October 4, 2015

Office of the Secretary
Consumer Product Safety Commission
Washington, DC 20207

Petition to Mandate the Use of the ANSI/NFSI B101.5 Standard Guide for Uniform Labeling Method for Identifying the Wet Static and Wet Dynamic Coefficient of Friction (Traction) of Floor Coverings, Floor Coverings with Coatings, and Treated Floor Coverings

Scope
This petition requests that the Consumer Product Safety Commission mandate that manufacturers of floorcoverings and coatings uniformly label their products' slip-resistance per the American National Standards Institute (ANSI) B101.5-2014 Standard Guide for Uniform Labeling Method for Identifying the Wet Static and Wet Dynamic Coefficient of Friction (Traction) of Floor Coverings, Floor Coverings with Coatings, and Treated Floor Coverings.

Requirements for petitions
Indicate the product (or products) regulated under the Consumer Product Safety Act or other statute the Commission administers for which a rule is sought. We request that the manufacturers of hard surface flooring materials and floor coatings be mandated to label their products to provide point-of-sale information about the product's degree of slip-resistance in accordance with the labeling set out in ANSI/NFSI B101.5-2014 standard (attached). According to the National Floor Safety Institute (NFSI) 55% of all same-level slips and falls, occur as the result of a hazardous (slippery) walkway. Given such, it is estimated that half of all same level falls, which take place in the home, are the result of a slip and fall.

Currently manufacturers of floor coverings are not compelled to provide consumers information as to the slip resistance (coefficient of friction) of their products. In fact, with the exception of the ceramic tile industry, no other floor covering manufacturers test their products COF or even have adopted a test method. Furthermore, most ceramic tile manufacturers do not label the slip resistance of their products. Floor covering manufacturers who do not test or label their products COF include:

- Ceramic tile (porcelain)
- Natural Stone (marble, granite, etc.)
- Resilient Flooring (vinyl)
- Laminate
- Wood (bamboo, cork, etc.)
- Floor Finishes, Paints and Coatings

In the absence of slip resistance data via a uniform product label the consumer is on their own when it comes to selecting an appropriate or safe floor for their individual use and often times assume that all floors are safe. Different types of floor coverings have wide-ranging differences in slip resistance, which the materials have widely differing COF levels, many of which may be inappropriate for specific use.

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However, the consumer, specifically the elderly, only finds out that they made the wrong choice after they have fallen and injured themselves. The failure by the floor covering industry to consciously not inform the consumer as to their products safety (ie: slip resistance) is one of the leading factors as to why so many elderly Americans slip and fall.

Set forth facts, which establish the claim that the issuance of the rule is necessary (for example, such facts may include personal experience: medical, engineering or injury data, or a research study). The primary focus of our petition is aimed at protecting those most vulnerable from the risk of a slip and fall event, mainly our countries elderly population.

According to the U.S. Census Bureau approximately ten thousand (10,000) baby-boomers are retiring each day and according to the Harvard University Health Letter [1.] the baby-boomer generation will have an average life expectancy of 81.6 years of which many may live to age 90. According to the National Safety Council's Injury Facts (2014 edition) of the 38,300,000 individuals who sought medical attention due to an unintentional injury, 1,930,000 took place in the home. Sixty-three thousand (63,000) Americans died in their home as a result of an unintentional injury. Of the estimated $793.8 billion cost for unintentional injuries (2012) $220.3 billion was spent on injuries which occurred in the home.

In 2005, 20,200 Americans lost their life as a result of an accidental fall that number has risen to 27,800 in 2014 a 38% increase of those who are most impacted are the nation's elderly age 65+. In 2005, elderly 16,400 Americans lost their life as a result of an accidental fall that number has risen to 23,100 in 2014. Since 2005, accidental falls have increased by an average of 4% a year.

Accidental falls disproportionally affects the elderly more than any other demographic segment of our society. According to the NSC, "Falls were the third leading cause of unintentional-injury related death in the United States in 2010. leading cause of unintentional-injury-related death for people age 70 or older and the second leading cause for ages 64-69 for each year of age; deaths resulting from falls peaked at 1,178 for individuals age 87."

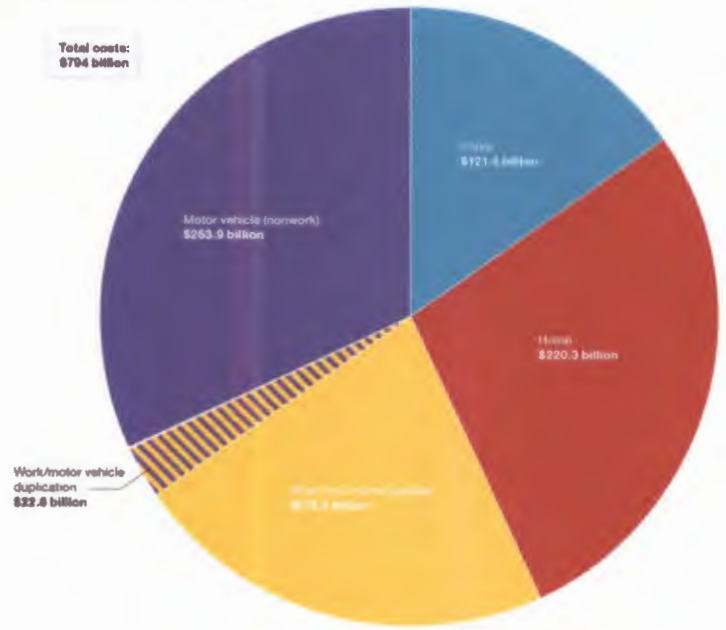
Between the years 2004 and 2012 the economic impact of nonfatal unintentional injuries rose by 38% from $574.8 billion in 2004 to $793.8 Billion in 2012.

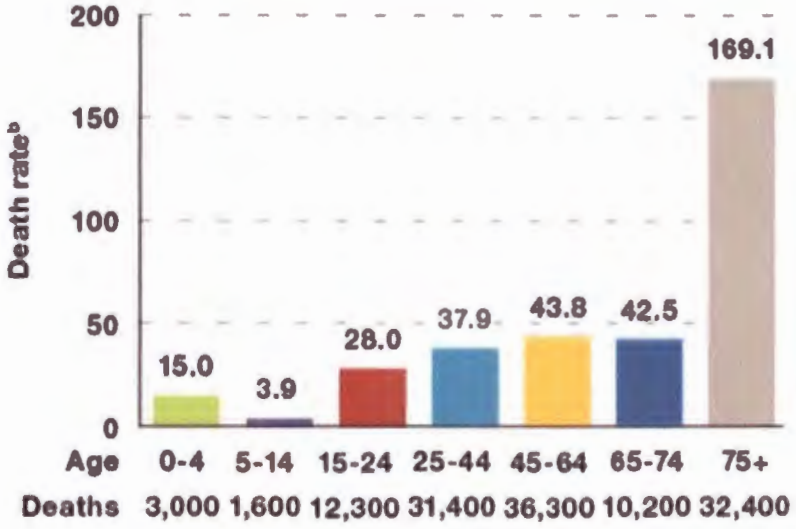
According to the National Health Interview Survey, 2011, 42.9% of females and 27.7% of males will fall and seek medical attention. Of the 37,872,000 injury episodes, 12,343,000 occurred in the home and 6,941,000 occurred outside of the home. The study revealed, "Falls and motor vehicle incidents were the leading causes of injury-related emergency department visits, accounting for 26% and 11% of the total, respectively. In total, about 10.5 million visits to emergency departments in 2010 were due to unintentional falls and nearly 4.5 million were due to motor vehicle incidents." Of the 29,310,000 unintentional injuries as identified via the E-code system, 10,512,000 were the result of a fall (E880.0-E886.9, E888).

