

COMMUNITY HEALTH INCLUSION INDEX (CHII)



CHP



The University of Illinois at Chicago
Center on Health Promotion Research
for Persons with Disabilities



A Partnership between the Center on Health Promotion Research for Persons with Disabilities, University of Illinois at Chicago, and the National Center on Health, Physical Activity and Disability, University of Alabama at Birmingham & Lakeshore Foundation.

Introduction

Background:

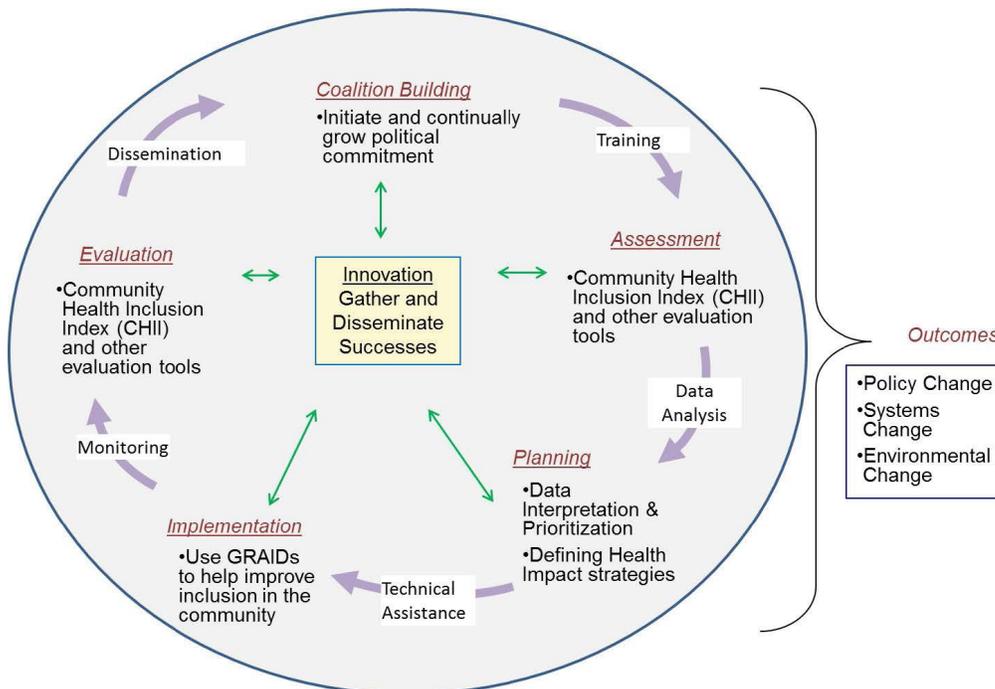
The Community Health Inclusion Index (CHII) is a set of survey tools used to help communities gather information on the extent to which there are health living resources that are inclusive of all members of the community, including persons with disabilities. Healthy living resources are defined as resources that aid in the promotion of Physical Activity and Healthy Eating, two key areas that the Centers for Disease Control and Prevention (CDC) has focused on in the national effort to combat obesity. The CDC, National Center on Birth Defects and Developmental Disabilities (NCBDDD) and the National Center on Health Physical Activity and Disability have highlighted the disparities that exist in the rates of obesity and physical inactivity among persons with and without disabilities. More can be read here:

1. <http://www.cdc.gov/vitalsigns/disabilities/>
2. <http://www.cdc.gov/ncbddd/disabilityandhealth/obesity.html>
3. <http://www.nchpad.org/>

Using the Community Health Inclusion Index (CHII)

The CHII (pronounced "CHEE") is a tool designed for being part of a larger Healthy Community building process that has been developed by the National Center on Health Physical Activity and Disability. The diagram below shows the overall process of building Inclusive Healthy Communities and the role of the CHII in assessment and evaluation.

Figure 1: Inclusive Healthy Community Building Process



More can be read about Building Inclusive Health Coalitions in the document titled, Community Health Inclusion Sustainability Planning Guide, which was developed by the National Center on Health Physical Activity and Disability, the Lakeshore Foundation and Easter Seals.

