Universal Symbols in Health Care

Developing a Symbols-Based Wayfinding System: Implementation Guidebook

Produced by

Hablamos Juntos

SEGD

With support from

pioneer

Robert Wood Johnson Foundation

PROJECT SUPPORT

PROJECT SUPPORT

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Hablamos Juntos means "We speak together." *Hablamos Juntos: Improving Patient-Provider Communication for Latinos,* a national program of the Robert Wood Johnson Foundation, develops practical solutions to language barriers in health care. Hablamos Juntos: Signs That Work is an ongoing partnership with SEGD aimed at promoting widespread adoption of graphic symbols in health care facilities serving diverse public users, with special interest in low literacy and limited English proficiency (LEP) populations.

About the Robert Wood Johnson Foundation and the Pioneer Portfolio
The Robert Wood Johnson Foundation focuses on the pressing health and health care issues facing our country. As the nation's largest philanthropy devoted exclusively to improving the health and health care of all Americans, the Foundation works with a diverse group of organizations and individuals to identify solutions and achieve comprehensive, meaningful and timely change. Projects in the Pioneer Portfolio are future-oriented and look beyond conventional thinking to explore solutions at the cutting edge of health and health care. When it comes to helping Americans lead healthier lives and get the care they need, the Foundation expects to make a difference in your lifetime.

SEGD is the global community of people working at the intersection of communication design and the built environment. Through university-level educational curricula, professional development workshops, publications, and research initiatives, SEGD's mission is to provide educational resources to designers, fabricators, and users of visual communications in the built environment.

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Executive Summary

Visitors entering through the doors of a hospital or other health care facility—especially those experiencing stress over the illness of a loved one—often experience a daunting environment. Long corridors, multiple elevator banks, connections among various buildings, and the complex routes often required to reach their final destination can add to the stress.

Magnifying this problem is the increasing demands on the health care system by individuals with limited English proficiency (LEP) or those with low reading proficiency. Today, one of the most important issues facing health care administrators is providing services to LEP populations. Helping them navigate complex health care facilities is a key objective.

In 2004, with funding from the Robert Wood Johnson Foundation, Hablamos Juntos formed an ongoing partnership with SEGD (the Society for Environmental Graphic Design) to develop and test the use of graphic symbols in health care facility signage. Phase I of the Universal Symbols in Health Care (USHC) research, completed in 2006, concluded that symbols can be effective in helping visitors navigate health care facilities. Testing showed that patients found signage incorporating graphic symbols easier to understand than purely text-based signage. As a result of the Phase I research, a set of 28 Universal Symbols in Health Care was designed for use in health care wayfinding systems.

After the release of the original USHC set, it became clear that the selection, design, and integration of symbols into one unified set—a set that could be adopted universally by health care facilities of varying size, function, and complexity—would be an ongoing process. Health care facilities that adopted the initial symbol set helped identify several key issues related to integrating symbols into the health care environment, including how to:

- Add and integrate new symbols into an existing set of health care symbols
- Most effectively name destinations in association with symbol use

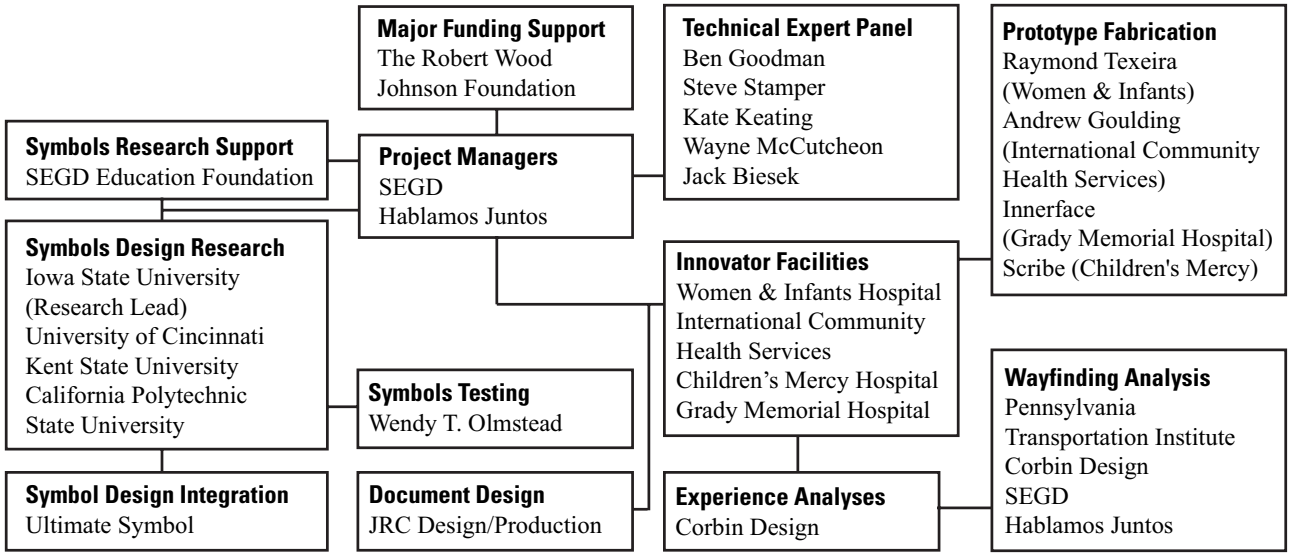
- Develop and use symbols that can support multiple destinations
- Develop symbols that can serve a diversity of functions including emphasizing health or illness

These questions became the focus for a second phase of research, begun in 2008. With continued funding from the Robert Wood Johnson Foundation's Pioneer Portfolio, in addition to support from the SEGD Education Foundation, Phase II research was designed to encourage widespread adoption of the symbols by health care facilities serving LEP or limited-reading populations. The project had three primary objectives:

1. Support implementation of symbols-based wayfinding systems using evidenced-based practices in as many as four health care facilities.
2. Document the implementation experience, produce tested best practices for health care facilities, and promote awareness of symbols-based wayfinding as a solution for multilingual environments.
3. Add 20 to 30 new symbols to the Universal Symbols in Health Care symbol set.

Project Team

Phase II involved a multidisciplinary team of designers, students, researchers, and other technical experts. A consortium of four university-based design schools developed a process for researching new symbols to be added to the USHC set. Four Innovator Health Care Facilities served as test cases for symbol design and implementation, and fully underwrote the costs of participation and implementation of the systems. Design firms with expertise in health care wayfinding and symbol design identified best practices and conducted experience analysis as the basis for developing wayfinding systems specific to each Innovator facility. Other internationally recognized consultants contributed their expertise in symbols testing, symbol development, and legibility.
A Technical Expert Panel reviewed the research and wayfinding analyses for accuracy and appropriateness to the specific needs of the Innovator facilities.



Universal Symbols Project Team Organization Chart

Symbols Design and Testing

In 2008, a university consortium was formed to develop a process for adding new symbols to the USHC set, essentially providing a sustainable framework for ongoing symbol design and evaluation.

Research and initial design took place in 2009 and 2010 at the University of Cincinnati, Iowa State University, Kent State University, and California Polytechnic State University. The process began with an in-depth review of the Innovator Facilities, destination hierarchies, and referent needs as the basis for symbol design.

Based on research methods employed in the development of the original symbols set, the university teams created a total of 155 candidate symbols for 22 referents. These were narrowed to five candidate symbols per referent category by a Delphi (expert) panel using a web-based survey. The narrowed list of candidate symbols underwent comprehensibility testing at three sites, using modified ISO testing methodologies on a linguistically diverse group of health care facility users. As a result of the comprehensibility testing, 22 symbols were chosen as additions to the original USHC set.

Symbol designer Mies Hora (Ultimate Symbol) was engaged to design the final set of symbols. Hora also refined the original set for consistency. The result is a comprehensive, 50-symbol set that adheres to internationally recognized symbol design standards. While the symbols library will always remain a work in progress, the goal is to develop a set of symbols that will achieve acceptance among designers and facility managers. The entire, updated ***Universal Symbols in Health Care*** set is presented in this guidebook and can also be downloaded from the ***Hablamos Juntos*** or ***SEGD*** websites.

Universal Symbols in Health Care, expanded symbol set

The university consortium's research and design work is documented in two reports: ***Signs That Work Phase 2: Symbol Design Curriculum Report*** and ***Signs That Work Phase 2: Symbol Design Research Report.***

Experience Analysis

One of the key factors in developing a successful wayfinding system is analysis of the visitor wayfinding experience. Experience analysis, including interviews with visitors and facility staff, creates a complete picture of the facility's wayfinding needs and helps determine the effectiveness of symbols.

ALTERNATIVE MEDICINE

The university consortium initially designed 155 candidate symbols for 22 referent categories. These were narrowed to 5 candidates per referent by a Delphi panel that evaluated the symbols via a web-based survey. These symbols were designed by a class led by Oscar Fernández of the University of Cincinnati.

Experience analyses for the Phase II research were led by Corbin Design, a wayfinding and environmental graphic design firm based in Traverse City, Michigan. The Innovator Health Care Facilities contributed expertise including staff time, design contributions, and research support. The analyses consisted of two parts:

1. Pre-design Analysis - Pre-design analysis documented visitor and staff perceptions of the existing wayfinding experience through in-depth interviews and established a baseline for comparison. From this analysis, wayfinding strategy recommendations were developed for each of the facilities.

2. Post-design Prototype Analysis - Post-design analysis tested visitors' experiences using a prototype version of the final wayfinding program. Recommendations from these results were incorporated into the final design processes for each of the Innovator facilities.

The wayfinding program for the Concentra Urgent Care clinic (designed by Little) was based on the Universal Symbols in Health Care set developed in Phase I.

Extensive experience analysis and planning completed for the project, as well as the symbols-based issues that emerged, informed the Phase II research.

Wayfinding Recommendations and Analysis

Based on wayfinding goals identified during the experience analyses, specific design recommendations were provided to guide design development for the wayfinding programs.

After each of the facilities developed their design concepts, Philip Garvey of the Pennsylvania Transportation Institute analyzed the following practices:

- The size of a comprehensible symbol set
- Permissible terminology approaches for destination names linked to the symbols
- Recommendations for symbol size and position on wayfinding and identification signs
- Recommendations for the use of multiple languages in coordination with symbol signs
- The use of directories, print, web, and educational support for symbols

Wayfinding analysis was incorporated into specific recommendations that the facilities used to develop their final sign designs. ***Hablamos Juntos Phase II Post Audit Report*** outlines the final implemented programs.

