF designed to improve language services in health care settings, commissioned JRC Design, located in Scottsdale, Ariz., to prepare a white paper on the feasibility of using symbols for health care "wayfinding." (Wayfinding is the art of providing information to guide people to their destination. It can include maps and signs; overt clues in architecture and interior design; or the use of colors, patterns and textures.)

The white paper concluded that symbols were a viable option and that a set of tested, publicly available symbols would give designers and health care facilities a much-needed alternative to typical word signage. The paper was published in April 2003 in two parts:

- *Symbol Usage in Health Care Settings for People with Limited English Proficiency Part 1: Evaluation of Use of Symbol Graphics in Medical Settings*. Available [online](#).
- *Symbol Usage in Health Care Settings for People with Limited English Proficiency, Part Two: Implementation Recommendations*. Available [online](#).

RWJF's Interest in This Area

RWJF has made a number of investments in addressing language barriers to access to care:

- ***Hablamos Juntos: Improving Patient Provider Communication for Latinos***. RWJF launched this program to improve communication between health care providers and

Latino patients and eliminate language barriers that can lead to medical errors and compromise the quality of care. The program invested \$10 million in 10 demonstration sites around the country, ranging from health plans and large hospital systems to small nonprofit community organizations working on behalf of patients and physicians. For more information, see [Program Results](#).

- ***Opening Doors: A Program to Reduce Sociocultural Barriers to Health Care.*** This RWJF initiative, launched jointly with the Henry J. Kaiser Family Foundation in 1992, recognized that even when health care is available and affordable, language, culture, race and ethnicity can impede access and lead to poorer health outcomes.

Opening Doors allocated \$5.5 million for 23 projects in rural and urban areas in 11 states to identify and reduce sociocultural barriers. Three of those projects involved trained language interpreters who facilitated communication between patients and providers. For more information, see [Program Results](#).

- ***Speaking Together: National Language Services Network.*** This RWJF program identified, tested and assessed strategies for hospitals to provide effective language services to patients with limited English proficiency.

The program led 10 selected hospitals through a 16-month learning network to test new ideas, quantify results and share lessons learned. Program lessons provide models of effective language services that hospitals can adapt to meet the needs of linguistically diverse patients. See *In Any Language: Improving the Quality and Availability of Language Services in Hospitals* for more information on the program.

THE PROJECT

Project staff at the University of California, San Francisco, and the Washington-based Society for Environmental and Graphic Design (SEGD) created and tested a set of universal symbols to help people with limited English find their way around health care facilities.

Phase 1—Creating an Initial Symbol Set

In 2004, project staff surveyed the 10 *Hablamos Juntos* grantees and other interested parties to identify key hospital service areas that needed to be signed. After collecting 220 health care terms and conducting further surveys, they selected 28 terms for which they would develop wayfinding symbols.

Guided by JRC Designs and Wendy T. Olmstead, a symbols researcher who was a consultant to the project, a team of seven health facility designers from around the country designed and tested candidate symbols, which became publicly available in 2006.

A project advisory committee lent its expertise in design and health care (see [Appendix 1](#) for more information).

Phase 2—Adopting the Symbols and Expanding the Set

Hablamos Juntos and SEGD encouraged health facilities to adopt the initial set of 28 symbols, and tested some two dozen others in the second phase of the project, which ran from 2008 to 2010. "The real reason for doing Phase 2 was to build long-term capacity. Our hope was to build a group of folks who we interested in this topic, knew the methodology and were convinced that this was an area that was worthy of study," said Yolanda Partida, project director.

A large, multidisciplinary team, including specialists in wayfinding analysis and design, legibility, symbols development and testing, and health care facilities wayfinding, worked in two parallel tracks to:

- Research, design and test new symbols in partnership with a consortium of university design programs. The participants were at the University of Cincinnati, University of Iowa, California Polytechnic State University and Kent State University.
- Develop prototype signage and wayfinding programs at four health facilities. The demonstration sites, which received no outside funding for their participation, were:
 - Women's and Infants Hospital, a neonatal and pediatric care facility in Providence, R.I., is part of a large health care campus.
 - International Community Health Services (ICHS), a small, newly built community clinic in Seattle, serves a population comprising more than 50 different language groups, with Chinese language speakers the most prevalent.
 - Children's Mercy Hospital in Kansas City, Mo., planned to use symbols for a 500,000 square foot expansion that included their emergency department, beginning with an ER/OR and MRI project.
 - Grady Health System in Atlanta, which had helped to test the universal health symbols developed in Phase 1, planned a five-year effort to replace existing signs with symbols in all facilities across the multi-building campus.

Under a subcontract, Corbin Design, a Traverse City, Mich., firm that specializes in wayfinding systems, surveyed facility staff and visitors, documented signage programs in each facility with "before and after" photographs and supported testing of symbols.

Challenges

Certain health terms, such as cancer, infectious disease and diabetes, have no immediately recognizable image and proved difficult to convey. In general, symbols

representing commonly understood destinations, such as the radiology and pediatrics departments, were easier to understand than what the project director called the "ologies"—departments such as neurology, oncology and gastroenterology.