The purpose of the CHII manual is to provide instruction on implementing the CHII. The manual is organized into the following sections:

1. *Development of the CHII*
2. *Structure of the CHII*
3. *Implementation*
4. *Detailed Protocol Instructions*
5. *Glossary*

I. Development of the CHII

Below is an abstract from a paper published about the development of the CHII. The full paper can be accessed here: <http://www.biomedcentral.com/1471-2458/15/1050>

Abstract:

Background

Community health initiatives often do not provide enough supports for people with disabilities to fully participate in healthy, active living opportunities. The purpose of this study was to design an instrument that focused on integrating disability-related items into a multi-level survey tool that assessed healthy, active living initiatives.

Methods

The development and testing of the Community Health Inclusion Index (CHII) involved four components: (a) literature review of studies that examined barriers and facilitators to healthy, active living; (b) focus groups with persons with disabilities and professionals living in geographically diverse settings; (c) expert panel to establish a final set of critical items; and (d) field testing the CHII in 164 sites across 15 communities in 5 states to assess the instrument's reliability.

Results

Results from initial analysis of these data indicated that the CHII has good reliability. Depending on the subscale, Cronbach's alpha ranged from 0.700 to 0.965. The CHII's inter-rater agreement showed that 14 of the 15 venues for physical activity or healthy eating throughout a community had strong agreement (0.81 – 1.00), while one venue had substantial agreement (0.61 – 0.80).

Conclusion

The CHII is the first instrument to operationalize community health inclusion into a comprehensive assessment tool that can be used by public health professionals and community coalitions to examine the critical supports needed for improving healthy, active living among people with disabilities.

II. Structure of the CHII

The CHII was designed in a hierarchical structure (see figure 2 below). The CHII uses a commonly accepted framework for community assessments that covers 5 sectors of the community (level 1): Schools, Worksites, Healthcare sites, Community Organizations/Institutions and the Community at Large. Within each of those sectors there are actual facilities (e.g. an elementary school) with any number of venues (level 2) related to physical activity, healthy eating and community design. The CHII assesses these venues and sectors across 5 domains (level 3) – Built Environment, Equipment, Programs and Services, Staff and Policies. Within those domains are multiple constructs (level 4), which are made up of items (level 5) that measure a common theme. The Built Environment and Equipment domains are assessed using the On-site assessment. The Programs and Services, Staff and Policies domains are assessed using the Organizational assessment and the Macro Community-at-Large assessment.

Figure 2: CHII Structure

Level 1: Sectors	Community-at-large				
	School (elementary, middle, high schools)	Health Care (hospitals, clinics)	Work Sites (offices, large buildings, campuses)	Community Institutions/ Organization (recreation, senior center, grocery store)	
Level 2: Venues	Physical Activity (fitness/recreation room, pool, sports field, playground)				
	Healthy Eating (cafeteria/restaurant, food store, farmer's market, community garden)				
	Community Design (transportation, paths)				
Level 3: Inclusion Domains	Built Environment	Equipment	Programs/ Services	Staff	Policies
Level 4: Constructs (sample constructs)	<ul style="list-style-type: none"> walking/rolling crime Entryways 	<ul style="list-style-type: none"> exercise equipment nutrition class equipment playground equipment 	<ul style="list-style-type: none"> adaptive programming alternate materials school walking programs 	<ul style="list-style-type: none"> staff training 	<ul style="list-style-type: none"> healthy eating wellness coalitions Incentives
Level 5: Items (sample items within each domain)	<ul style="list-style-type: none"> Are paths to the site free of obstacles or hazards that are difficult to traverse? Are auditory crossing signals present at intersections near the site? 	<ul style="list-style-type: none"> Is adapted equipment available at the community garden? Is there elevated playground equipment with ramps or transfer equipment? 	<ul style="list-style-type: none"> Is the program designed so that people with disabilities and without disabilities participate equally? Have routes been assessed for accessibility in the school walking program? 	<ul style="list-style-type: none"> Are people with disabilities involved in providing training to staff? 	<ul style="list-style-type: none"> Does the wellness committee set goals that are geared towards people with disabilities? Is it standard practice to put nutrition goals in students' Individualized Education Programs (IEP)?
Assessments used in the field	On-site Assessment		Organizational Assessment & Macro Community-At-Large Assessment		

Below is a table that describes which constructs are evaluated as part of each assessment. Once the CHII is completed, it is possible to obtain a profile with a score for each construct.