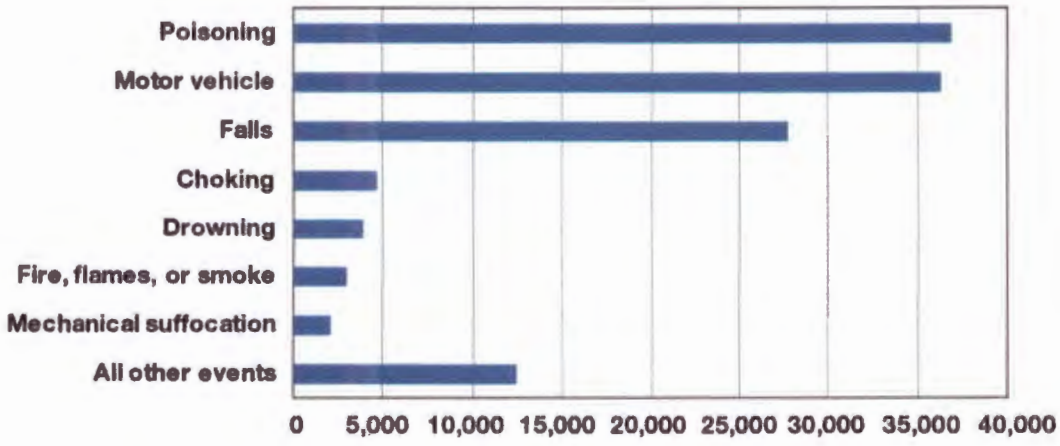
In 2011, falls represented the leading cause of non-fatal injuries, which required emergency room treatment for all age groups.

1.- Harvard Health Publications, Harvard Medical School: "Average Life Expectancy: Measuring yours."

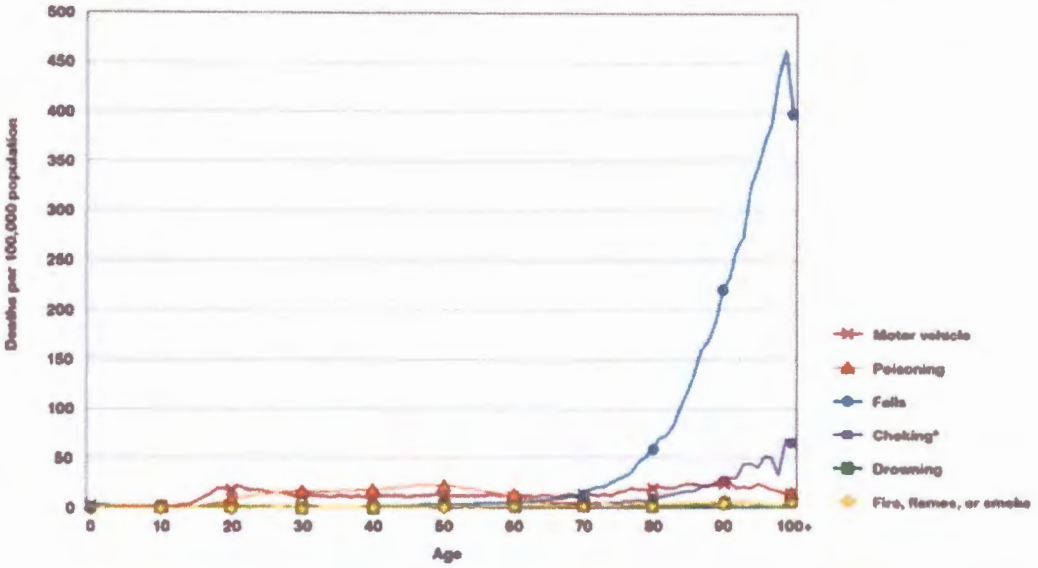
Costs of unintentional injuries by class, 2012



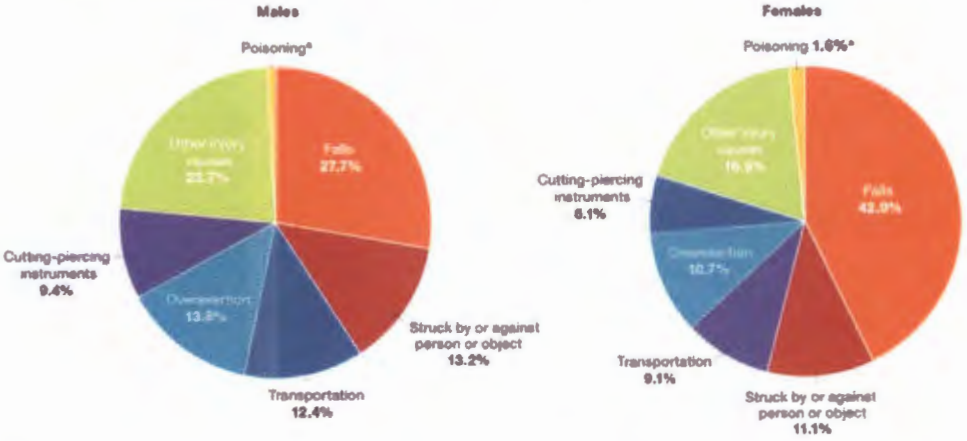




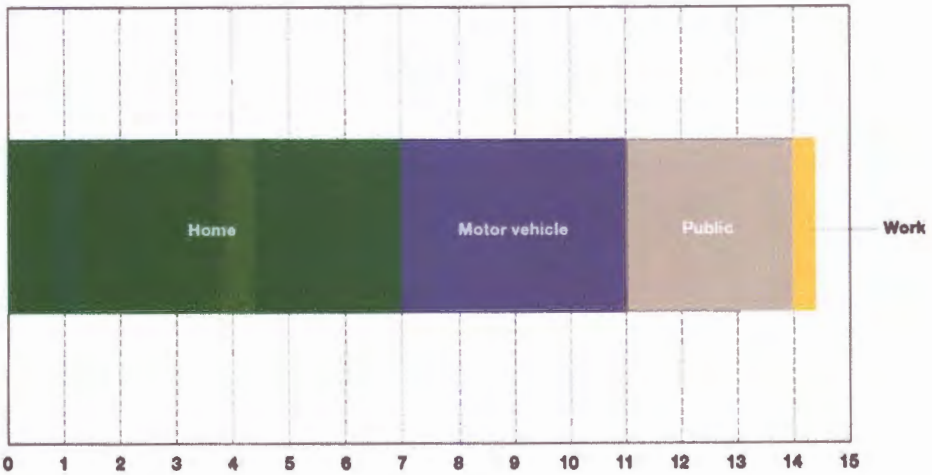
Unintentional-injury-related deaths per 100,000 population by age and event, United States, 2010