Final Review

Final research and recommendations were reviewed by the project's Technical Expert Panel to ensure they met recognized standards and fulfilled the needs of the facilities. Panel review focused on three primary areas:

- Ensuring that the final set of symbols developed by the academic consortium and symbols designer met the research and quality standards outlined at the beginning or the project
- Reviewing the final design and strategy recommendations made by the project team to ensure they are consistent with conclusions drawn from the research
- Reviewing the Implementation Guidelines to ensure the project's educational goals are being met

Implementation Guidebook

Developing a Symbols-Based Wayfinding System: Implementation Guidebook was designed to use the lessons-learned at the four Innovator Health Care Facilities to help health care executives, facility managers, and designers understand the comprehensive process of developing successful wayfinding projects. In five parts, it summarizes recommendations from the Phase II

research and provides access to more in-depth information on the key issues involved with implementing symbols-based wayfinding systems:

Part 1: Formulating a Symbols-Based Wayfinding Strategy
Part 2: Destination Hierarchy and Referent Naming
Part 3: Design and Development Using Symbols
Part 4: Design Testing and Analysis
Part 5: Symbol Support and Education

Each part contains specific recommendations that can be applied to all health care facilities based on the Phase II research; provides case studies of Innovator site methods and experiences; and offers additional resources in the form of in-depth technical reports, additional case studies, and other tools. Four attachments included with this guidebook provide supplemental information that is imperative to the implementation of a symbols-based wayfinding system. Additional resources cited in this guidebook can be downloaded from the ***Hablamos Juntos*** or ***SEGD*** websites.

Continuing Dialogue

Examples and case studies enrich and deepen the understanding of symbols-based wayfinding design. If you have developed a symbols-based health care wayfinding program and are willing to share your experiences, contact craig@segd.org to add to the library of symbols-based systems.

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Universal Symbols in Health Care

Developing a Symbols-Based Wayfinding System: Implementation Guidebook

Part 1:

Formulating a Symbols-Based Wayfinding Strategy

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PART 1: Formulating a Symbols-Based Wayfinding Strategy

Wayfinding Strategy Development

The first stage of a successful wayfinding program is the development of a wayfinding strategy to guide it. The basis for the wayfinding strategy is the strategic plan, a blueprint that defines the needs of the facility, the goals of the wayfinding program, and the management resources required.

At the four Innovator Health Care Facilities, extensive visitor experience analysis and research were conducted as the basis for identifying final wayfinding strategies specific to the needs of the facilities. The ***Innovator Facility Matrix*** summarizes the strategies developed for the four sites, while the ***Hablamos Juntos Phase II Post Audit Report*** documents the in-depth analysis undertaken by a team of professional wayfinding design consultants.

Before embarking on a symbols-based wayfinding program, health care facilities should create a wayfinding strategic plan that includes the following elements:

- **Mission Statement and Program Goals** - Every facility has unique program goals and requirements based on the needs of its patient population. The wayfinding strategy must incorporate and respond to these needs. The mission statement should include a general facility description, wayfinding goals (including incorporation of symbols), wayfinding issues, and key project goals. Defining these goals early is imperative to keeping the design process on track with core objectives.
- **Facility Review** - Every facility develops a wayfinding program under unique circumstances. Often there is an existing wayfinding system that must be removed or incorporated into a larger program. Some facilities are new buildings, but many are additions or renovations integrated into a larger building or campus. A facility review inventories physical spaces as a basis for developing a design direction.

Symbols-Based Wayfinding Strategy

Before beginning the design process, create a strategic plan for including symbols in the wayfinding system.

If the facility is serving as a model for future wayfinding programs, include system expansion in the symbols strategy.

When working with consultants, outline a scope of services and roles for stakeholders, including the facility, the design firm, and other consultants.

- **Stakeholder Engagement** - Identifying stakeholder groups and engaging them in the process of developing a wayfinding strategy is crucial. The stakeholder plan outlines a clear approach to engaging people who represent diverse groups including staff, administration, volunteers, patients, families, health literacy organizations, and community members.

- **Preliminary Destination Criteria** - Identifying and prioritizing major destinations within the health care facility is an important early step in developing a system that meets the needs of patients and visitors. An early outline of these destinations makes it easier to chart a course for including symbols in the design process.

- **Strategy for Hiring or Working with a Designer** - Health care facilities often need to work with professional designers who have expertise in the unique wayfinding needs of health care environments and the use of symbols to enhance the visitor experience. Articulating a clear approach to working with designers may include reporting responsibilities, project management, and other issues that will help expedite implementation of the wayfinding project.

The Symbols-Based Wayfinding Program Design and ***Implementation***

Checklist (Attachment B) identifies the key health care facility needs and goals for symbols wayfinding integration.

Key Wayfinding Strategy Issues

The four Innovator Health Care Facilities developed distinct wayfinding and symbol strategies built around their population needs, resources, facility types, facility design, and ongoing development issues. Comparison and analysis of the four projects revealed some key differences in strategy direction depending on facility type, size, and complexity:

- New facilities and renovated facilities have much different signage needs. New facilities have greater flexibility in design and implementation, since

the entire system can be developed at once, while renovated facilities may require a phased strategy for system design and implementation.

- The stakeholder and management needs of small facilities are much different than large hospitals. When a management team is small, sign systems may need to be much simpler and easier to install and change.
- Complex facilities on multiple floors require a much different approach than simpler facilities. The more information is needed for wayfinding, the greater the complexity of the wayfinding system.

The Innovator site projects also revealed key issues that were similar in spite of the facilities' differences in size or complexity. Each of the four sites aimed wayfinding programs at:

- Minimizing the use of personnel to assist in wayfinding
- Integrating symbols as only one part of a comprehensive wayfinding approach
- Proactively managing the design and development of the system

The following two case studies illustrate the similar and unique issues facing health care institutions addressing wayfinding needs.

Case Studies: Wayfinding Strategy

International Community Health Services (ICHS)

A small, newly built community clinic in Seattle, ICHS is part of a two-clinic system that serves a population comprising more than 50 different language groups, with Chinese language speakers the most prevalent. The clinic focuses primarily on daily health services such as dental and pharmacy, as well as medical education.

Strategic Plan Summary

Mission

- Develop a simple, easy-to-install system that can be implemented by a small staff on a small budget.
- Design for replication in other facilities as they are added to the system.
- Provide a high level of visitor support for the large number of retail-level customers.

Facility Review

New facility with nearly all public services on one floor

Stakeholders

Small staff, with one planner and one facilities manager handling all sign planning issues

Preliminary Destination Criteria

Small number of important destinations including Dental, Pharmacy, Laboratory, and Family Practice

Designer Selection

Staff worked with a design consultant from concept development through guideline development; final planning was coordinated between designer and facility staff.

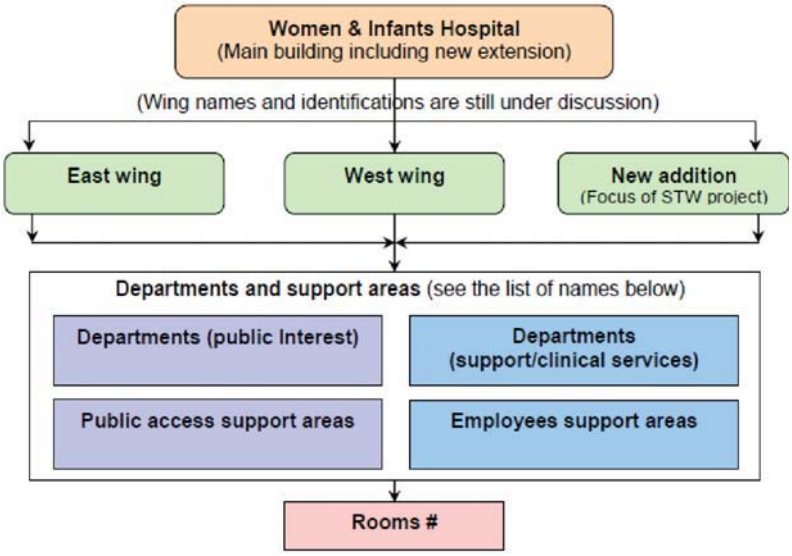
Women & Infants Hospital

This neonatal and pediatric care facility in Providence, R.I., is part of a large health care campus. The facility is undergoing an extensive renovation with a large new addition expanding facilities and public space.

Strategic Plan Summary

Mission

- Improve patient safety and satisfaction with the wayfinding system.
- Expand and improve on an existing symbols-based system and be a model for future expansion into the health system.



Facility Review

Older multi-floor facility linked to a new building by a large central public reception space

Stakeholders

Extensive team led by a wayfinding consultant working with the medical system, coordinating the work of marketing staff, the facilities department, and internal sign fabricators

Preliminary Destination Criteria

Three main wings, each with a set of key destinations and support destinations

PART 1: Additional Resources

Attachment A: Innovator Facility Matrix

This spreadsheet summarizes the Innovator facilities and the wayfinding strategies developed for each.

Attachment B: Symbols-Based Wayfinding Program Design and Implementation Checklist

This list identifies the key health care facility needs and goals for symbols wayfinding integration. It also includes sample RFPs and RFQs for symbols-based wayfinding projects.

Case Study: Concentra

The wayfinding program developed for Concentra was an early project integrating health care symbols into a larger wayfinding program.

Hablamos Juntos Phase II Post Audit Report

This report tracks the strategies developed by each of the Innovator Health Care Facilities as well as the outcomes of the strategies' implementation.

Universal Symbols in Health Care

Developing a Symbols-Based Wayfinding System: Implementation Guidebook

Part 2:

Destination Criteria and Referent Naming

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PART 2: Destination Hierarchy and Referent Naming

During the early planning stages in the wayfinding process, it is important to link the development of symbols to the referents (destination names) they will represent. Creating a hierarchy of destinations guides the development and application of symbols. While all health care facilities are different, they generally share similar destination hierarchy structures:

- Hospital or System Identification - The top of the hierarchy is the facility's brand identity, which can be a combination of words and symbols. It is often incorporated into every wayfinding and identification element in the facility.
- Building, Zone, or Section Identification - Health care facilities are often divided into building zones and sections that contain multiple destinations. Graphic systems describing these areas often include colors, numbers, letters, names, or unique symbols.
- Primary Destinations - Major destinations often relate to specific functions and services in a health care facility and are the best candidates for health care symbols.
- Support Destinations - These secondary destinations, such as restrooms and cafeterias, are common to many large facilities. Ideally, the symbol sets depicting support destinations are common among health care facilities.
- Room and Floor Addresses - Underlying all destination systems in a health care facility are room and floor addresses that can be designated using a combination of names, letters, and numbers.