Table 1: Constructs and Assessments on the CHII

Tool	Macro Community-At-Large Assessment	Organizational Assessment	On-site Assessment
Data collection method	Online research and interviews	Interview	On site assessment
Constructs	<ol style="list-style-type: none"> 1. Transportation Inclusion 2. Community Design 3. Community policies 4. Community Coalition Inclusion 	<ol style="list-style-type: none"> 1. Healthy Eating Policy 2. Nutrition HE programs 3. Affordability 4. Physical activity policy 5. Physical activity programs 6. Program materials 7. Staff 8. Wellness Coalition Accessibility 9. Transportation 10. School Walking program 11. School Physical Activity policy 12. School Healthy Eating policy 13. Health care 14. Worksite health 15. Organizational Readiness for Change 	<ol style="list-style-type: none"> 1. Traffic calming 2. Walking supports 3. Walking barriers 4. Intersections 5. Transit Accessibility 6. Parking Access 7. Paths 8. Entrance access 9. Health promotional materials 10. Reception 11. Restrooms 12. Indoor navigation 13. General food site accessibility 14. Menus 15. Affordability 16. Healthy food promotion 17. Grocery stores 18. Farmers Markets 19. Community Gardens 20. Locker Room 21. Locker room 22. PA venue Aisles 23. Equipment 24. Playgrounds 25. Pools 26. Trails

III. Implementation

Macro Community-at-Large Assessment

These questions are related to transportation services and policies, community design policies and programs and community wellness initiatives. These questions only need to be done once per community. Members of the coalition answers these questions by conducting online research as well as interviewing local transit agency representatives and community planners.

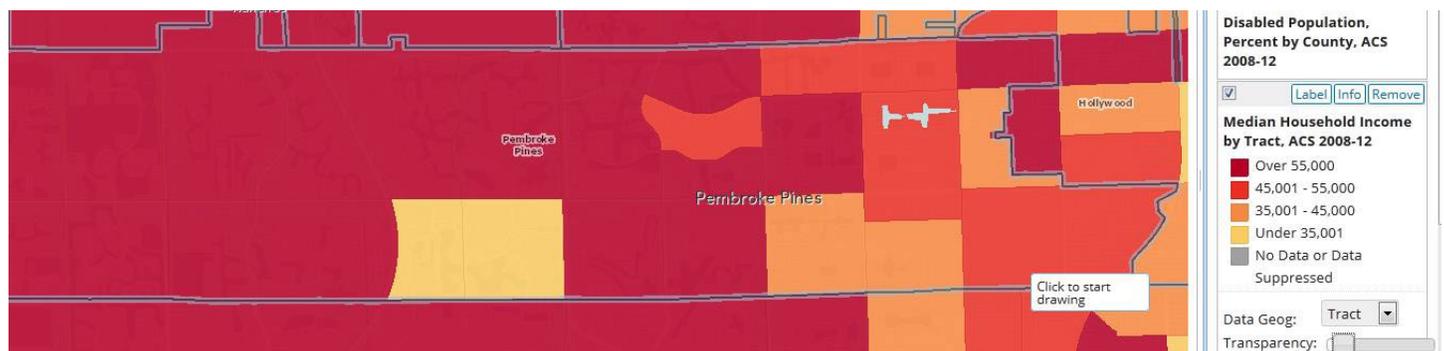
Additionally, community level area based socioeconomic measures can be gathered from the Communitycommons.org website. Community commons is an interactive mapping, networking, and learning utility for the broad-based healthy, sustainable, and livable communities' movement. It has a host of many different data sets for mapping U.S. communities. The purpose of developing these maps is not to score the community, but to help target specific areas of the community where there is the most need for community health improvements for persons with disabilities. The datasets include: disability rates, income, poverty, urban/rural, transit access, food access, physical activity access and many more. Data is available down to the census tract level, which can help to identify neighborhoods with higher % of people with disability within larger cities or counties.

It is recommended that you develop a map with **disability** rates and **income or poverty** rates at minimum, and then you can layer on important data that is most relevant for your community. The map below shows the type of data you can add to the interactive map on communitycommons.org. It is clear in this example that there are a handful of census tracts within this example city that have both higher than average rates of disability as well as lower than median household income levels.

Figure 3: Example of Percent Population with a Disability, ACS 2008-2012



Figure 3: Example of Median Household Income, ACS 2008-2012



Once you have used the Community Commons site to help target an area, it is helpful to start creating a sample of sites that could be potential community health inclusion resources. This is where it is useful to work with a coalition to build the list of potential sites. This list can then be used for recruitment of sites to take the Organizational Assessment or start the On-Site Assessment.