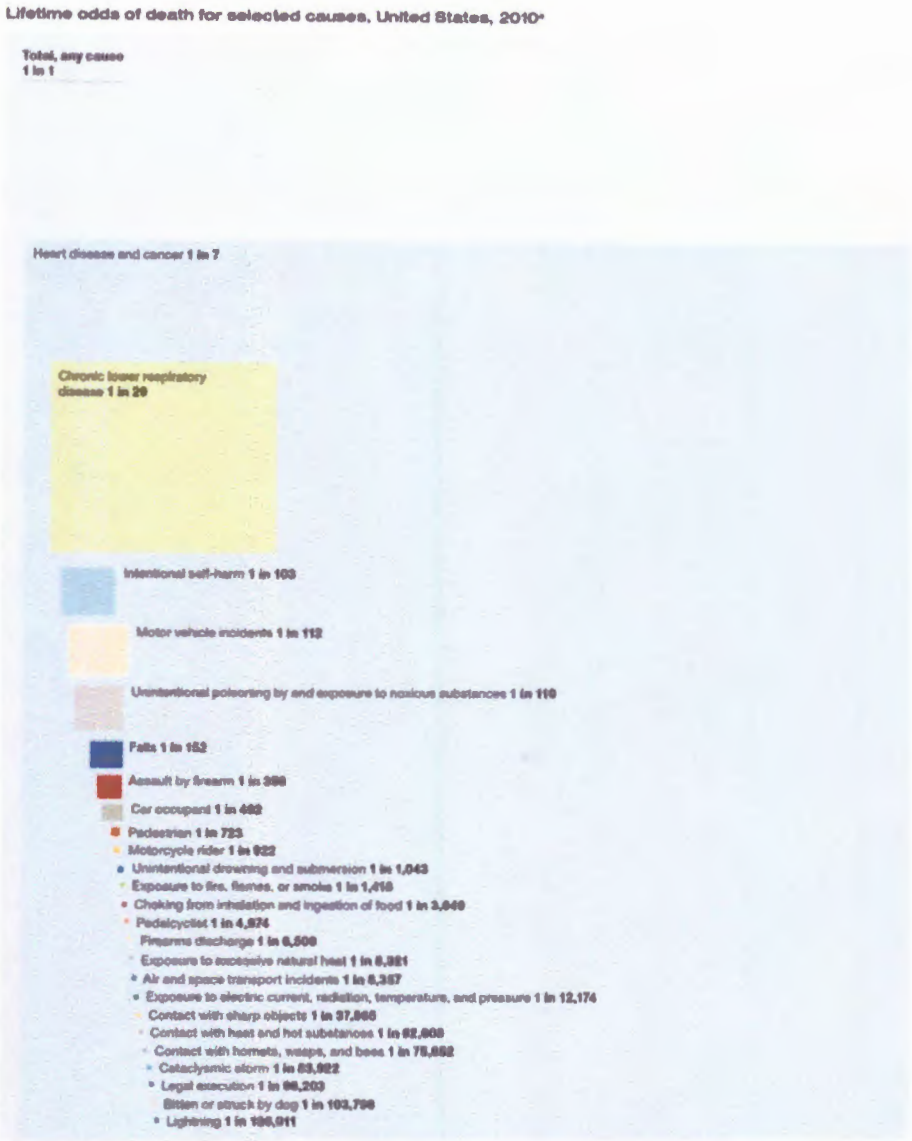


Leading external causes of injury and poisoning episodes by sex, United States, 2011



Deaths every hour...





According to the CDC, "In 2013, the direct medical costs of older adult falls, adjusted for inflation, were $34 billion. With the population aging, both the number of falls and the costs to treat fall injuries are likely to increase."

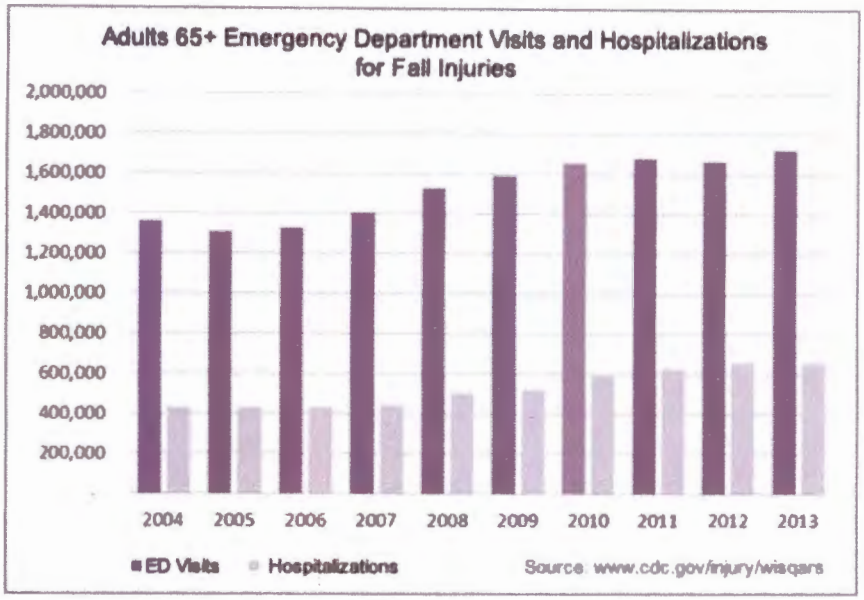
How big is the problem?

- One in three adults aged 65 and older falls each year.[2] Of those who fall, 20% to 30% suffer moderate to severe injuries that make it hard for them to get around or live independently, and increase their risk of early death.[3]
- Older adults are hospitalized for fall-related injuries five times more often than they are for injuries from other causes.[4]
- Annually, emergency departments treat about 2.5 million nonfatal fall injuries among older adults; more than 30%, or about 734,000 of these patients have to be hospitalized.[5]

How are costs calculated?

The costs of fall-related injuries are often shown in terms of direct costs.