Different types of health care facilities have different approaches to hierarchies. For example, in-patient facilities often must integrate room addresses into the overall destination hierarchy, while clinics may be built around a small set of destinations. Health care campuses and multi-floor facilities also have unique destinations, including separate buildings and zones that are incorporated into the hierarchy.

Destination Hierarchy and Referent Naming

Incorporate health care symbols into a destination hierarchy before starting the design of specific wayfinding elements.

Include destination hierarchy and nomenclature development in the designer scope of work.

When there are large numbers of symbol-based destinations, use department and unit names to divide the system into easy-to-differentiate parts.

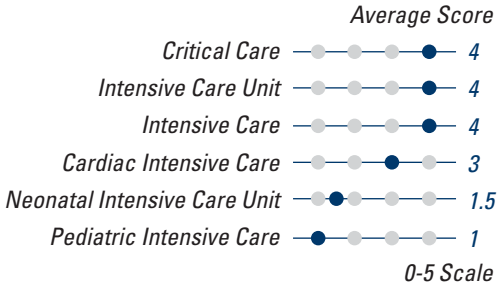
Review destination names to ensure they are comprehensible and fit with the organization's identity.

- **Number of Symbols** - Research at the four Innovator sites showed that hospital visitors have difficulty telling symbols apart when one set contains more than 16 unique symbols. Establishing a strong destination hierarchy keeps the number of symbols manageable by grouping them by building, zone, or floor.

- **Symbol/Destination Names** - Most health care facilities desire flexibility when developing destination names for their facility. There are often political and cultural reasons behind the naming of destinations, including linking names with the specialization of doctors or using names that reflect the role of the facility as a clinic or full-service hospital. Testing at the Innovator sites showed that multiple destination names can be associated with one symbol. Destination names were effective when they followed certain guidelines, including:

  ~ **A close visual link with the symbol** – For example, in testing the symbol for "Cardiology," users were able to match heart imagery with the terms "Cardiology Department," "Cardio-Pulmonary Services," "Heart & Disease Disorders," and "Cardiovascular Medicine."

In testing of the "Intensive Care" symbol, only terms linked to the function of the care unit were effective. Terms linked to a place did not work as well.



  ~ A link between function and location – Symbols generally refer to a health care function and can be linked to many types of locations as long as the function remains in the name. In testing, terms like "Unit," "Center," "Clinic," "Department," and "Services" worked well to indicate place as long as the function remained linked to the symbol. The opposite does not hold true. If the function and the symbol imageryare not visually linked, users will not make the connection easily.

- **Grouping Destinations** - Using multiple symbols for one destination is not encouraged, but using one umbrella symbol for multiple destination names can be successful.

- For example, the symbol for the function "Imaging" can serve as an umbrella for multiple imaging functions in one location, including radiology, mammography, and CAT Scan, even though there are individual symbols for these functions as well. Similarly, testing showed that symbols like "Billing Department" can be used effectively for all billing functions in a health care facility.

- **Combining health care symbols with other universal symbols** - Universal symbols used in transportation and for accessibility can also be part of a health care symbol set. When combining these symbols into one set, it is important to use color, shape, and style consistently unless there is a specific design strategy behind the differentiation.

At Grady Memorial Hospital in Atlanta, signs show a distinct hierarchy of destinations, including major buildings, zones, major destinations, support destinations, and room addresses. This allows no more than eight distinct symbols to be seen in any one zone.

The following case study illustrates how symbol color, shape, contrast, and size can be used to differentiate various functions or spaces in a health care facility.

Case Study: Destination Hierarchy and Referent Naming

Women & Infants Hospital

Symbols set developed for directory signs at Women & Infants Hospital.

Education Center

Neonatal Intensive Care Unit

Antenatal Care Unit

Cafeteria

Diagnostic Imaging

Medical Records

Family Liaison

Laboratory

Business Office

Emergency/ Triage

Women & Infants Hospital had experimented with symbols-based wayfinding before its facility renovation, and developed a plan linking health care symbols, building identity, and the room-numbering system.

Building Identification

The building is part of a large campus, so building identification was considered less necessary/prominent for the interior wayfinding system.

Building Zones and Floors

The facility's two main sections, Main Building and South Pavilion, are marked with major gateways and directory signs at the main entrance. These identities are not as important for interior wayfinding.

Primary Destinations

Eight destinations in the Main Building and three in the South Pavilion are identified by health care symbols.

Support Destinations

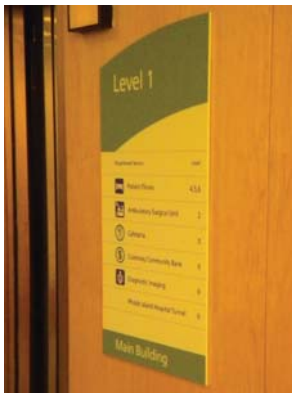
Five destinations (including cafeteria, bank, and restrooms) are identified by circular symbols different from the square health care symbols.

Room Addresses

Room numbers and addresses appear as a subset to the primary destination areas on directional and destination signs.

Destination Names

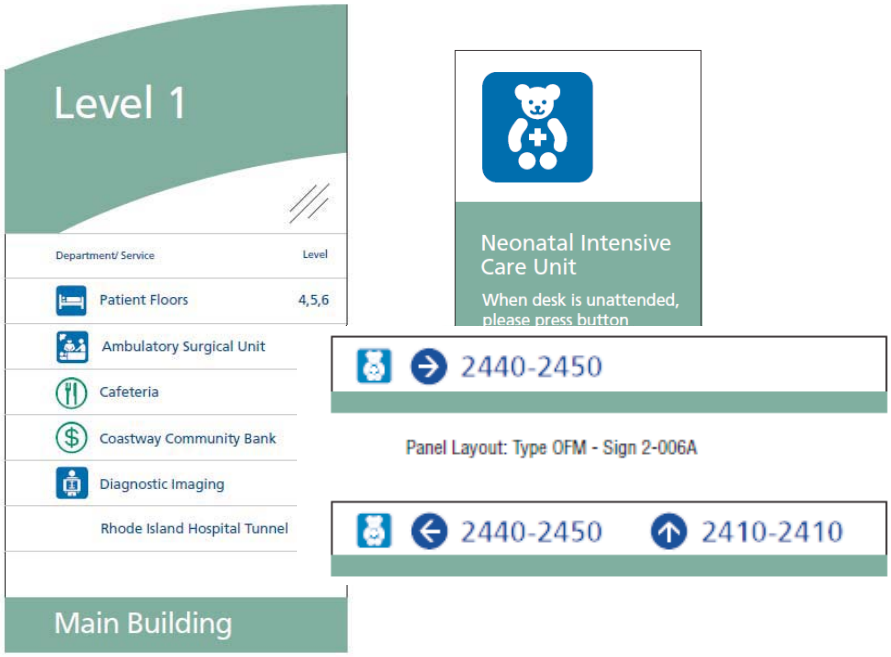
In most cases, the hospital used the destination names assigned with the USHC symbols set. The most significant exception is Pediatrics. Because the facility is devoted to women's health during delivery, the terminology was changed to focus on natal care. To ensure that this approach is well understood, the facility is adding explanatory handouts to its wayfinding program.



Symbols that represent separate levels in a destination hierarchy can be differentiated by color, shape, positive/negative contrast, or size.

At Women & Infants Hospital (left and top), symbols used for support destinations (i.e., restrooms, cafeteria) are a different shape than those used for medical departments.

At Children's Mercy Hospital (bottom), symbols for the emergency room hospital zones are different colors than the other symbols.



PART 2: Additional Resources

Attachment C: Universal Symbols in Health Care

At International Community Health Services in Seattle, symbols are used as an umbrella for several similar functions in the clinic. In this case, the "Dental Clinic" symbol is also used as an umbrella visual for "Dental Registration" and "Dentist's Office."

Universal Symbols in Health Care presents the entire set of 50 health care symbols produced as a result of the Hablamos Juntos Phase I and Phase II research. Individual, reproduction-ready artwork in PDF and EPS formats is also available for each symbol. These files can be downloaded from Hablamos Juntos or SEGD.

Signs That Work Phase 2: Symbol Design Curriculum Report and ***Signs That Work Phase 2: Symbol Design Research Report***

A consortium of four universities researched and completed initial design work for new symbols added to the Universal Health Care Symbols set. Their work is documented in these two reports.

Testing Universal Symbols to Support Implementation in Health Care Facilities Signage

This report contains research from the symbol/destination matching tests.

Universal Symbols in Health Care

Developing a Symbols-Based Wayfinding System: Implementation Guidebook

Part 3:

Design and Development Using Symbols

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PART 3: Design and Development Using Symbols

The success of symbol-oriented wayfinding systems lies in their ability to be seen and easily understood. While this may seem simple and obvious, health care facilities are often constrained in their ability to provide effective and legible signs. Dark spaces, tight and cluttered corridors, and high traffic make incorporating symbols a challenge. Developing effective symbols-based sign systems requires balancing legibility issues with the constraints of the facility.

At the same time, designers must also communicate design best practices so they can be implemented effectively by the facility when changes and additions are made. Health care facilities and designers should consider several key design issues specific to symbols in health care environments:

- **Symbol Size, Contrast, and Consistency** - The most significant factor affecting the use of symbols in health care facilities is size. When symbols are small in comparison to text, they are either ignored or treated as secondary information. Symbols also need to contrast strongly with their surrounding environment to be seen in the subdued lighting common to health care facilities. They should also be consistent in size. Research shows that visitors have difficulty recognizing the same symbols when they are used in too many different sizes within a wayfinding system.

- **Symbol Location and Consistency** - Consistency is not only a key factor in the size of symbols, but also in their location. Research also indicated that people expect similar signs to be located around similar-appearing decision points in the same facility. If a wall-mounted directory is seen at one corner, the observer will expect the symbol to be in a similar location at the next decision point.

Design and Development Using Symbols

Develop a design vocabulary linking all sign elements to the wayfinding strategy.