Organizational Assessment

The first step in learning about health resources in a community is by sending out the online survey called, The Organizational Assessment to as many sites as possible across all sectors of the community. If the initiative is focusing on a particular sector, the link can be sent to the sites you've identified in that sector. A document called Email Template for Sending Survey Link is included in the CHII toolkit and can be customized to send to various listservs and emails. The purpose of the Organizational Assessment is to, 1) discover what sites have physical activity and nutrition resources and 2) learn about the programs, policies and overall attitude toward inclusive health promotion at the site. The questions on the Organizational Assessment cover the following areas:

- **Staff Training** - the extent to which staff are educated in working with persons with disabilities.
- **Inclusion** – to what extent the site is inclusive of persons with disabilities in being physically active at a site and eating healthy foods.
- **Healthy Eating** –how well a site promotes healthy eating through its policies and programs.
- **Physical Activity** – how well a site promotes physical activity through its policies and programs.
- **Readiness for Change** – the extent to which the organization sees inclusion as a goal and is committed to improving the organization's capacity for inclusive health promotion.

Once you get responses in from the online survey, you can use the scoring sheet and see how sites scored across the constructs and domains. You will use these to decide on how to proceed and which sites would be good candidates for conducting the On-Site Assessment.

The factors to consider are whether a site has existing facilities or programming for physical activity and healthy eating. This is relevant as some worksites, community institutions/organizations or healthcare sites may not have any physical activity or food venues or programs and there will be nothing to assess in person. The second criterion to examine is Readiness of Change. Working with organizations that have above 50% on the readiness for change sub-scale, will ensure that you are working with organizations that are committed to building inclusive healthy communities. Other organizations will be important to work with in the long run as well.

Some sites may be difficult to contact by phone or email, such as grocery stores or farmers' markets. In these cases, it is advised that raters go directly to the locations and conduct the organizational assessment as an interview instead of an online survey. As long as permission is granted from the owner/manager, the on-site assessment can be done as well at that time.

On-Site Assessment

The purpose of these questions is to assess the navigability to the observation site as well as the usability of facilities within the site for persons with disabilities. Raters will implement the survey at multiple sites representing 4 different sectors of the community: schools, health care sites, worksites, and community organizations/institutions. Table 2 provides examples of the types of sites that are recommended for assessment for each sector.

Table 2. Sector and Associated Observation Site Types

SECTOR	OBSERVATION SITE TYPE
School	Public Elementary, Middle and High Schools
Worksite	Large employer
Health Care	Hospital Community Clinic
Community Organization/Institution	Community Center Senior Center Food Store Farmer's Market Park District

The external environment questions require the rater to make observations about and measure infrastructure elements in the general area outside of the observation site such as sidewalks, paths, parking areas, intersections and public transportation stops. The purpose of these questions is to understand how easy or difficult it might be for someone with a disability to access the facility. Before going out to a site, please see the document titled: *Instructions_for_Pre-Identifying_External_Environment.pdf*

It has a tutorial on how to map out the external environment of a site before you go out in the field, which will make the assessment much easier. External environment questions are divided into the following sections of the survey:

- **Walking/rolling around the Site:** Raters will observe the safety and aesthetics of the areas surrounding the site to determine factors that make walking/rolling pleasant or that might deter people from walking/rolling. Raters will assess the accessibility of the surrounding walking infrastructure.
 - o To determine which blocks to assess, the planning group should come to a consensus on which intersections and paths are most important to assess for people with disabilities to access the site from the surrounding neighborhood.
- **Public Transportation to the site:** For communities with public transportation, raters will assess the accessibility of a nearby transit stop and transit frequency.
 - o The transit section has 3 questions that may not be easily observable. They are questions XX-XX. It may be easier for you to look up the answers ahead of time online or by calling the local transit provider for the area around that site.

- **Parking:** This section covers the parking area.
- **Getting Into the Building:** Upon arriving at the observation site, raters will assess the paths for getting to the building, entry ways into the building including main front doors, accessible entry ways, stairs and doorways.

The internal environment questions require the rater to take notes and measurements about the built environment and equipment in different areas within the observation site, such as entry ways and restrooms and multiple venues (e.g. indoor and outdoor physical activity areas and food environments).