- Direct costs are what patients and insurance companies pay for treating fall-related injuries. These costs include fees for hospital and nursing home care, doctors and other professional services, rehabilitation, community-based services, use of medical equipment, prescription drugs, changes made to the home, and insurance processing.
- Direct costs do not account for the long-term effects of these injuries such as disability, dependence on others, lost time from work and household duties, and reduced quality of life.



How costly are fall-related injuries among older adults?

- In 2013, the total direct medical costs of fall injuries for people 65 and older, adjusted for inflation, was $34 billion.[1]
- Among community-dwelling older adults, fall-related injury is one of the 20 most expensive medical conditions.[7]
- In 2002, about 22% of community-dwelling seniors reported having fallen in the previous year. Medicare costs per fall averaged between $14,306 and $21,270 (in 2013 dollars).[8]
- Among community-dwelling seniors treated for fall injuries, 65% of direct medical costs were for inpatient hospitalizations; 10% each for medical office visits and home health care, 8% for hospital outpatient visits, 7% for emergency room visits, and 1% each for prescription drugs and dental visits. About 78% of these costs were reimbursed by Medicare.[9]

How do these costs break down?

Age and sex

- The costs of fall injuries increase rapidly with age.[1]
- Costs of both fatal and nonfatal falls are higher for women than for men.[1]
- Medical costs for women, who comprised about 60% of older adults, are two to three times higher than the costs for men.[1]

Type of injury and treatment setting

- Approximately three-fourths of fall deaths, and three-fourths of total costs, are due to traumatic brain injuries (TBI) and injuries to the lower extremities.[1]

- Injuries to internal organs are responsible for about 28% of fall deaths and account for about 29% of costs.[6]
- Fractures are both the most common and most costly nonfatal injuries. Just over one-third of nonfatal injuries are fractures, but these account for about 61% of total nonfatal costs.[1]
- Hospitalizations account for nearly two-thirds of the costs of nonfatal fall injuries and emergency department treatment accounts for about 20%.[1]
- On average, the hospitalization cost for a fall injury is over $35,000.[10]
- Hip fractures are the most serious and costly fall-related fracture. Hospitalization costs account for about 44% of the direct medical costs for hip fractures.[10]

Nursing home residents fall frequently. About 1,800 older adults living in nursing homes die each year from fall-related injuries and those who survive frequently sustain injuries that result in permanent disability and reduced quality of life.[1]

How big is the problem?

- More than 1.4 million people 65 and older live in nursing homes.[2] If current rates continue, by 2030 this number will rise to about 3 million.[3]
- About 5% of adults 65 and older live in nursing homes, but nursing home residents account for about 20% of deaths from falls in this age group.[4]
- Each year, a typical nursing home with 100 beds reports 100 to 200 falls. Many falls go unreported.[4]
- Between half and three-quarters of nursing home residents fall each year.[5] That is twice the rate of falls among older adults living in the community.
- Patients often fall more than once. The average is 2.6 falls per person per year.[6]
- About 35% of fall injuries occur among residents who cannot walk.[7]

How serious are these falls?

- About 1,800 people living in nursing homes die from falls each year.[1]
- About 10% to 20% of nursing home falls cause serious injuries; 2% to 6% cause fractures.[1]
- Falls result in disability, functional decline and reduced quality of life. Fear of falling can cause further loss of function, depression, feelings of helplessness, and social isolation.[5]

Why do falls occur more often in nursing homes?

Falling can be a sign of other health problems. People in nursing homes are generally frailer than older adults living in the community. They are usually older, have more chronic conditions, and have more difficulty walking. They also tend to have thought or memory problems, to have difficulty with activities of daily living, and to need help getting around or taking care of themselves.[8] All of these factors are linked to falling.[9]

What are the most common causes of nursing home falls?

- Muscle weakness and walking or gait problems are the most common causes of falls among nursing home residents. These problems account for about 24% of the falls in nursing homes.[5]
- Environmental hazards in nursing homes cause 16% to 27% of falls among residents.[1,5]
- Such hazards include wet floors, poor lighting, incorrect bed height, and improperly fitted or maintained wheelchairs.[5, 10]

The National Council on Aging (NCOA) Falls Free 2015 National Falls Prevention Action Plan (NFPA) addresses the immediate need to reduce elder falls and outlines specific goals and strategies. The NFPA Home Safety Goal A. states that "All older adults will have knowledge of and access to effective home safety measures (including information, assessments, and home modifications) that reduce home hazards, improve independent functioning, and lower
the risk of falls."

The NFPA strategy to accomplish Goal A. is to "Raise awareness and disseminate information about home safety practices and options for caregivers and older adults to reduce falls." The action plan further seeks to: "Develop and promote standards related to product safety, service quality, skill level of home modification providers, and expected outcomes to assist consumers in making informed decisions about home safety." The National Floor Safety Institute was a participant at the 2015 Whitehouse Conference on Aging, which established the plan whereby our proposed mandatory labeling requirement, is in direct support of the NFPA goals and strategies.

Contain an explicit request to initiate Commission rulemaking and set forth a brief description of the substance of the proposed rule thereof, which it is claimed should be issued by the Commission. (A general request for regulatory action which does not reasonably specify the type of action requested shall not be sufficient.) We ask the Commission to mandate ANSI/NFSI B101.5-2014, which would require a label indicating the slip-resistance (coefficient of friction (COF)) for the flooring material based on tests described in the ANSI/NFSI B101.1 and B101.3 standards (attached). The label would provide a graphic of a traction scale with an arrow pointing to the COF value for the product. Providing information to consumers so that they can make informed purchasing choices.

To address the issue of whether a regulation is necessary, a request, at a minimum, must provide information that could support a claim that the regulation is needed to reduce or eliminate a risk of injury. Although you provide information indicating that injuries result from slipping on flooring materials, you do not put forth any information showing a connection between the point-of-sale labeling requirement that you advocate and a reduction in slip, trip, and fall injuries. Indeed, rather than claiming that slip-resistance labeling would reduce or eliminate the risk of injury, your request states only that mandating a floor slip-resistance labeling requirement "will serve as the first tangible step in advancing an elder fall prevention strategy and national agenda. The proposed request is similar to that of the governments mandatory labeling of food products whereby important nutritional information is provided in a uniformly standardized label, which the consumer can use to make food-purchasing decisions. Certain food contents like that of a particular low traction floor can be detrimental to public health whereby the use of a mandatory product label can assist the consumer in making a more informed decision. Those at risk, specifically the elderly, will then have the benefit of selecting flooring which offer higher slip resistance and in-turn reduce the risk of an accidental slip and fall event. Furthermore, flooring manufacturers along with their retail and distribution base can assist in providing point of purchase information explaining the purpose of the label and encourage consumers to use the label as a part of the overall buying decision.

The economic impact to the manufacturing industry will be minimal since most of them already test the coefficient of friction of their products as a part of their quality control process. However, flooring

manufacturers have consciously chosen not to publish such information to their customers by way of a consumer label which places them at risk.