"Unlike airports and train stations, which are everyday kinds of experiences, many of the references in health facilities are relatively unknown to the common user," said Partida. "The health world is a culture and a language with attitudes and beliefs just as profound as a different nation or a different country."

Culture can complicate the development of symbols in sometimes unpredictable ways, underscoring the importance of real-world testing. A prescription bottle with the letters R_x confused Hispanics, who thought it represented the radiology departments (as in "rayos-Xs"). On the other hand, surveyed individuals were comfortable with the symbols of a teddy bear for pediatrics and a New England-style church to represent a chapel, even though these might not have been familiar in their native environments.

RESULTS

Results of Phase 1: Creating an Initial Symbol Set

According to reports to RWJF, project staff:

- **Tested 28 wayfinding symbols for comprehensibility, drawing on input from 300 people in 10 states.** Participants spoke English, Spanish or a variety of European, Indian and Asian languages (including Amharic, Cantonese, Creole, Hindi, Laotian, Mandarin, Nuer, Portuguese and Vietnamese).
- **Field tested the 28 symbols on signage at four health care facilities, after revising those that were not sufficiently comprehensible.** The testing took place at Somerville Hospital, Somerville, Mass.; Saint Francis Medical Center, Grand Island, Neb.; Grady Health System, Atlanta; and Kaiser Permanente, San Francisco).
- **Posted the 28 symbols online.**

For more details about the methodology used to develop and test the symbols, see the *Hablamos Juntos* [Web site](#). Also, see *Symbol Usage in Health Care Settings for People with Limited English Proficiency, Part Three: Symbols Design Technical Report*.

For findings on the effectiveness of the symbols, see [Appendix 3](#).

Results of Phase 2: Adopting and Expanding the Symbols

According to reports to RWJF:



Diabetes
(Education)



Labor and
Delivery



Pharmacy



Ambulance



Laboratory

- **Faculty and students at the participating universities conducted an in-depth review of the signage needs of the four demonstration sites, designed and tested 155 new wayfinding symbols and added 26 to the original set for a total of 54.**
 - **Project staff provided training and technical assistance to help the four sites implement their signage redesign projects.** A technical advisory panel comprised of leading national experts in symbols and wayfinding design consultants also provided guidance (see [Appendix 1](#)).
 - **By the fall of 2010, two of the demonstration facilities (International Health Care Services in Seattle, and Women and Infants in Providence, R.I.) had fully incorporated the symbols into their signage.** The other two facilities encountered challenges in their redesign effort but were expected to complete the process over the next few months, according to the project director.
 - **The 54 symbols for wayfinding in health care facilities created through this project are in the public domain, and free to anyone who wishes to use them.** Twelve symbols are for administrative or facility services, 32 for clinical or medical destinations and 10 for imaging services. The symbols can be downloaded in various formats [online](#) (scroll down on the page).
 - **Project staff developed best-practice guidelines and other resources to help health care facilities redesign signage using graphic symbols.** Key publications include:
 - *Universal Symbols in HealthCare Workbook: Executive Summary Best Practices for Sign Systems* includes best practices for symbol signage projects and a summary of recommendations for implementing them. Available [online](#).
 - *Universal Symbols in Health Care: Developing a Symbols-Based Wayfinding System: Implementation Guidebook* describes five important elements for effective planning and implementation of a signage project using graphic symbols. It includes planning tools and case examples drawn from the four innovator sites implementing symbols signage and other best-case examples. Available [online](#).
 - *Symbol Usage in HealthCare Settings for People with Limited English Proficiency, Symbols Design Technical Report (Part Three)*, September 2005, describes details of developing and testing health care symbols and includes tools used in the process. Available [online](#).
- The university design programs also produced several reports about their work, including *Universal Symbols in Health Care: Symbol Design Curriculum Report*, *University-Led Symbols Research* (available [online](#)) and *Universal Symbols in Health Care Technical Report: Testing Universal Symbols to Support Implementation in Health Facilities Signage* (available [online](#)).



Respiratory



Health
Education



Neurology



Dermatology



Imaging

CONCLUSIONS

Based on visits to the four demonstration sites, project staff and consultants concluded:

- Universal health care symbols can be used by populations with limited English in a variety of health care settings.
- Assigning a single symbol to each primary destination within the facility produces systems that are easiest to use.
- Symbols may be employed in many types of signage, provided attention is paid to size, legibility and unobstructed visibility.
- Prototypes should be tested and evaluated, and printed materials, Web sites, staff training and other systems can help educate users about the association of a symbol with a destination.

For more information, see *Universal Symbols in Health Care: Innovator Facilities Post Audit Report*, available [online](#).