- **Health Promotion Information:** In this section, raters will observe information that may be posted at the site related to encouraging healthy habits or for promoting physical activity and nutrition programs.
- **Restrooms:** Raters will examine restrooms nearest to the various venues.
- **Venue Specific Questions:** These questions require the raters to assess specific facilities related to physical activity and healthy eating. They include questions on elements of getting into a venue (routes, entry ways, ramps etc.). Then, there are specific aspects of using the site and participating in an activity (see Table 3).

Table 3. Venues at Observation Site Types

TYPE OF VENUE	EXAMPLE OF VENUE
Indoor Food Venue	Cafeteria, Restaurant
Outdoor Food Venue	Farmer's Market , Community Gardens
Indoor Physical Activity Venue	Gymnasium, Fitness Room, Indoor Pool
Outdoor Physical Activity Venue	Sports field (e.g. Basketball Court, Soccer Field, Baseball Field, Tennis Court), Playground, Outdoor Pool , Walking Trail
Healthcare setting	Doctors Office, Nurses' Office, Clinic

Additional information on questions:

The onsite assessment is made up of a few different kinds of questions.

- **Yes/No:** Yes/no questions are used for determining whether an accessibility feature is present or not. This type of question is also used as a screener to know whether to ask a next set of questions. Pay attention to the skip instructions following the screener questions.
- **Multiple choice/Check all that apply:** Many of the questions about particular features will have multiple choices that represent the different aspects of accessibility of that feature. You will be asked to choose all that apply and sometimes an n/a option is at the bottom of the list where applicable.

- **None, some, many, all:** There are several questions that have a grid which has accessibility characteristics in the rows and the options none, some, many and all in the columns. These are used in situations where you might see more than 1 of a type of feature. For instance, you may evaluate more than 1 sidewalk around the site, or more than one aisle in a physical activity venue. This is a way to evaluate them all together and give a sense for what proportion of these features are accessible to people with disabilities. Choosing none or all is self-explanatory. Choose some if you observe the characteristic on at least 1 but less than half of the features you observe. Choose many if you observe the characteristic on more than half but not all of the features. As you're going through these types of questions, it can be helpful to 'pencil-in' an answer and change it along the way. For instance, after the first sidewalk you observe, you may see that it is not 4 feet wide. So you can pencil in none and then change it to some or many if you come across another sidewalk that is 4 feet wide.

There are additional instructions at the beginning of sections and/or under specific questions. Pictures and diagrams have also been placed throughout the document to help visualize what some of the response items and questions might look like.

IV. Detailed Protocol Instructions

Electronic versions of the tool

Online versions of each of the 3 assessments are available for use:

- **Organizational Assessment-** A link to the online version of the CHII Organizational Assessment can be sent around to organizations in the community to complete. Alternatively, raters can use the online version during a site visit and interview staff at an organization to obtain the answers.
- **Onsite Assessment** – Raters who will be assessing the community can use the online version on smart phones and tablets that have internet connections. Raters may also choose to complete it on paper and then input the answers online.
- **Macro- Community At Large Assessment-** Because this assessment involves interviews from various sources, it will be easier to mark it on paper first and then input it online.
- The data collected will be scored according to the constructs listed on p.5. The scoring sheet is part of the CHII toolkit. The scores can then be used to develop strategies with the help of NCHPAD technical assistance and the Guidelines Recommendations and Adaptations Including Disability or GRAIDs, which can be accessed through www.nchpad.org.
- Obtaining copies of the online versions
 - o Please contact Yochai Eisenberg at yeisen2@uic.edu.