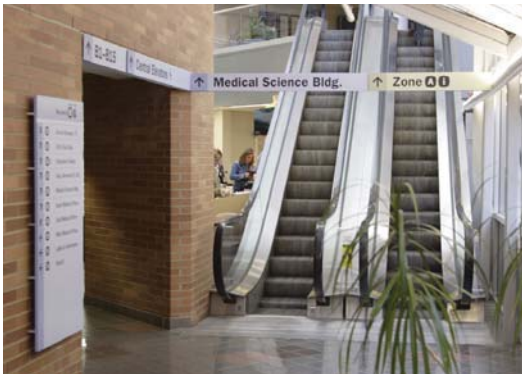
Develop guidelines for the placement of signs based on the wayfinding strategy.

Ensure that symbols are large enough to be legible on all signs.

Utilize only a few different symbol sizes.

Place symbols in consistent locations on signs.

Place signs in consistent locations within the facility.



The wayfinding program at Lankenau Hospital in Wynnewood, Pennsylvania (developed by ex;it), uses large-scale, high-contrast symbols at key decision points. Bright lighting significantly enhances sign and symbol legibility.

- **Legible Identification Signs** - Identification signs are often where wayfinding systems are less effective, with symbols that are too small and out of the line of site. Successful wayfinding programs use large symbols and often contain multiple signs, both parallel and perpendicular to the viewers' line of site. This is a practice that has been reinforced in accessibility guidelines. The ADA requires all symbols to be in a 6-in. field.

- **Sign Vocabulary and Guidelines** - During the design stage it is very important for designers to communicate how the entire wayfinding system works while presenting the design of individual sign elements. Two documentation approaches are crucial to successfully communicating sign system design:

The wayfinding program for Buenos Aires City Hospital (designed by Diseño Shakespear) is famous for its use of large symbols for wayfinding. Identification symbols are as large as 36-in. square.

~ A sign vocabulary document with a visualization and written description of every sign being utilized in the system to show the interrelationship between individual sign elements.

~ Guidelines that provide requirements and recommendations for the most legible sign locations.

Sign vocabulary and guidelines for the four Innovator Facilities can be found in the ***Innovator Sign Design Vocabulary*** documents.

Case Study: Sign Vocabulary and Guidelines

Children's Mercy Hospital

The wayfinding program for Children's Mercy Hospital in Kansas City, Missouri, optimizes symbol legibility in the face of two difficult issues. The extensive number of departments and zones require large numbers of building unit icons, health care symbols, and support symbols. In addition, low ceiling heights and subdued artificial lighting made the use of large overhead signs difficult. In response, the wayfinding program incorporated the following strategies:

Small number of sign types

The hospital employs only three major sign types: a large, wall-mounted sign that can serve as both a directory and wayfinding sign, large directional signs at major decision points, and identification signs.

Zone identification to structure information

The use of color-coded zones is crucial to supporting the large number of symbols used in the facility.

The sign vocabulary developed for Children's Mercy Hospital shows how symbols are deployed across a range of sign types. (Note: placeholders are used for incomplete symbols.)

Large symbols

All wall-mounted signs use larger (at least 2-in.) symbols than those typically seen on standard wall-mounted directory signs and identification signs.

Only three sizes for symbols

Only three sizes are used for symbols: 3-in. symbols for wall-mounted signs, 6-in. symbols on identification on support signs, and 12-in. symbols for identification on primary destination signs.

At Children's Mercy Hospital, clear guidelines for locating signs at key decision points made the sign system more legible and reduced clutter.

Multiple consistent directory signs at every major decision point

Directory signs were placed at multiple corners of every major decision point in the facility, perpendicular to visitor line of site in all directions. Directory wayfinding signs were configured similarly, with health care symbols, support symbols, and unit symbols in the same locations on the signs.

PART 3: Additional Resources

Attachment A: Innovator Facility Matrix

This spreadsheet summarizes the Innovator Facilities and the wayfinding strategies developed for each.

Innovator Sign Design Vocabulary

These design documents show the sign vocabulary and placement guidelines for the four Innovator Facilities.

Case Study: Lankenau Hospital

This project by ex;it and AGS utilizes many of the design strategies included in the Phase II research.

Innovator Site Picture Gallery

This picture gallery shows all the Innovator Facility Sites with and without prototype signs.

Universal Symbols in Health Care

Developing a Symbols-Based Wayfinding System: Implementation Guidebook

Part 4:

Design, Testing and Analysis

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PART 4: Design Testing and Analysis

Testing and analysis play a crucial role in the development of a wayfinding system. Testing allows facilities to define and prioritize the most important design issues and also provides a venue for ideas and scenarios to be analyzed under real-world conditions. All health care facilities should develop a testing and analysis strategy as part of their overall planning and design process. This process should include, but not be limited to:

- **Pre-Design Interviews** - Pre-design interviews with visitors and staff can clearly define the key priorities in developing and managing an effective wayfinding experience. Early interviews can more clearly focus design issues including:
  - ~ Facility needs
  - ~ Key destinations
  - ~ Staff support for system changes
- **Pre–design Wayfinding and Experience Analysis** - Based on the priorities of the institution, identified in pre-design interviews and other research, each step of the wayfinding experience should be analyzed, including:
  - ~ Key decision points throughout the facility
  - ~ Effectiveness of existing signs and landmarks
  - ~ Support materials including maps and graphics
- **Symbols and Destination Terminology** - While recommended destination names are included with the USHC symbols, many facilities will want to develop their own destination names. When selecting destination names to be associated with symbols, a simple ranking test can identify how well visitors will match symbols and destination names.

Design Testing and Analysis

Pre-design analysis should include clearly documented metrics for success that can be referred to throughout the design process and measured in Post-design analysis.

Incorporate funding for wayfinding and prototype analysis into the scope of work for planners and designers including prototypes developed during the design stage and a prototype wayfinding path developed prior to final implementation.

When testing destination names, review best practices of similar health care facilities.

Pre-design surveys of health care users provide metrics needed as the basis for research goals.

A ranking test consists of two parts:

~ Selecting names that most closely match the function of the destination

~ Asking visitors to rate how closely the symbol is associated with the destination name on a scale of 0 to 5

This research can also be used to test destination names for comprehension.

By adding and removing information from prototype signs, then testing the signs with users, health care facilities can gain insight into how much information visitors need when finding a destination.

- **Additional Symbol Design** - If the health care facility requires a symbol that is not included in the USHC set, other options include:

  ~ Adopting symbols from guides such as *Official Signs & Icons 2* by Ultimate Symbol

  ~ Designing additional symbols using guidance found in the ***Signs That Work Phase 2: Symbol Design Research Report***

  ~ Partnering with a design firm or academic institution to develop additional symbols based on research methods developed in the ***Signs That Work Phase 2: Symbol Design Research Report***

- **Prototype Wayfinding Test -** In this test, a wayfinding path is established using prototype signs (generally built out of a temporary material like foam core or vinyl) at key decision points in the facility. Test subjects are asked to find a destination using the prototype signs and are asked specific questions at each stage in the wayfinding process, including:

  ~ Are the signs well placed and easy to find?

  ~ Are the signs easy to understand?

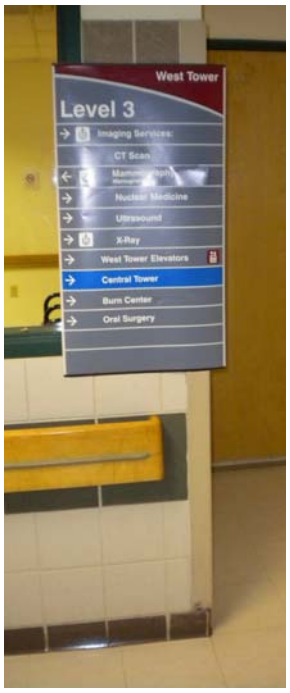
  ~ Are the symbols on the signs easy to identify?

  ~ Did the signs help you find your way?

  ~ Did you use the symbols?

- **Prototype Wayfinding Test for Support Information** - Prototype testing can also be used to gauge the effectiveness of providing additional wayfinding support, including multiple languages, handouts, maps, and staff intervention. In this type of testing, subjects are asked to find a destination using successive layers of information, including:
  - ~ Signs with just symbols
  - ~ Signs with symbols and English language
  - ~ Signs with symbols, English, and a third language
  - ~ Signs with the addition of a graphic support
  - ~ Signs with the addition of a map
  - ~ Signs with the assistance of facility staff

By asking the same set of questions about the effectiveness of the signs with different layers of support, this process paints a clearer picture of visitor needs and the effectiveness of system elements in isolation. This approach was developed for testing with symbols, but the methodology can be applied to any project, by adding or subtracting elements crucial to wayfinding decision-making.



Prototype signs are generally made of temporary materials such as plastic or foam core, but should otherwise have the exact appearance of permanent signs.

Case Study: Design Testing and Analysis

Grady Memorial Hospital

Although all four Innovator sites benefited greatly from the testing process, testing at Grady Memorial Hospital in Atlanta was particularly productive in yielding data that shaped the wayfinding design process. This facility was tested twice: once to test the effectiveness of symbols generally, and a second time to test the effectiveness of the specific wayfinding program under development.

First-stage wayfinding test

The first-stage test focused on the effectiveness of symbols linked to multiple languages and print support. Testing showed that providing hospital visitors with a printed handout of the wayfinding symbol system was highly effective in helping them find destinations, while a generic campus map proved far less effective at supporting the sign system.

Pre-design interviews

Before the hospital's full wayfinding program was developed, a series of interviews with hospital staff and visitors helped identify the best planning approach for integrating symbols into the wayfinding program as well as other ways to improve the visitor experience through wayfinding. These interviews contributed to the development of a wayfinding program based on identifying four distinct sections of the facility. Additional staff interviews increased the hospital's understanding that a modular sign approach managed by an outside firm would be the most successful approach for ongoing implementation.

Pre-design wayfinding experience analysis

After the pre-design interviews, the expected wayfinding experience was analyzed based on interviews with staff and visitors. The pre-design interviews identified areas of difficulty at key decision points, including

the main entrance and elevator banks. This analysis formed the basis for the wayfinding system.

Prototype wayfinding test

In the second-stage test, a temporary prototype sign system was created and installed, including a lobby directory and map, wall- and ceiling-mounted directional signs, elevator directory signs, and identification signs. Thirty-two users participated in the test, including 15 native English speakers, 10 native Spanish speakers, and seven native Cambodian speakers. They were asked to find three destinations using all the signs in the system, including signs that included just the symbol, the symbol with English, and the symbol with English and Spanish.

