Disability Awareness Brief:

UNIVERSAL DESIGN[*][1]

June, 2015

Note: This is one in a series of six Disability Awareness Briefs: Introduction to Disability Awareness, Disability Competency for Providers, Disability Competency for Care Management Practitioners, Cultural Competency, Accessibility, and Universal Design. This Brief on Universal Design should be considered together with the other five documents in order to have the comprehensive, basic information needed to inclusively address the unique health care needs of individuals with disabilities.

WHAT IS UNIVERSAL DESIGN?

Universal Design is the concept of simplifying life for everyone by making products, communications, and the physical environment benefit as many individuals as possible. Universal design benefits individuals of all ages and abilities, and takes into account the full range of human diversity, including physical, perceptual and cognitive abilities, communication and language differences, as well as different body sizes and shapes. Everyone, even the most able-bodied individual, passes through childhood, periods of temporary illness, injury and old age. Designing for this natural human diversity makes things more functional and user-friendly for everyone.

Universal Design can apply to anything that can be designed, including products like door handles, kitchen utensils and smartphones; architecture and the built environment, including public and commercial buildings, as well as residential buildings and family homes; and the community at large through urban planning and public transportation. Universal Design for Learning (UDL) addresses the design of communication and educational information and services and the diversity of human differences in how we communicate and learn. Universal Design can also help older adults by designing products and spaces that are safer and easier for them to use. Universal Design is an

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ongoing design process that is always evolving and improving as we continue to learn more about how to best meet individuals' different needs rather than a final type of product, space or system.

Universal Design evolved from Accessible Design, as described in the Americans with Disabilities Act (ADA) accessibility requirements for buildings and facilities. There is a great deal of overlap between what is required under the ADA and what is suggested by Universal Design, but there are also differences. The ADA outlines the bare minimum necessary in order to limit discrimination against individuals with disabilities, while Universal Design strives to incorporate best practices for design. The ADA focuses on the civil rights of individuals with disabilities, while Universal Design benefits everyone.

WHY SHOULD CARE ORGANIZATIONS BE AWARE OF UNIVERSAL DESIGN?

Offices, parks, health care facilities, schools, or any other public spaces should be built to meet the needs of all of the individuals who will use the space. Going beyond the minimum requirements makes facilities more usable for all individuals, employees, clients, program participants and customers, not just those with disabilities. Universal Design for Learning also address inclusive practices in communication and services, resulting in programs and communication that are beneficial for people from diverse cultural and language backgrounds and with different learning styles and disabilities.

INDICATORS OF UNIVERSAL DESIGN

ORGANIZATIONAL CHARACTERISTICS:

The following presents the Seven Principles of Universal Design and their associated Guidelines which may be applied to evaluate existing designs, guide new design processes, and educate both designers and consumers about the characteristics of more usable products and environments:

1. **Equitable Use**: The design is useful and marketable to individuals with diverse abilities.

   Guidelines:
   - Provide the same means of use for all users: identical whenever possible; equivalent when not.
   - Avoid segregating or stigmatizing any users.

- Provisions for privacy, security, and safety should be equally available to all users.
- Make the design appealing to all users.

2. **Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.

   Guidelines:
   - Provide choice in methods of use.
   - Accommodate right- or left-handed access and use.
   - Facilitate the user's accuracy and precision.
   - Provide adaptability to the user's pace.

3. **Simple and Intuitive Use:** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

   Guidelines:
   - Eliminate unnecessary complexity.
   - Be consistent with user expectations and intuition.
   - Accommodate a wide range of literacy and language skills.
   - Arrange information consistent with its importance.
   - Provide effective prompting and feedback during and after task completion.

4. **Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

   Guidelines:
   - Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
   - Provide adequate contrast between essential information and its surroundings.
   - Maximize "legibility" of essential information.
   - Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
   - Provide compatibility with a variety of techniques or devices used by individuals with sensory limitations.

5. **Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:
- Arrange elements to minimize hazards and errors; make the most used elements most accessible; eliminate, isolate, or shield hazardous elements.
- Provide warnings of hazards and errors.
- Provide fail safe features.
- Discourage unconscious action in tasks that require vigilance.

6. **Low Physical Effort:** The design can be used efficiently and comfortably with minimum fatigue.

Guidelines:
- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

7. **Size and Space for Approach and Use:** Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:
- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for the use of assistive devices or personal assistance.

EXAMPLES OF UNIVERSAL DESIGN:

- Weather protection at entrance doors (e.g., overhead roofs and side protections from precipitation and wind).
- Power door operators at interior and exterior entrances that work well for everyone including children and older adults.
- Wide doors.
- Using lever door handles instead of round door knobs.
- Lighting and acoustics that optimize hearing and sight for diverse users.
- Quiet spaces available for conversations and for people who work best with less environmental noise or visual distractions.
- Standard decision making aids and resources designed to accommodate diverse learning styles and disability-related needs.

- Chairs for use by individuals who cannot stand while transacting business.
- Chairs that can be set at different heights for use by children, adults and older individuals, some equipped with arm rests for those who need assistance rising to their feet.
- Spacious toilet rooms, which provide space for wheelchair users but also accommodate parents with strollers and children.
- Scales that allow individuals with difficulty standing to hold on.
- Individuals alerted in a pharmacy or waiting room environment with a verbal announcement plus light-emitting diode (LED) signage, which benefits individuals who are distracted or attending to small children as well as individuals who are deaf, hard of hearing, or visually impaired.
- Motorized, adjustable-height treatment and examining tables and chairs, diagnostic equipment, and fitness equipment which work well for everyone including children, older adults, and individuals with mobility disabilities.
- Signs and service information designed for individuals with diverse communication and language requirements.
- More than one accessible toilet and dressing room, some with left-handed levers and some with right-handed levers.
- Building entrances without steps.
- Curb cuts at sidewalks, which can be used by individuals who use wheelchairs and by pedestrians with strollers or rolling luggage.
- Tactile marking as well as print and graphic signage on routes of travel.

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[1] The information in this Brief was obtained from the following sources:

- *Accessibility*. Centers for Disease Control and Prevention, Atlanta, GA; April 2, 2014. Accessed at: http://www.cdc.gov/ncbddd/disabilityandhealth/accessibility.html.
- *Removing Barriers to Health Care.* North Carolina Office on Disability and Health: Chapel Hill, NC; 2007. Available at: http://fpg.unc.edu/sites/fpg.unc.edu/files/resources/other-resources/NCODH_RemovingBarriersToHealthCare.pdf
- *The Current State of Health Care for Individuals with Disabilities.* National Council on Disabilities; 2009. Available at: http://www.ncd.gov/publications/2009/Sept302009#Professional.
- *The Principles of Universal Design.* The Center for Universal Design, North Carolina State University. Raleigh, NC; 1997. Available at: http://www.ncsu.edu/ncsu/design/cud/about_ud/udprinciplestext.htm
- *Universal Design for Learning.* Accessed at: http://www.udlcenter.org/
- *What is Universal Design?* Accessed at: http://www.universaldesign.com/about-universal-design.html.