Measurements

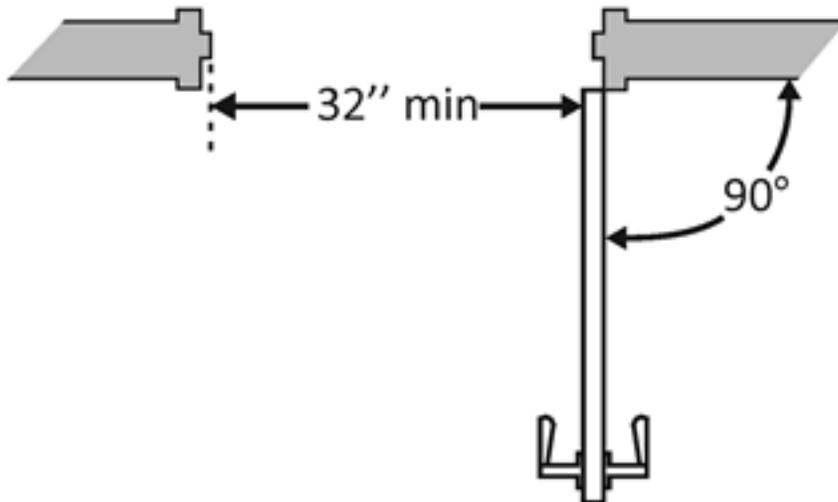
To most effectively use the CHII On-site assessment, it is important to bring the appropriate tools. These are:

- **Measuring tape** (measuring the width of doors and height of counters, etc.);
- **Digital level or Digital level app** (measure the slope of ramps, curb cuts and the cross slope of the sidewalk);
- **Door pressure gauge** (measures how difficult it is to open a door)

Measuring tape: Measuring tape is a common household tool and can be purchased cheaply at any hardware store. It is best to use a tape measure designed for carpentry, a metal retracting tape measure. Ideally the measuring tape should have a lock to keep the tape from retracting once it is extended from the case. A hook should jut out from the case.

Using measuring tape: Unlock the measuring tape and pull the hook with the left hand while holding the case with your right hand. Depending on what you intend to measure, extend the tape out until it is one foot (12 inches) over the benchmark you are measuring. For example, if you are measuring the width of a door, and it should be a minimum of 32 inches, you should extend it to about 44 inches. Lock the tape measure, hold the hook to the left side of the door (or the top of the object if measuring length), and using the case, maneuver the right most side of the tape measure to the rightmost side until it bends. Because the intent is to measure the actual width of the opening, the right or left most side (depending on the door) should actually touch the door near but not on the hinges as in the picture below

Figure 5: Drawing of how to measure door width



Digital level: A digital level is a device that measures the slope or angle of a surface. For the purposes of this assessment, we are interested in how horizontal a flat surface is. Digital levels can be costly, ranging from about \$50 to \$300. An alternative can be an app for a smart phone or tablet. There are some free digital level

apps which tend to measure in angles rather than slopes (more on this below). Make sure to use an app that allows measurement to a tenth of a degree (i.e. 1.1° as opposed to 1°). Some examples of free apps are either Stanley Level and iHandy Level for the iPhone and Bubble level and RIGID digital bubble level the Android platform. If you are using a smart phone app, use a 2 foot long straight edge to place on the ground and put your phone on top of that. This helps measure the slope along a longer plane (see figure 7 below).

Interpreting a digital level: Depending on whether you use a smart tool or phone app, the measurement of the slope will be displayed in percentages, degrees or inches per foot. For example, suppose the level is placed on a flat horizontal surface and is set to display the percentage of the slope (or cross slope), if the number 2 is displayed that means 2%. If the level were set to degrees (for measuring angles) it would display 1.1° , and if it were set to inches per feet the level would display $\frac{1}{4}$ ". The CHII assessment mentions measurements in both slopes and angles. Make sure you are consistent with the unit of measurement to prevent misinterpretation of results.

Calibration: It is important to calibrate the digital level before you conduct an assessment. Consult the manufacturer's manual for more instructions. Both digital levels and smart phone apps allow calibration.

Using a digital level: Certain CHII questions call for a measurement of the cross slope of sidewalks and the slope of ramps and curb cuts. To assess the slope of ramps or curb cuts, turn on the smart level and place it parallel to the path of the curb cut or ramp in the center of the area you're measuring (figure 6). Take note of the measurement. In order to measure the cross slope, turn on the digital level and place it perpendicular (or at a 90° angle) to the path of the sidewalk.



Figure 6: Image of a smart tool



Figure 7: Image of phone on straight edge measuring curb cut

Using a door pressure gauge: Door pressure gauges measure the opening force of a door by pushing or pulling open the door using the pressure gauge. This video: provides a good demonstration of how to use the gauge and determine if a door meets ADAAG guidelines: <http://www.youtube.com/watch?v=7-CYPdI3t9Q>



Figure 8: Image of a door pressure gauge



Figure 9: Image of a door pressure gauge measuring a door

For more information visit www.nchpad.org