Todays floor covering consumer has little to no information as it relates to the slip resistance and therefore the slip related risk of the flooring materials they select for use in their homes and businesses. Consumers assume that all floor coverings are safe only to realize after a serious and debilitating fall that the flooring material they selected was more slippery then they thought. Most slips and falls are preventable and if the consumer is aware of the slip risk associated with various types of flooring materials they will be empowered to make more informed choices. Mandating the use of a uniform product label is the first step in reducing the growing epidemic of falls particularly to our most vulnerable citizens, the elderly. In the interest of public safety we therefore urge the CPSC to require manufacturers of commercial and residential floor coverings and coatings to apply the ANSI/NFSI B101.5 product label to their respective products.

Sincerely,

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References

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Attachments

1. ANSI/NFSI B101.5 Standard Guide for Uniform Labeling Method for Identifying the Wet Static and Wet Dynamic Coefficient of Friction (Traction) of Floor Coverings, Floor Coverings with Coatings, and Treated Floor Coverings
2. ANSI/NFSI B101.1 Test Method for Measuring Wet SCOF of Common Hard-Surface Floor Materials
3. ANSI/NFSI B101.3 Test Method for Measuring Wet DCOF of Common Hard-Surface Floor Materials (Including Action and Limit Thresholds for the Suitable Assessment of the Measured Values)

Attachment #1

ANSI/NFSI B101.5-2014

American National Standard

B101.5 Standard Guide for Uniform Labeling Method for Identifying the Wet Static and Wet Dynamic Coefficient of Friction (Traction) of Floor Coverings, Floor Coverings with Coatings, and Treated Floor Coverings

(Product Information Marking)

Secretariat

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by
American National Standards Institute, Inc.

American National Standard

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Foreword

(This Foreword is not part of the proposed ANSI/NFSI B101.5-2014 Standard)

This standard was developed by a subcommittee of the National Floor Safety Institute (NFSI) B101 Main Standards Committee, national in scope, functioning under the procedures of the American National Standards Institute with the NFSI as the ANSI Accredited Standards Developer. The NFSI was founded in 1997 with the mission: "To aid in the prevention of slips, trips and falls through education, research and standards development." The development of the ANSI/NFSI B101.5-2014 Standard is a direct result of the mission of the NFSI answering a need for consumer education to ameliorate the effects of falls.

As a standards developing organization, NFSI sought and was accredited by the Executive Council of ANSI on June 6, 2006 to develop standards addressing the prevention of slips, trips and falls. The American National Standard/NFSI B101.5-2014: *Standard Guide for Uniform Labeling Method for Identifying the Wet Static and Wet Dynamic Coefficient of Friction (Traction) of Floor Coverings, Floor Coverings with Coatings, and Treated Floor Coverings* answers the perceived need for this standard, through an educational approach, to stem the growing number of slips and falls as they relate to insufficient walkway surface traction by defining three separate ranges of traction. Given that the consumer of floor coverings is rarely provided information relevant to the slip resistance characteristics of the floor coverings they purchase, and are unable to comprehend technical information relevant to the measurement of coefficient of friction (COF) the need for an easy-to-understand, consumer driven label using a tested symbol graphic to do so has been brought forth.

The B101 Standards series are targeted at slip, trip and fall prevention which, in this context, set standards for maintaining a safe wet coefficient of friction on various walking surfaces members of the public may encounter. The B101.5 Standard is a part of that development project and exists to provide a consumer friendly symbol graphic to be displayed on these products so purchasers of flooring and floor maintenance products are educated and informed of the inherent slip resistance of that particular product. By referring to this graphic the consumer can make an educated buying decision on flooring and floor maintenance products by being easily able to compare the relative slip resistance properties of competing products. By affixing the graphic this standard establishes a product labeling method which specifies three levels of traction derived from the ANSI/NFSI B101.1-2009 *Test Method for Measuring Wet SCOF of Common Hard-Surface Floor Materials standard. and/or three levels of traction derived from the ANSI/NFSI B101.3-2012 Test Method For Measuring Wet DCOF of Common Hard Surface Floor Materials.*

The symbol graphic presented in the standard was developed from a field of several collected by the accredited standards developer. From this collection the B101.5 Subcommittee selected three (3) symbol graphics for purposes of referent testing. In turn a nationally recognized independent ergonomic and safety signage research firm tested these referents using the protocols and meeting the guidelines of the ANSI Z535.3 Criteria for Safety Symbols. Based upon the results of testing a diverse and most likely affected consumer population the gauge symbol is the validated norm for this informational standard.

This standards use of color is, in part, based on those developed by the ANSI Z535.1-2006 Safety Colors Standard, which focused on improving labeling safety through uniformity in safety

color coding. Like the ANSI Z535.1 standard, the safety color codes used in this standard were selected to provide the best feasible discrimination for observers with either normal or color-deficient (colorblind) vision.

Neither the B101 Main Standards Committee, nor the accredited standards developer, perceive that this standard is perfect or in its ultimate form. It is recognized that new developments in communications are to be expected, and that revisions of the standard may be necessary as the combination of science and art progresses and further experience is gained. The committee does believe, however, that the standard in its present form provides a comprehensive a guide when selecting flooring materials and floor maintenance products. To this end it is intended that the requirements contained herein will be adopted by the affected general public, contractors, property owners, and relevant professionals as they seek to make a more informed decision in selecting appropriate floor materials.

NOTICE AND DISCLAIMER

The use of American National Standards is voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will not provide a interpretation of any American National Standard. Requests for interpretations or suggestions for improvement of this standard should be directed to the National Floor Safety Institute (NFSI).

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The information in this publication was considered technically sound by the consensus of persons engaged in the development and approval of the document at the time it was developed. Consensus does not necessarily mean that there is unanimous agreement among every person participating in the development of this document.

NFSI standards and guideline publications, of which the document contained herein is one, are submitted and developed through the ANSI voluntary consensus standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. While the NFSI administers the process it does not write the document and it does not independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in these standards and guideline publications.