Design recommendations

Several design recommendations resulted from the testing at Grady Memorial:

- The need for a much larger, more visible directory with larger symbols and handout support
- The importance of having only a few size changes in the symbols as well as incorporating larger symbols for identification and directory signs
- The importance of placing signs in consistent locations throughout the facility at key landmarks
- The need to better explain the color-coded facility sections and make these divisions easier to see in the interior design of the facility

PART 4: Additional Resources

Symbol Usage In Health Care Settings for People with Limited English Proficiency - Part Two: Implementation Recommendations

This project conducted in 2005 tested the effectiveness of symbols at Grady Memorial Hospital in coordination with signs, handouts, and maps.

Signs That Work Phase 2: Symbols Design Research Report

Developed by the university consortium that researched the USHC symbol set expansion, this report outlines best practices for the development and research of health care symbols.

Hablamos Juntos Phase II Pre- and Post-Audit Reports

These reports document the pre-design interview and analysis process as well as the final recommendations developed for the wayfinding systems.

Testing Universal Symbols to Support Implementation in Health Care Facilities Signage

This report reviews the methods used in analyzing all four Innovator Health Care Facilities.

Universal Symbols in Health Care

Developing a Symbols-Based Wayfinding System: Implementation Guidebook

Part 5:

Symbol Support and Education

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PART 5: Symbol Support and Education

Health care wayfinding systems are most effective when they provide users with additional support to aid them in navigating the facility. Successful health care wayfinding systems supplement sign-based wayfinding with other resources, including printed handouts, websites, maps, directories, and staff assistance.

Different health care facilities have widely divergent resources and support needs, and these unique circumstances will determine the support and education required. Implementation of wayfinding programs at the four Innovator sites revealed several key factors that affect the level of support needed:

- **The design of the facility's information architecture –** Some Innovator sites, such as Grady Memorial Hospital and Women & Infants Hospital, have large visitor information kiosks near the main entrance, allowing for more human and print support than clinic environments such as ICHS, which have no information desk.
- **The level of human assistance in the facility –** Busy hospitals like Grady Memorial have much in common with transportation facilities, which have fewer staff to help with directions and require systems of kiosks and directories to attract attention and provide support.
- **The complexity of the hospital –** Facilities with a simple layout, such as ICHS or Women & Infants Hospital, found that a printed handout is more effective than a map in orienting visitors in the facility.

Research at the sites also revealed several key strategies for providing symbol support:

- **Directory Size, Location, and Contrast** - In the case of every Innovator Facility, testing showed that wall directories were too small, often the size of handout graphics. Directories can only be effective when they are easy-to-spot landmarks with symbols and text that can be easily seen in the environment.

Symbol Support and Education

Outline a support and educational strategy based on the facility's resources and visitor needs.

Large, well located, and easy-to-identify directories are important to users trying to comprehend the entire wayfinding system.

Simple-to-update directories, kiosks, print handouts, and web-based content are the best places to define symbols using multiple languages.

To be most effective, maps should contain only a few layers of information and should be closely linked to the destination hierarchy.

Staff should be trained to use the wayfinding system and support materials, and to assist visitors in using them.

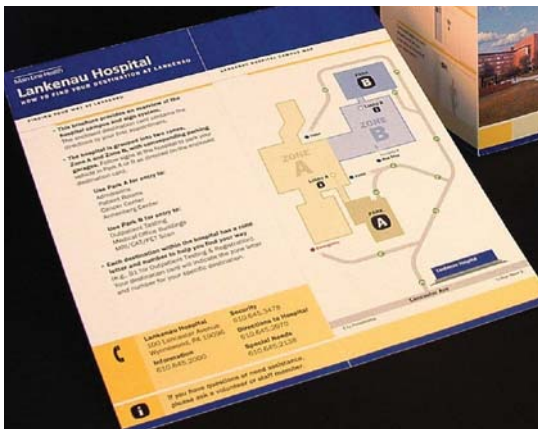
At Women & Infants Hospital, directories were placed just beyond the large information desk at the entrance of the facility, and blended with the interior palette to such a degree that visitors found them difficult to spot. Symbol support is most effective when the directory is the first element the visitor sees on arrival at the facility and is a contrasting visual landmark in the environment.

- **Handouts** - When symbols are explained to visitors early, they are more likely to understand their use on signs. Printed handouts have proven to be especially effective as an educational tool for introducing symbols. They are easier to correct when updates or revisions are needed.

At the MD Anderson Cancer Center in Houston (right), unique symbols and universal symbols are reinforced on the hospital website, in printed handouts, and via kiosks and maps. This support allows the sign system to be simpler and less obtrusive.

Large facilities like Grady Memorial Hospital (right) provide a range of resources to support wayfinding signage. These include interpreter support, directories, maps, and printed handouts.

- **Maps** - Traditional printed maps are not effective in familiarizing visitors with symbols, because they are often very complex and include symbols and text that are small and difficult to read. To effectively support a wayfinding system, maps should contain only information linked to finding specific destinations, and should use symbols, colors, and other elements linked to the sign system and other print support materials.



Rather than providing one overly complex map, Lankenau Hospital created multiple simplified maps that include only a few symbol references.

- **Interactive and Web-based Technologies** - Health care symbols are increasingly being incorporated into websites, interactive kiosks, and cell-phone applications. ***Attachment D, Interactive and Web Best Practices***, provides an overview of these technologies.

- **Human Assistance** - Health care staff should receive training on the symbols being used in their facilities, including training on how to use support materials and how to help visitors use them. Training on providing verbal directions is also important. Staff should be also be trained to avoid "Show don't tell" assistance, which wastes time and discourages visitors' ability to learn on their own. Innovator site testing showed that visitors who relied completely on staff assistance did not understand how to use signs for wayfinding, even in their own language.

Case Study: Symbol Support and Education

International Community Health Services and Grady Memorial Hospital

ICHS (above) used a small directory in its lobby to orient visitors around key destinations. After the prototype testing, the directory was made larger.

Both of these facilities relied on directories and print support for opposite reasons. ICHS, a small clinic with no information desk, needed a small directory to explain the services found in the facility. Grady Memorial Hospital, a complex facility with multiple entrances, sections, and floors, needed a large directory containing maps, symbols, and destination names in multiple languages.

User testing in both facilities found the directories at the main entrances of the facilities were well placed, but needed to be much larger, easy-to-spot landmarks with clearly highlighted symbols. Testing also showed that printed handouts in multiple languages should be used to explain the symbols used on the directories. Grady Memorial Hospital in particular, with four color-coded zones, needed a series of graphic and map elements to reinforce the destination hierarchy.

Grady Memorial Hospital (right) utilizes large table directories at key entry points.

PART 5: Additional Resources

Attachment D: Interactive and Web Best Practices

This report provides an overview of best practices for new health care wayfinding technologies including interactive kiosks, mobile web, and map programs.

Phase I Hablamos Juntos Research Report

This report analyzes the issues linking print graphics and maps to symbols-based wayfinding signs.

Case Study: MD Anderson Cancer Center

This presentation provides an overview of the facility's wayfinding program and the non-signage elements developed to support it.

Sample Symbols Handouts

These handouts in multiple languages can be used as templates for health care facilities developing their own support materials.

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ATTACHMENTS

Attachment A:

Innovator Facility Matrix

Attachment B:

Symbols-Based Wayfinding Program

Design and Implementation Checklist

Attachment C:

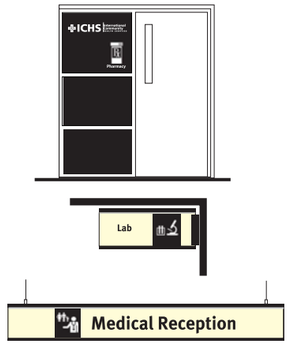
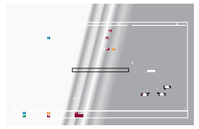
Universal Symbols in Health Care

Attachment D:

Interactive and Web Best Practices

Innovator Facility Matrix

Universal Symbols in Health Care

Facility:	Woman & Infants Hospital	International Community Health Services (ICHS)	Children's Mercy Hospital	Grady Memorial Hospital
Design Component Parts:	Directory  Pavilion Identity  Wayfinding  Identification  	Wall Directory/ Wayfinding  Wayfinding  Identification  	Wall Directory/Wayfinding  Wayfinding  Identification   	Directory  Elevator Wayfinding  Elevator Directory Elevator Landing Wayfinding  Primary Destination Wayfinding  Identification 
Prototype Review and Recommendations:	• A successful wayfinding program based on simple concepts, limited palette and a focus on legibility. • Increase directory size and improve location • Augment directories with print handouts, Web support, or maps at the help desk • Maintain the strategy of a limited number of symbols at a large scale.	• Limited understanding of how to use symbols by the population requires extensive education effort from staff as well as explanatory print materials. • Directory needs to be much larger with definitions in multiple languages. • Immersive identification sign approach was very successful. • Standard module size worked well in the simple clinic environment.	• Consistent large symbol sizes were very effective. • A larger orientation directory or handouts needed at the major entrance points of each zone. • Limit of eight slots on directional signs could prove difficult with the number of symbols in the system.	• Directory map too hard to spot and symbols too small. • Too many symbol size variations. • Too many legacy system in place that confuse the visitor. • Staff training and support materials are needed to make the system effective.