LESSONS LEARNED

1. **Incorporating symbols into signage in health care settings is complex and still lacks an evidence base.** Staff found this project to be more complex than they had envisioned, partly because it highlights the broader challenge of health literacy. Without evidence to know which symbol works best, designers and their clients lean more on preference than proof. "It takes a long time for symbols to become intuitive and universal," said Project Director Yolanda Partida.
2. **Working with universities is complicated by the academic calendar, course requirements and other unique constraints.** Involving design schools gave the project access to faculty who were experts in design and to talented design students but other academic priorities sometimes complicated the effort. Weaving design work into course requirements proved to be easier than incorporating testing activities. (Project Director/Partida)
3. **Pay attention to the dynamics of developing a group and getting partners to assume leadership roles.** Getting people to work towards a common goal requires relationship building and cultivating leadership. Project staff saw their role as bringing the design experts together and enabling them to create a self-determined group. "We wanted to support meetings and vision building," said Partida, but participants tended to look to project staff for direction. "You have to pay attention to transitioning leadership in a way the group can accept."
4. **Health care facilities are competitive and may not readily see the benefits of collaboration.** While the demonstration sites were willing to show before and after

photos of signage redesign, they were reluctant to share their development process with one another. "You need to get the facilities to be owners of the learning process and of solution development and to take pride in doing that and to want to share that," said Partida.

5. **While it is important to test symbols in diverse settings, that diversity can impede cross-site comparisons.** "The world experience in Mexico is not the same as the world experience in California, or Chicago, or Florida," Partida said. "For symbols to be universal across language groups, you need to test your ideas in these waters." However, differences across the four demonstration sites made comparisons and contrasts difficult.

AFTERWARD

No further activities are planned. Photographs before and after the symbol signage was posted at the four pilot facilities will be posted on the *Hablamos Juntos* Web site when they become available in 2011.

Report prepared by: Kelsey Menehan

Reviewed by: Karyn Feiden and Molly McKaughan

Program Officers: Paul Tarini (ID# 056777), Pamela Dickson (ID# 049836)

Grant ID #s: 56777, 49836

Program area: Pioneer

APPENDIX 1

Project Advisory Committee

(Current as of the time of the grant; provided by the grantee organization; not verified by RWJF.)

Joan Barlow, B.S.

Production Associate - Communications
Robert Wood Johnson Foundation
Princeton, N.J.

Castulo de la Rocha, J.D.

President
Altamed
Los Angeles, Calif.

Pam Dickson, M.B.A.

Senior Program Officer
Robert Wood Johnson Foundation
Princeton, N.J.

Deeana Jang, J.D.

Policy Director
Asian & Pacific Islander American Health
Forum
Washington, D.C.

Hugo Morales, J.D.

Executive Director

Radio Bilingue, Inc.
Fresno, Calif.

Guadalupe Pacheco, M.S.W.

Special Assistant to the Director
Office of Minority Health, DHHS
Rockville, Md.

Edward Martinez, M.S.

Senior Healthcare Consultant
Viroqua, Wis.

Paul Schyve, M.D.

Senior Vice President, JCAHO
Oakbrook Terrace, Ill.

Victoria Weisfeld, M.P.H.

Senior Communications Officer
Robert Wood Johnson Foundation
Princeton, N.J.

APPENDIX 2

Technical Advisory Committee

(Current as of the time of the grant; provided by the grantee organization; not verified by RWJF.)

Craig Berger

Director of Education and Professional Development
Society for Environmental Graphic Design
Washington, D.C.

Kate Keating

President
Kate Keating Associates, Inc.
San Francisco, Calif.

Jack Biesek

President
Biesek Design
San Luis Obispo, Calif.

Wayne McCutcheon

Partner
Entro Communications
Toronto, Ontario, Canada

Ben Goodman

President
Society for Environmental Graphic Design
Board of Directors
Karlsberger Companies
Columbus, Ohio

Steve Stamper

President
fd2s inc.
Austin, Texas

APPENDIX 3

Findings on Phase 1: Testing the Symbols

Project staff assessed the effectiveness of the 28 symbols through surveys, focus groups and other testing and reported that:

- **Seventeen symbols could be understood by at least 87 percent of the testing population groups.** The remainder could be understood by at least 70 percent of the test groups.
- **During testing, participants walked one foot per second faster to find their destination when guided by symbols than when guided by multilingual word signs.**
- **In a survey of 86 people, one felt that word signs were superior to symbol signs; 19 felt symbol and word signs were equally effective; and 66 found symbol signs were more effective.**
- **In a survey of 85 people, 70 felt that symbols increased their ease of finding a destination.**
- **Forty-one of 49 hospital staff participating in focus groups felt that symbols would facilitate providing hospital directions.**

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Universal Symbols in Health Care: Innovator Facilities Post Audit Report, Hablamos Juntos and Society for Environmental Graphic Design, 2010. Available [online](#).

Education or Toolkits

Toolkits, Toolboxes or Primers

Universal Symbols in Health Care Workbook: Executive Summary Best Practices for Sign Systems. Hablamos Juntos and Society for Environmental Graphic Design, December 2005. Available [online](#).

For a CD containing all document reports and a tutorial on wayfinding in health care based on previous SEGD educational programs, contact SEGD at (202) 638-5555 or segd@segd.org.