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This standard was processed and approved for submittal by the NFSI B101 Committee on Safety Requirements for Slip, Trip and Fall Prevention. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the B101 Standards Committee had the following members:

Chairman	Howard W. Harris, M.D.
Secretary	Russell J. Kendzior
Assistant Secretary	Jim E. Lapping, MS, PE, CSP

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American Slip Meter	Craig Stephenson
CED Investigative Technologies	Douglas M. Hrobak
Cintas Corporation	Richard Bing
Concrete Polishing Association of America	Roy Bowman
Crossville, Inc.	Noah Chitty
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	Lindell L. Lummer (Alt)
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Maximum Floor Safety	Chad Frenette
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State Farm Insurance	Steve Spencer
StonePeak Ceramics	Rodolfo Panisi
Stripe-A-Zone	David Sargent
Traction Auditing, LLC	Howard Walker Harris, MD (P)
	Brent Johnson (Alt)

Subcommittee B101.5 on Uniform Labeling Method, which developed this standard, had the following members:

J. Terrence Grisim, Chairman
Thomas F. Bresnahan, Secretary

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Accuform Signs	Elroy Lundblad
Bresnahan Consulting Associates	Thomas F. Bresnahan, CSP
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B101.5 Standard Guide for Uniform Labeling Method for Identifying the Wet Static and Wet Dynamic Coefficient of Friction (Traction) of Floor Coverings, Floor Coverings with Coatings, and Treated Floor Coverings

Section 1 Scope/Application/Purpose

1.1 Scope: This guideline sets forth a uniform product labeling method which identifies the wet static and wet dynamic coefficient of friction (traction) of floor coverings, floor coverings with coatings, and treated floor coverings.

1.2 Application: This standard applies to floor products used primarily on public and private areas where pedestrians are not supervisory controlled. The term "floor products" refers to floor coverings, coatings, and treatments intended for floor coverings except carpeting, rugs, mats, runners, and artificial turf.

1.3 Purpose: The purpose of this standard is to offer, at the point of product sale, guidance to users/purchasers on the traction capabilities of the contents of the package through display of labels and markings.

Section 2 Reference to Standards and Other Documents

2.1 ANSI/NFSI B101.1-2009 Test Method for Measuring Wet SCOF of Common Hard-Surface Floor Materials

2.2 ANSI/NFSI B101.3-2012 Test Method For Measuring Wet DCOF of Common Hard Surface Floor Materials

2.3 ANSI Z535 Signs and Colors Standards Series[1]

Section 3 Definitions

3.1 label (informational) - any printed or stenciled information affixed or otherwise applied to a container or package to inform the user/purchaser of the degree of traction provided.

3.2 package / packaging / container

3.2.1 package (consumer) - a primary and / or secondary container designed to contain, store, and protect from the point of manufacture to the point of use (a product intended for household or individual use

3.2.2 packaging - wrapping or bundling a single item or bundling a set or quantity of the same item into a single unit.

[1] See ANSI Z535 2006 Color Chart, NEMA Rosslyn, VA 22209 for more information regarding Pantone Matching System.

3.2.3 container - a portable receptacle designed to provide material or item integrity for storage, distribution, retailing and use.

3.3 symbol - a graphic representation intended to convey a message without the use of words.

3.4 traction - the friction between a body and the surface on which it moves, i.e., between footwear and flooring.

3.**5 cleaner** - a solvent used to remove foreign matter, soil, or other treatments from a surface.

3.6 coatings - a layer of any substance, liquid, or semi liquid applied to a surface that dries or cures to form a solid protective finish to enhance its functional or decorative characteristics.

3.7 floor covering - an essentially planar material, combination of resilient materials or combination of resilient material and rigid materials used to provide a finished walking surface on a floor to enhance the beauty, comfort, and utility of the floor.

3.8 treatments - any method, technique, or process designed to change the physical character of a floor surface to render it less hazardous and safer for pedestrian ambulation.

3.9 floor (in a building) -surface, usually horizontal on which persons typically walk or run.

Section 4 General Requirements of Label/Marking

4.1 Location on Package

4.1.1 The symbol and markings shall be placed in the principal panel of the package or container within the normal field of view.

4.2 Symbol/Marking Specifications

4.2.1 Black symbol and shades of black and markings on white or other background in a rectangle shape shall be formatted in the principal panel.

4.2.2 Color within the symbol (see Figure 1 A to C) shall be permitted to enhance the message

4.3 Symbol size

4.3.1 The symbol shall be legible at the intended viewing distance.

4.3.2 The print font within the symbol shall be Ariel and no less than 8 point size.

4.4 Graphic presentation of the symbol and marking

4.4.1 Figures 1 A to C shall be used in the principal panel of the product package or container based upon the test values derived from the requirements established by the ANSI/NFSI B101.1-2009 Standard.

4.4.2 Figures 2A to 2C shall be used in the principal panel of the product package or container based upon the test values derived from the requirements established by the ANSI/NFSI B101.3-2012 Standard.

4.4.3 The indicating arrow within the symbol shall point to the numerical value of traction provided by the product across the scale from lowest value of one (1) to highest value of ten (10).

4.4.4 If color is used, the safety color code in Figures 1 A to C shall use the Pantone Numbers as follows:

Pantone No.	Color	SCOF Gauge No.	DCOF Gauge No.
485 C	Red	1 thru 4 (low traction)	1 thru 3 (low traction)
109 C	Yellow	5 thru 6 (moderate traction)	4 thru 5.2 (moderate traction)
3415 C	Green	7 thru 10 (high traction)	5.3 thru 10 (high traction)

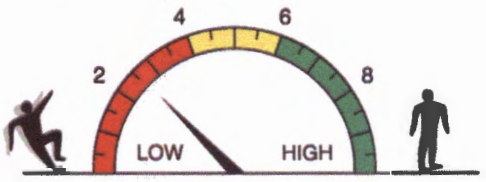
NOTE: The above parenthetical reference of traction and its corresponding gauge Segment numbers are derived from Section 5: Calculations Data Interpretations/Table 1 in, respectively, the ANSI/NFSI B101.1-2009 and ANSI/NFSI B101.3-2012 standards. These Tables also provide remediation guidance for the type of floor surfaces corresponding to these levels or degrees of traction.

4.4.5 While SCOFs and DCOFs are cited as decimal values, the symbol graphic uses whole numbers ranging from 1 to 10. Because decimal values would be meaningless or confusing to the public, manufacturers should multiply their product (s) COF test result values by 10.

NOTE: To accommodate and make more precise the decimal values, each Traction Scale segment is divided in half by a mid-point marker (1/8") allowing the indicating arrow to point to the exact value of the decimal reading which may be either below or above the marker.