Attachment A:
Innovator Facility Matrix

Universal Symbols in Health Care

Facility:	Woman & Infants Hospital	International Community Health Services (ICHS)	Children's Mercy Hospital	Grady Memorial Hospital
Facility Description:	A facility for neonatal and pediatric care, Woman and Infants Hospital is a building that is part of a large healthcare campus. The facility is undergoing an extensive renovation with a large new addition expanding facilities and public space.	With two clinics serving over 16,000 patients yearly, ICHS services include medical, dental, behavioral health, Chinese medicine, and pharmacy. The vast majority of patients are LEP, with the most common languages being Cantonese and Vietnamese.	This large medical campus, anchoring a system that includes 21 clinics, offers diverse pediatric services including in-patient care, outpatient care, diagnostic testing, and research. 7-10% of all patients are Spanish-speaking, with other LEP populations are diverse and on the rise.	One of the ten largest hospitals in the country, most of this facility is located in one 22-story, 1.8-million-square-foot building. Twelve percent of all visitors are LEP. Over 90% of these are Spanish-speaking. Because Grady has been operating for nearly 100 years, there are many legacy wayfinding systems.
Stakeholders:	An extensive team led by a wayfinding consultant working with the medical system coordinating the work of marketing staff, the facilities department and internal sign fabricators.	A tiny staff with one planner and one facilities manager handles all sign planning issues.	A team led by Facilities with the Department of Pediatrics and the ER. They will provide input and review all signage for the project.	A leadership team led by a 3-person facilities manager group in partnership with an interpreter department reporting to a senior executive group.
Mission Statement:	To improve patient safety and satisfaction with the wayfinding system. The wayfinding system is meant to expand and improve on an existing symbol-based system installed a year earlier and be a model for future expansion into the health system.	To develop a simple, easy to install system that could be implemented by a small staff on a small budget. The sign system would be replicated in other facilities as they were added to the system. The system would also need to provide a great deal of visitor support for the large number of retail level customers.	Improve wayfinding for all patients (especially the non-English speaking patients) at Children's Mercy Hospital starting in the new ER Project. The key elements involved in the project will be interior signs, architectural landmarks, building identification elements and printed maps.	To ensure efficient signage is available to allow people from different cultural and linguistic backgrounds to locate their desired destinations with the fewest number of decision points,and; • To create coherent, consistent and easily maintained signage system-wide that can be expanded to the rest of health system facilities throughout our service area.
Destination Hierarchy:	• Building identification • Three main wings of the facility • Primary healthcare destinations • Secondary destinations • Room numbers	• Building identification • Primary healthcare destinations	• Building identification • Zones • Primary healthcare destinations and support destinations • Room numbers	• Building identification • Four main building sections • Elevator cores • Primary destinations • Support destinations and room numbers
Designer Strategy:	An owner's representative working with a designer who is also updating guidelines for other facilities in the health system.	Facilities planner working with a sign consultant, managing a set of simple sign guidelines.	Selection of a firm with a contract for ongoing design services at the hospital including wayfinding, public art and branded interiors. Use of internal sign shop to make signs.	A modular design, fabrication and installation firm was hired to implement and adapt existing sign guidelines around health care symbols.

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Innovator Facility Matrix

Universal Symbols in Health Care

Facility:	Woman & Infants Hospital	International Community Health Services (ICHS)	Children's Mercy Hospital	Grady Memorial Hospital
Pre-Design Recommendations:	• Increase size and improve locations of existing symbol based sign system. • Improve color contrast of sign system. • Increase prominence of identity for new wings of the facility. • Large signs near main help desk, initial point of contact.	• The system must be very simple and easy to design and install. • Each space is unique and needs a branded identity. • There is no help desk so a large opening directory sign is important. • Signs must have very little information to cut through the clutter of information signs in the facility.	• Since the main entry is through the parking garage wayfinding must be oriented throughout the facility and not from the front entrance. • Since a large number of symbols are being used, the use of existing zone hierarchies is important in the system • Is important to reinforce destination names with large symbols at the beginning of each zone.	• Make the system easily visible at key entrance points to minimize staff assistance. • Ensure consistency in the zone based system, linking it to the elevator banks, maps and destinations • Increase the size and visibility of signs • Develop a system that can be easily maintained by the facilities staff and the outside modular sign firm.
Symbol Strategy:	Build health care and support symbols around the three main sections of the hospital. System built around the central help desk.	Small palette of symbols used multiple times to define and identify the sections of the clinic.	Large palette of symbols for each hospital zone. All symbols treated equally and consistently on signs.	Color coded system built around four zones and elevator cores with symbols being used primarily on directory signs at the entrance, elevators and floors.
Design Concept:	Large directory/wayfinding signs oriented around the three main section identities and followed up with symbol oriented directional and identification signs in each section.	One standard size wall mounted sign module used of all interior wayfinding elements. Multiple identification sign types integrated into the interior spaces.	One main directory/ wayfinding and one ceiling wayfinding sign used at all major decision points and serving all destinations equally. Multiple identification signs used at destinations.	Entrance maps directories oriented to the four zones directing to elevators. Symbol oriented directional signs at the elevators and on each floor landing.

Attachment B:
Symbols-Based Wayfinding Program Design and Implementation Check List

Universal Symbols in Health Care

Before working with an environmental graphic design firm or wayfinding consultant on a symbols-based wayfinding program, it is important to have some basic information about the health care facility and goals for symbols integration. This information can be incorporated into the design RFP and RFQ and act as a guide for ongoing design development.

The Mission Statement

The mission statement is the road map that the health care facility needs to develop a wayfinding program, the crucial stage where a symbols strategy is integrated into program goals. The mission statement includes the following information:

- Description of the facility
- Wayfinding goals including incorporation of symbols
- Wayfinding issues
- Key project stakeholders

Destination Criteria

Destination criteria include how destinations are selected and named by the health care facility and their importance in the facility. Symbols are integrated into the wayfinding program through the selection of destinations. Destination criteria should include the following elements:

- Health care campus identity and key building names
- Key departments in the facility
- Support health care destinations (e.g., billing, medical records)
- General support functions (e.g., parking, cafeteria)
- Room addresses

Schematic Design Stage

This is the stage where the overall design strategy is articulated by the designer and communicated to the health care facility. Often the schematic design stage is developed as a separate design program, providing a roadmap for ongoing implementation of the program. Symbols are incorporated into the wayfinding strategy and specific design elements at this stage. The schematic design stage includes the following elements:

- Overall wayfinding strategy including integration of symbols
- Destination criteria
- Wayfinding experience diagram including stages in the wayfinding experience with specific design elements at each decision point
- Design vocabulary of design elements
- Typography, color, and symbol palette
- Plan for implementation including preliminary cost analysis

Design Implementation Stage

The final design and approaches for implementing the program include:

- Strategy for placement of sign elements
- Schedule that determines placement of information on signs
- Final fabricator design drawings for bid process
- Final list and hierarchy of destinations
- Plan for fabrication and installation

Guidelines

Health care wayfinding programs are ongoing programs and need a clear set of instructions for facilities staff to follow to ensure the program can be changed and maintained. Guidelines include:

- Review of the design strategy of the institution including incorporation of symbols
- Strategy for incorporation of new destinations into the existing destination criteria
- As-built drawings of final wayfinding elements with instructions for fabrication and implementation
- Support graphics including all symbols, colors, font standards, and print graphics
- Instructions for ongoing management and maintenance of the program

The RFP and RFQ are documents that health care facilities use to find a design firm for a design project. Designers can be employed either as a direct hire or as part of a bidding process, but no matter which method is used it is important for the facility to create a proposal structure with a specific set of goals or deliverables.

What is Needed for an RFP?

To create an RFP, it is important that the client has a full understanding of the basic tasks the designer will be expected to accomplish.

The RFP is meant to provide a specific proposal for the design team including:

- A summary of the entire project scope
- Preliminary design strategy and goals
- Specific scope of services including all major deliverables at each stage of the project
- Outline of what must be provided in the proposal
- Proposal submission guidelines and standards
- Project time-line
- Fee proposal

What is Needed for an RFQ?

A RFQ is an approach that allows for greater flexibility and the ability to negotiate if the facility is unsure of the scope of the project. The facility can incorporate discussions on the final proposal into the interview process, allowing for greater interaction with the designer. The RFQ process also allows more designers to submit initial bids, since the barriers to submission are lower. The RFQ includes:

- Summary of the entire project scope
- Preliminary design strategy and goals
- General scope of tasks
- Outline of what must be provided in the proposal
- Proposal submission guidelines and standards
- Request for the firm's philosophy
- Standards for the interview process
- Project time-line

Project Pricing

If the health care facility already has a specific dollar value attached to the wayfinding program design process, it is wise to have an RFQ process and ask the designers in the interview stage to provide more details on the specific design services that can be provided for that fee. This also allows for more flexible negotiations with the selected design firm. If the facility is unclear about how much money will be available or the elements needed, it is a good idea to provide a two-part RFP. An initial fixed-fee master plan phase will result in a series of options for the development of a wayfinding program and pricing associated with each option.

Fee Proposal

A fee proposal establishes the payment options as part of the design process. There are a number of approaches that can be taken in defining fee approaches. The most common are:

Rates based on an hourly estimate: Designers can provide a listing of their hourly rate for each stage in the design process along with an estimate of hours for each stage of the process. In this case the facility can negotiate the final project budget with the selected designer.

Fixed price:
The facility can define a fixed price as part of the RFP and ask designers to fit their design process around the fixed price. This is easier to accomplish as part of a master plan or schematic design process than a full design and implementation program unless the facility is very clear of the scope of work and the number and type of design elements that are to be included.

One Stage or Two?

If the scope of work is unclear in the RFP, a two-stage RFP process with a fixed fee for the master plan and schematic design and a more tentative proposal for the design development and implementation work should be done. The facility can also split the RFP into two distinct projects, allowing for a clear early budget to be developed and a later budget to be created based on the master plan and schematic design. This allows the facility to more freely develop a program and get a full understanding of design and implementation costs. It is unethical to require the designer to develop schematic design documents without a fee in the proposal process.

The Interview

In the RFP process most facilities select the top two to three design firms for final interviews. Since the proposal and pricing has already been provided the interview can focus on specific details of the proposals along with the qualifications of the firm.

In the RFQ process the interview of top firms is more extensive with discussion about issues related to the project scope. With RFQs, transparency of the interview process is crucial to success. A teleconference call with the selected firms can provide the clarity needed for firms to submit proposals closely aligned with the goals of the institutions, while also discussing issues in an open dialogue.

Sample Request for Proposal (RFP)

The following is a Sample Request for Proposals (RFP). All RFP's should include: The Facility Name, Contents, Project Description, Scope of Services, Uniform Proposal Outline, Proposal Submission, Project Schedule, Fee Schedule and Project Mission Statement.

Overall Project Description
[name of the facility] is a multi-building campus at the edge of a downtown area. The hospital serves mainly patients from the city and has extensive emergency and clinical services to support the population. [name of the facility] is expanding with a new pavilion to support clinical and research services that reach the overall region and the nation.

The Facility
[name of the facility] is undergoing a new 300,000 square foot expansion to its main 900,000 square foot building. The entire facility will also be renovated and a new wayfinding system incorporated into the main building. The expansion will be a separate pavilion sharing the same main lobby space.