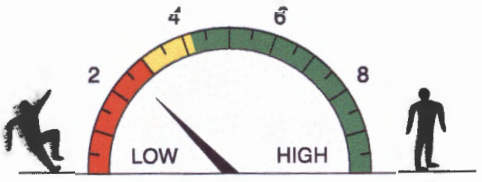
4.5 Exemplars of Figures 1 and 2

4.5.1 Figure 1 A



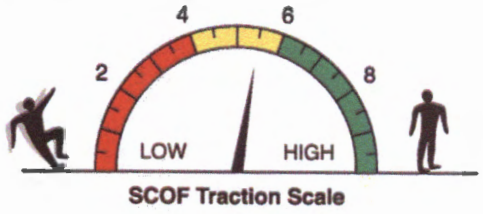
SCOF Traction Scale

4.5.4 Figure 2 A



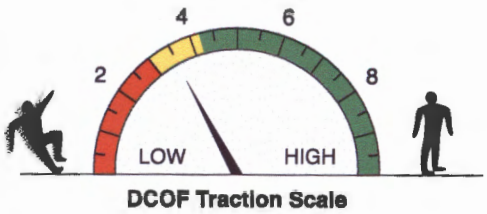
DCOF Traction Scale

4.5.2 **Figure 1 B**



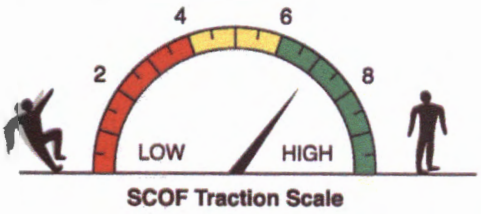
SCOF Traction Scale

4.5.5 **Figure 2 B**



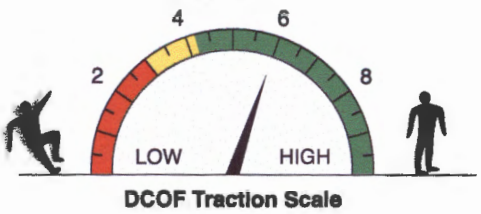
DCOF Traction Scale

4.5.3 **Figure 1 C**



SCOF Traction Scale

4.5.6 **Figure 2 C**



DCOF Traction Scale

Section 5 Package/Container Marking

5.1 The package/container holding flooring materials or products shall bear on the principal display panel the symbol marking as described in 4.2, 4.3, 4.4, and 4.5. In addition, and if warranted the message may contain the following phrase (or equivalent): "Read and follow all safety information and instructions."

5.2 So that purchasers can identify floor materials and products conforming to all of the requirements of this guide, producers, importers, and distributors may include a statement of compliance in conjunction with their name and address on product labels, invoices and sales literature. For example, "This product meets all the requirements of the ANSI/NFSI B101.5-2014 Standard (name and address of producer, importer, or distributor)".

Attachment #2

ANSI/NFSI B101.1-2009

American National Standard

B101.1 Test Method for Measuring Wet SCOF of Common Hard-Surface Floor Materials

Secretariat

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Approved October 13, 2009

American National Standards Institute, Inc.

American National Standard

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Foreword

(This Foreword is not a part of American National Standard ANSI/NFSI B101.1- 2009.)

This Standard, through four iterations by the National Floor Safety Institute (NFSI), was further developed by a subcommittee of the NFSI B101 Standards Committee, national in scope, functioning under the procedures of the American National Standards Institute with the NFSI as the ANSI Accredited Standards Developer. This Standard establishes a test method that specifies the procedures and devices used for both laboratory and field testing to measure the wet Static Coefficient of Friction (SCOF) of common hard-surface floor materials.

The B101.1 Standard was originally published as a test method by the NFSI in 2002 under the title NFSI 101-A and has served as the basis of materials testing and product certification under the NFSI's product certification program. It was the intent of the NFSI to develop a voluntary test method whose purpose is to establish a uniform test method for measuring the wet SCOF of floor coverings, polishes, and walkway coatings.

The National Floor Safety Institute was founded in 1997 with the mission: "To aid in the prevention of slips, trips-and-falls through education, research, and standards development." The development of the ANSI/NFSI B101.1-2009 Standard is a direct result of the mission of the NFSI answering a recognized need for a walkway measurement methodology.

It is intended that the procedures and performance requirements contained herein will be adopted by affected professionals and property owners as the measurement procedure for determining traction levels that facilitate remediation of walkway surfaces when warranted. Contained as a part of this Standard is an informative appendix that will serve to assist the user in developing a comprehensive floor safety assurance program.

Neither the B101 Standards Committee, nor the accredited Standards developer perceive that this Standard is perfect or in its ultimate form. It is recognized that new developments are to be expected, and that revisions of the Standard may be necessary as the combination of science and art progresses and further experience is gained. The Committee does believe, however, that the Standard in its present form provides performance requirements necessary in developing and implementing a comprehensive floor safety assurance program.

Suggestions for improvement of this Standard will be welcome. They should be sent to the National Floor Safety Institute, P.O. Box 92607, Southlake, TX 76092.

This Standard was processed and approved for submittal by the NFSI B101 Committee on Safety Requirements for Slip, Trip and Fall Prevention. Committee approval of the Standard does not necessarily imply that all Committee members voted for its approval. At the time it approved this Standard, the B101 Standards Committee had the following members:

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Secretary	Russell J. Kendzior
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Accident Prevention Services	Craig Schilder, CSP, P.E.
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Center for Disease Control (CDC)	Ileana Arias, Ph.D.
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Maximum Floor Safety	Chad Frenette
Murray State University	David Kraemer, Ph.D.
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	Brent Johnson (Alt)
U.S. Department of Labor (OSHA)	Virginia (Ginny) Fitzner

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Section 1: Scope/Purpose/Application/Exception

1.1 Scope

This test method specifies the procedures and devices used for both laboratory and field testing to measure the wet static coefficient of friction (SCOF) of common hard-surface floor materials.

1.2 Purpose

This test method provides a measurement procedure setting forth traction ranges that facilitate remediation of walkway surfaces when warranted.

1.3 Application

This test method does not apply to carpeting of any type or mechanically polished tile such as polished porcelain, marble, etc., but does address the common hard-surfaced flooring materials such as ceramic tile, vinyl floor coverings, and wood laminates, as well as coatings, polishes, etc.

Note: This test method does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. No express or implied representation or warranty is made regarding the accuracy or significance of any test results in terms of slip resistance.

1.4 Exceptions

This test method is not recommended for dry-surface testing and does not propose to be an accurate measurement method for determining dry-surface slip resistance. Dry-surface test data should not be compared to wet-surface data. No inferences should be implied or concluded regarding dry vs. wet SCOF test results or data.

Section 2: Reference to other Standards and Publications

ASTM D297-93(2006) Standard Test Methods for Rubber Products—Chemical Analysis
ASTM D2240-05 Standard Test Method for Rubber Property—Durometer Hardness

Section 3: Definitions

3.1 Friction. Resistance to the relative motion of two solid objects in contact. This force is parallel to the plane of contact and is perpendicular to the normal force.

3.2 Grout Joint. The space between two (2) or more pieces of tile. This space may be filled or unfilled.

3.3 Grain. A characteristic of many natural materials such as wood that may exhibit directional bias as it relates to slip resistance.

3.4 High-Traction. The physical property of a floor or walkway surface that is designed to mitigate slipping during normal human ambulation by providing a reasonably sufficient level of available contact friction.

3.5 Neolite®. A laboratory-grade standard testing material. The test contact material for this test method shall be Neolite® material that has an average Specific Gravity of 1.27 +/- .02 as determined by ASTM D297, and an average Shore A Hardness of 93 – 96 as determined by ASTM D2240 test methods. The test surface of the Neolite® material shall be maintained as to prevent buildup of contaminants that may affect the SCOF test results. The Neolite® test material must be soaked in distilled or de-ionized water for a minimum of five minutes before testing commences.