Wayfinding Strategy
[name of the facility] wants to develop a wayfinding system that will reach both its current multi-lingual population and also project an updated image for an expanding regional and national customer base. The Hospital is seeking:

- A consistent wayfinding system for the entire campus
- A system that is built around the central information hub of the main building
- A system that will be easy to update and change based on expansion
- A system that will incorporate universal symbols for healthcare

The Proposed Wayfinding System
[name of the facility] proposes a new wayfinding system for both the expanded facility and the existing main building. The system will include the following attributes:

- An outdoor wayfinding program for all roads inside the hospital campus
- New building identity signs
- A new interior wayfinding system including wayfinding and identification signs for both the new campus and existing building
- Print and map support
- Potential digital support through the web or on-site kiosk based on the needs of the system.

Scope of Services
[name of the facility] is seeking interior and exterior wayfinding consulting services for the building expansion. Your proposal should include, but not necessarily be limited to, the following Scopes of Work:

- Master Plan and Schematic Design Phase
- Develop a wayfinding master plan including
- Expanded wayfinding strategy including non-sign elements like digital wayfinding, public art, landmarks, and donor recognition, if pertinent to the success of the project.
- Recommendations for incorporating universal symbols
- Recommendations for updating of existing sign program
- Preliminary destination criteria
- Stakeholder plan for ongoing approvals and implementation
- Vehicular site circulation and pedestrian site circulation

Prepare schematic design concepts for wayfinding graphics that are to include the following elements:

- Directional signs for both the exterior and interior
- Building identifiers
- Main hospital identification signs
- Additional wayfinding elements including landmarks and public art if included in the recommendations
- Kiosks and other digital sign elements if included in the recommendations
- Prepare a budget for wayfinding graphics based on the approved schematic design concept.
- Prepare a set of recommendations for web and print graphics

Design Development and Documentation
Prepare design development documentation necessary for the wayfinding elements to convey scope and intent. Emphasis should be placed on the coordination of the signage design with the interior design consultant, as well as coordination with the architectural design.

- Prepare documentation that meets state and local ADA guidelines in the building code as well as the fire code.
- Final destination criteria and list of destinations.
- Update the budget for wayfinding elements based on the design development Documents.
- Develop a technology and print graphic review
- Prepare construction intent documents for the wayfinding elements based on the approved design development documents. These construction intent documents must be at the level where they can be publicly bid.
- Maintain the confirmed design development budget throughout construction intent phase.

Approvals and Implementation

- Presentations of the design concepts to the [name of the facility] staff will be required during schematic design, design development, and construction intent phases of the project.
- Provide compliance with all applicable municipal, state and national regulatory agency ordinances, codes and requirements.
- Provide assistance to gain any special permits or approvals that may be required, including but not limited to building permits and certificates of occupancy.
- Issue the signage and graphics construction documents for subcontractor bidding and provide bidding, negotiation, and construction administration services.
- Provide services necessary for the proper procurement and installation of the design elements by the contractor and its suppliers.
- Provide services necessary to assure complete coordination of this scope of work with Architect and other consultants as required. Attend project design and coordination meetings with the design teams as necessary to implement this activity. Update documents with any background or sheet changes, including signage type and location changes from architectural edits, during the various stages of design.

Design Guidelines
Prepare final design guidelines including as-built documentation and material specifications. Design guidelines should also include:

- Templates for print graphics
- Templates for all symbols
- Final as-built design drawings
- Sample bid documentation
- Wayfinding strategy and summary of all design elements
- Recommendations for ongoing expansion

Proposal Outline for Submission
Prepare a proposal that is responsive to the Scope of Work in this RFP and that includes the following minimum information per the sections described below. Organize the required information in a logical manner that facilitates the owner's ability to evaluate your response.

Project Team

- Identify design firm philosophy.
- Identify the key individuals in the firm who will be assigned to the project. Include a proposed organization chart and clearly define the role of all key individuals.
- Provide resumes for key individuals. Resumes should specifically address relevant project experience and provide sufficient information to allow the owner to clearly assess the individual's qualifications and experience. Furthermore, the percentage of time the key individual will be dedicated to each project shall be stated as well as the name and scope of other projects this individual will be supporting.
- Indicate any additional resources that may be available to assist the key individuals in the fulfillment of this project. Provide a brief description of resource's qualifications and experience.
- Identify any outside sub consultants that you plan to engage in order to provide the scope of work requested. Provide resumes for key sub consultant staff.

Similar Project Experience

- Identify three (3) recent hospital projects similar in size and complexity to the proposed projects in which your firm has provided design and planning services. The selected projects should demonstrate market driven solutions, customer oriented care and measured value added. The following information is required on each project: (Limit: One [1] page per project)

- Owner name
- Project description (identify major elements and/or unique features and service provided)
- Project size (SF/# of Beds)
- Key personnel from your firm involved in the project.
- Client/Architect/contractor reference (name, position, address, and telephone number).

Suits and Claims
Describe all instances of project disputes that, in the last five years, reached the level of (1) formal mediation, arbitration, or litigation; or (2) significant settlements with clients, contractors, or sub-contractors. Also describe any known claims or suits that may be pending.

Fee Proposal
Fee proposals must reflect the specific scope of work in the master plan and schematic design phase. A tentative fee proposal can be established for design development, implementation, and guidelines phases. Recommendations for additional design elements including the web, electronic elements, and public art elements can be negotiated separately.

- Fee proposals shall reflect the executing of the Consultant Agreement attached.
- Fee proposals shall be a stipulated lump sum fee for the master plan and schematic design phases and an estimated fee for the design development, implementation, and guidelines phases.
- Fee proposals shall clearly indicate what if any expenses are reimbursable and provide a budget estimate for expected reimbursable expenses.
- Reimbursement for expenses will not exceed this budget estimate without Owner's prior written authorization.
- Fee proposal shall clearly state the Consultant's proposed terms of engagement for the project. Any proposed terms shall comply with the insurance requirements described elsewhere in the RFP.

Proposal Submission

General Information
The evaluation of proposals will be conducted in the following manner:

- All proposals received will be reviewed in detail and evaluated based upon the information provided.
- The Owner will make the final selection.
- [name of the facility] reserves the right to reject any or all proposals and to waive any formality or informality in proposals received.
- All materials submitted shall become the property of [name of the facility] and will not be returned. The owner agrees to treat these materials as confidential and only to be used for the purposes of selecting a medical communications planner for this project.
- It is understood and agreed by the submitting firms that submittals, interviews, etc., are voluntary and [name of the facility] and/or its employees, agents, etc., are not responsible for any compensation and/or other commitments associated with submittals or interviews.

Submittal Information
Calendar of Events
Release of RFP: Date
Proposal deadline: Date and Time
Follow up interviews may be required. Details will be provided if follow up interviews are requested.
Final selection: Date
Beginning of project negotiations: Date

Sample Request for Qualifications (RFQ)

The following is a Sample Request for Qualifications (RFQ). All RFQ's should include: The Facility Name, Contents, Project Description, Scope of Services, Uniform Proposal Outline, Proposal Submission, Project Schedule, Fee Schedule and Project Mission Statement.

[name of the facility], RFQ Contents; Project Description; Preliminary Scope of Work; Uniform Proposal Outline; Proposal Submission; Project Schedule; Project Mission Statement.

Description
[name of the facility] is a multi-building campus at the edge of a downtown area. The hospital serves mainly patients from the city and has extensive emergency and clinical services to support the population. [name of the facility] is expanding with a new pavilion to support clinical and research services that reach the overall region and the nation.

The Facility
[name of the facility] is undergoing a new 300,000 square foot expansion to its main 900,000 square foot building. The entire facility will also be renovated and a new wayfinding system incorporated into the main building. The expansion will be a separate pavilion sharing the same main lobby space.

Wayfinding Strategy
[name of the facility] wants to develop a wayfinding system that will reach both its current multi-lingual population and also project an updated image for an expanding regional and national customer base. The Hospital is seeking:

- A consistent wayfinding system for the entire campus
- A system that is built around the central information hub of the main building
- A system that will be easy to update and change based on expansion
- A system that will incorporate universal symbols for health care

The Proposed Wayfinding System
[name of the facility] proposes a new wayfinding system for both the expanded facility and the existing main building. The system will include:

- An outdoor wayfinding program for all roads inside the hospital campus
- New building identity signs
- A new interior wayfinding system including wayfinding and identification signs for both the new campus and existing building
- Print and map support
- Potential digital support through the web or on-site kiosk based on the needs of the system

Preliminary Scope of Services
[name of the facility] is seeking interior and exterior wayfinding design services for the building expansion. The responsibilities of the design firm include:

Master Plan and Schematic Design Phase
In this phase the design firm is expected to develop a sign master plan and schematic design consisting of, but not limited to the following components:

- Overall wayfinding strategy including non-sign elements like digital wayfinding, public art, landmarks, and donor recognition, if pertinent to the success of the project.
- Recommendation for incorporating universal symbols
- Recommendations for updating of existing sign program
- Preliminary destination criteria
- Plan for ongoing approvals and implementation
- Vehicular site circulation and pedestrian site circulation
- Schematic design concepts for all the elements outlined in the master plan
- A budget for wayfinding graphics based on the approved schematic design concept
- A set of recommendations for web and print graphics

Design Development and Documentation

- Develop design documentation for all signs
- Final destination criteria and list of destinations
- Develop a technology and print graphic review as recommended in the master plan
- Prepare construction intent documents for the

wayfinding elements based on the approved design development documents

Approvals and Implementation
Approvals of the design concepts by the Hospital staff will be required during schematic design, design development, and construction intent phases of the project.

- Issue the construction intent documents for subcontractor bidding and provide bidding, negotiation and construction administration services.
- Provide services necessary for the proper procurement and installation of the design elements by the contractor and its suppliers.
- Collaborate with other designers including the architect and interior designers working on the hospital expansion.

Design Guidelines
Prepare final design guidelines including as-built documentation and material specifications.

Proposal Outline for Submission
Prepare a proposal that outlines your qualifications to meet the scope of work provided in this RFQ including the minimum information described below. Organize the required information in a logical manner that facilitates the owner's ability to evaluate your response.

Project Team

- Identify design firm philosophy.
- Identify the key individuals in the firm who will be assigned to the project. Include a proposed organization chart and clearly define the role of all key individuals.
- Provide resumes for key individuals proposed. Resumes should specifically address relevant project experience and provide sufficient information to allow the owner to clearly assess the individual's qualifications and experience.
- Indicate any additional resources that may be available to assist the key individuals in the fulfillment of this project. Provide a brief description of the resource's qualifications and experience.
- Identify any outside sub-consultants that you plan to engage in order to provide the scope of services requested. Provide resumes for key sub-consultant staff.

Similar Project Experience
Identify three (3) recent Hospital projects similar in size and complexity to the proposed projects in which your firm has provided design and planning services. (Limit: One [1] page per project)

Owner Name
Project description (identify major elements, and/or unique features and service provided)
Project size (SF/# of Beds)
Key personnel from your Firm involve in the project.
Client/Architect/contractor reference (name, position, address, and telephone number).

Firm Design Philosophy
A firm design philosophy statement including design approach, project priorities and metrics for project success. (Limit: [1] page)

Proposal Submission

General Information

- The evaluation of proposals will be conducted in the following manner:
- All proposals received will be reviewed in detail and evaluated based upon the information provided.
- The Owner will make the final selection.
- [name of the facility] reserves the right to reject any or all proposals and to waive any formality or informality in proposals received.
- All materials submitted shall become the property of [name of the facility] and will not be returned. The owner agrees to treat these materials as confidential and only to be used for the purposes of selecting a medical communications planner for this project.
- It is understood and agreed by the submitting firms that submittals, interviews, etc., are voluntary and [name of the facility] and/or its employees, agents, etc., are not responsible for any compensation and/or other commitments associated with submittals or interviews.

Short-list Teleconference
A teleconference of selected firms will be held on Day/Date. Preliminary questions by the firms will be submitted in writing on the day before the teleconference. Additional questions can be asked at the teleconference after the written questions are answered. A recording of the teleconference will be made available to attendees 24 hours after completion.

Interview Requirements
When attending the interview the short-listed firms will provide the following information for review:

- An in-depth proposal for the master plan and schematic design phases of the project including specific fees.
- A preliminary scope of work for the design development and implementation stages of the project based on the firm design philosophy and approach. If outside firms are recommended to be included in this stage, this can also be presented.

Interviews will be no more than one hour in length and be attended by no more than three firm principals.

Submittal Information
Calendar of Events
Release of RFP: Date
Proposal deadline: Date and Time
Teleconference with short-listed firms: Date
Firm interviews: Date
Final selection: Date
Beginning of project negotiations: Date

Universal Symbols in Health Care

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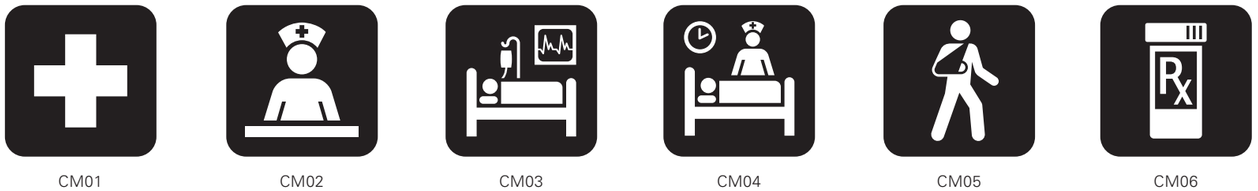
Clinical & Medical Services

Clinical & Medical Services

CM01 Health Services
CM02 Care Staff Area
CM03 Intensive Care
CM04 Inpatient
CM05 Outpatient
CM06 Pharmacy
CM07 Diabetes (Education)
CM08 Family Practice
CM09 Immunizations
CM10 Nutrition
CM11 Alternative / Complementary
CM12 Laboratory
CM13 Pathology
CM14 Oncology
CM15 Ophthalmology
CM16 Mental Health
CM17 Neurology
CM18 Dermatology
CM19 Ear, Nose & Throat
CM20 Respiratory
CM21 Internal Medicine
CM22 Kidney
CM23 Cardiology
CM24 Women's Health
CM25 Labor & Delivery
CM26 Pediatrics
CM27 Genetics
CM28 Infectious Diseases
CM29 Dental
CM30 Anesthesia
CM31 Surgery
CM32 Physical Therapy


CM01 CM02 CM03 CM04 CM05 CM06


CM07 CM08 CM09 CM10 CM11 CM12


CM13 CM14 CM15 CM16 CM17 CM18


CM19 CM20 CM21 CM22 CM23 CM24


CM25 CM26 CM27 CM28 CM29 CM30


CM31 CM32

Facilities & Administrative Services

Facilities & Administrative Services

FA01 Emergency
FA02 Ambulance
FA03 Registration
FA04 Waiting Area
FA05 Administration
FA06 Medical Records
FA07 Billing
FA08 Medical Library
FA09 Health Education
FA10 Interpreter Services
FA11 Social Services
FA12 Chapel

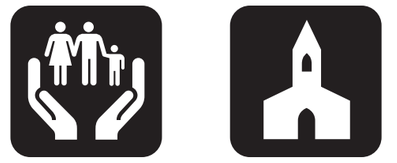
FA01 FA02


FA03 FA04


FA05 FA06


FA07 FA08

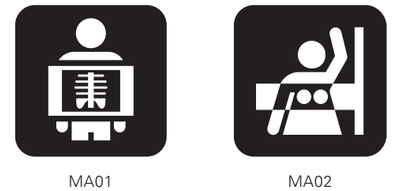

FA09 FA10

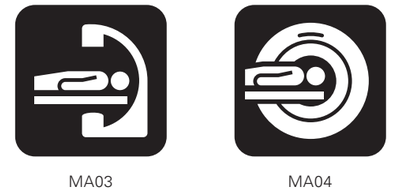

FA11 FA12

Imaging

Imaging

MA01 Radiology
MA02 Mammography
MA03 Cath Lab
MA04 MRI / PET
MA05 Ultrasound
MA06 Imaging (Root Category)
MA07-10 Imaging (Alternatives)


MA01 MA02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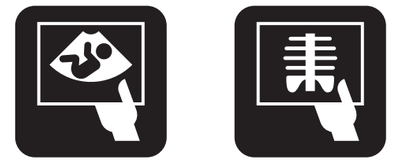
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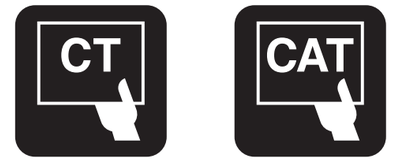
MA07 MA08



MA09 MA10

Attachment D:
Interactive and Web Best Practices

Universal Symbols in Health Care

Over the last five years there has been an explosion in technologies that support dynamic wayfinding and information retrieval in the environment. These technologies are in a constant state of flux so developing a set of best practices and recommendations for integrating symbols into computer and Web-based systems require an ability to see not only what technology exists now, but where they will be one year, five years or ten years from today.

Understanding the Trends

Information systems in health care is undergoing a number of changes that are important to understand when developing wayfinding and publication strategy involving symbols. These include:

Mobile Web and Augmented Reality

Portable media consisting mainly of software application driven hand held devices have made enormous leaps in the last five years to the point where many institutions are focusing on using them as the key tool to build wayfinding programs. With the addition of tags like RISD chips and GPS location technology, these devices can locate a specific location in the environment and provide information on that location. The next step in this process is a methodology called augmented reality, where fixed signs and objects in the real world are augmented with additional information from hand held devices.

WalkBrighton is a free software application developed by the Applied Application group for the iPhone that was design in coordination with the graphics and symbology of the fixed wayfinding system in the environment.

Web Driven Kiosk Technology

Until recently most kiosk based information systems utilized proprietary software to develop systems in multiple locations. This has changed significantly over the last few years as designers have focused on using web based information systems that can used on any computer system that uses the Web. At the same time specific Web standards have been in development for accessible type and language translation on the Web making these software systems more adaptable to changes like new screen technologies or improvements in Web-based software like Flash.

This kiosk developed for an office building in Minneapolis, Minnesota and developed by Larsen Design is typical of software applications used in building information systems. It is a web based program using flash to build the program and run it off a central server.

Multiple Device Oriented Information Networks

Tweeter as an early software that showed that information on the web can also be utilized on multiple devices including cell phones and public information audio systems. Apple and other software providers have been at the forefront of expanding these systems to many devices in the environment including land-line phones and audio/visual systems.

Impact on Integration of Health Care Symbols

These new technologies and trends greatly impact the symbols are integrated in wayfinding and sign programs. The two biggest changes include:

The software applications that links the iPad and iPhone are also being linked to kiosk, lighting and visual systems in the environment. The American Eagle Store in New York developed by the Barnycz Group uses an iPhone and iPad based application to update and change the content of the media wrapped building, putting the power of an entire control room inside a hand held device.

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Interactive and Web Best Practices

1. Symbols as part of a flexible information system instead of landmarks on maps and signs.

Instead of symbols being used as a freestanding element on signs and maps that delineate a location, they will also be integrated into directions, rolling maps and information systems. This will require symbol sizes to change in size, location and resolution often inside the same program.

2. Universal Symbols closely aligned with numbers colors and addresses.

it will be important, because symbols will become tags which various pieces of information will be attached.

Case Studies of New Wayfinding Technologies

Centrally oriented proprietary software based technology

MD Anderson Cancer Center

An integrated sign, Web site, kiosk and print map developed by Fd2s pioneers many of the design ideas associated with linking symbols to digital formats including kiosks that can deliver unique directional maps and Web-based directional maps and systems. A key innovation is tying together unique landmark based symbols with universal symbols in different formats that can be used for both narrative based and map based wayfinding on the same web and kiosk based system.

RFID Based Wayfinding Sign System

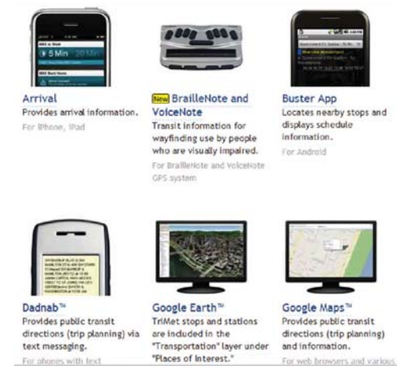
Identity Group Passive Dynamic Wayfinding System

The wayfinding system developed by the Identity Group has dynamic sign information that integrates with static signage. A visitor wearing an ID badge coded to a specific destination is provided the simple arrow-based directions as that person approaches the digital sign. During the intervals between the times that one visitor passes the digital sign and the next visitor approaches the digital sign, that sign automatically reverts to a "default" mode where it provides directions to common destinations such as admissions, cafeteria, and restrooms. Since directional information can be adapted to the specific user symbols can be larger and linked to multilingual information.

Mobile Web

TriMet Portland Oregon Mobile Web System

This transit system developed an open source code to deliver wayfinding as well as departure times for the system. Dozens of applications have been developed for this system which provides a palette of maps, symbols and type to use on multiple applications.



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