3.6 Slip Resistance. The property of a floor or walkway surface that acts in sufficient opposition to those forces and movements exerted by a pedestrian under all normal conditions of human ambulation.

3.7 Static Coefficient of Friction (SCOF). The ratio of the horizontal component of force applied to a body that just overcomes the resistance to slipping to the vertical component of the weight of the object or force applied.

3.8 Static Friction. The resistance opposing the force required to start the movement of one surface on or over another.

3.9 Test Area. The physical space required for the testing apparatus to perform its primary function.

3.10 Traction. The friction between the sole material of a shoe and the fixed surface it moves upon.

3.11 Tribometer. An instrument or device specifically designed to measure the available level of traction upon a floor or walkway surface.

Section 4: Test Procedure

This test procedure may be conducted using any recognized tribometer designed to measure the wet static coefficient of friction (SCOF) of a floor or walkway surface under anticipated use. Materials that are not anticipated to be used as a walkway surface are excluded from this test method and include: sand or gravel beds, stones, rough asphalt, any cloth or textile materials, or any surface that would inhibit the normal operation of the recognized testing device.

4.1 Testing Device
The tribometer manufacturer's operating and calibration directives shall be followed. If an apparent conflict should arise between this document and the recognized tribometer operating instructions, the tribometer operating instructions shall prevail[1].

4.2 Measuring the Wet SCOF of Uninstalled Flooring Material (Lab Procedure)

4.2.1 Clean the test surface with de-ionized or distilled water. Wipe dry with a lint-free cloth or untreated paper towel. Avoid contamination of test surfaces by fingerprints, chemicals, dust, etc. Do not use "low-lint." or "lint-free" towels, as they may contain chemicals that can affect the SCOF test results.

4.2.2 Wet the test surface with distilled or de-ionized water. Follow the tribometer manufacturer's operating instructions for performing wet SCOF testing.

NOTE: The test surface of the Neolite material shall be maintained as to prevent buildup of contaminants that may affect the SCOF test results. The Neolite test material must be soaked in distilled or de-ionized water for a minimum of five minutes before the testing procedure begins.

4.2.3 Place the measuring device on the test surface and conduct the test in one direction. Record the average SCOF value.

4.2.4 Rotate the device 180 degrees and conduct the test in the second direction. Record the average SCOF value.

4.2.5 Rotate the test surface 90 degrees, place the device on the tiles and conduct the test in the third direction. Record the average value.

4.2.6 Rotate the device 180 degrees and conduct the test in the fourth direction. Record the average SCOF value.

NOTE: Additional de-ionized water may be applied to the test surface as needed.

4.2.7 The average of the four (4) measurements is the result for the surface.

4.2.8 Repeat the four (4) measurements on three (3) separate tiles or test areas.

4.2.9 Record the final SCOF test results.

4.3 Measuring the Wet SCOF of Installed Flooring Material (In-Situ Procedure)

Test Area
The floor/walkway surface area to be tested must be spacious enough to fully accommodate the normal operation of the testing device without restriction. Effort should be made to test each sample area using a minimum of two directions, 90 degrees apart; often referred to as an "X-Y"

[1] The NFSI should be informed of the conflicting procedures or instructions.

pattern. If possible, one of the tests should be performed in the direction of normal pedestrian traffic. If a situation exists where both X-Y test directions prove impossible to perform, (such as a stairway step) the final test report should indicate the restricted test area. In no instance should a testing device be modified or manually "helped" to compensate for a difficult situation. This prohibition may include, but is not be limited to, pushing, pulling, lifting, tilting, or other such manipulation methods. When testing on tiled floors, whenever possible, every attempt should be made to avoid testing directly on grout joints.
The test surface of the Neolite material shall be maintained as to prevent buildup of contaminants that may affect the SCOF test results. The neolite test material must be soaked in distilled or de-ionized water for a minimum of five minutes before testing commences.

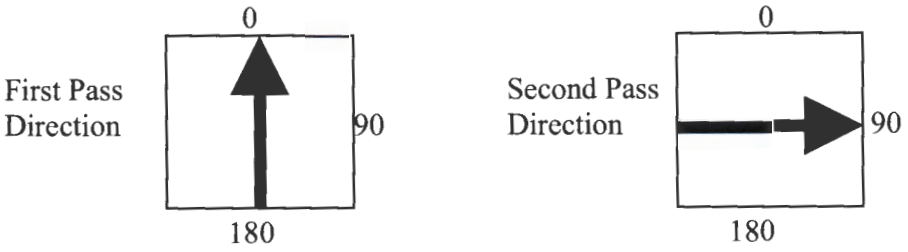
1. Create a wet test path using distilled or de-ionized water of sufficient length and width in accordance with the test device instructions for wet SCOF testing.

2. Place the measuring device on the surface and conduct the test in one direction. Record the resulting SCOF value.

3. Dry the test surface by blotting with a dry lint-free cloth. Use care to not contaminate the surface condition.

4. Check the Neolite testing material for contamination or deformation after each test and recondition per the device manufacturer's directions if required.

5. Repeat the above procedure at a 90-degree angle from the original test path.



6. Repeat both directional test measurements for each area to be tested.

NOTE: If a test area surface exhibits an obvious directional bias or grain (such as a wood floor tile) the test should be conducted in four (4) directions, ninety (90) degrees apart.

Section 5: Calculations/Data Interpretation

Calculate the test result data in accordance with the testing device manufacturer's directions. The final test results shall be recorded as SCOF values on a linear scale from 0.00 to 1.00μ.

Table 1.

Wet SCOF Value (μ)	Available Traction	Remediation
$m\mu \geq 0.60$	High Traction - Lower probability of slipping	Monitor SCOF regularly and maintain cleanliness.
$0.40 \leq m\mu < 0.60$	Moderate Traction - Increased probability of slipping	Monitor SCOF regularly and maintain cleanliness. Consider traction-enhancing products and technologies.
$m\mu < 0.40$	Minimal Available Traction - Higher probability of slipping	Seek professional intervention. Consider replacing flooring and/or coating with high-traction products.

NOTE: It is important to note that these categories are not indicative of all possible conditions. There are numerous variables that may add to, or take from. the available traction of any given floor surface. (ie: type or style of footwear, types and frequency contaminants, pedestrian preoccupation, etc). These ranges were established based on a list of approved tribometers, which were in turn based on a specific set of selection criteria. As such, these values contained in Table 1. have not been validated against the full range of other tribometers. Data produced by tribometers which are not designed to measure wet SCOF do not necessarily correlate to the values listed in Table 1.

Section 6: Test Report

The Test Report shall include as a minimum:
1. types of floor or walkway materials tested
2. location(s) of test areas and sites
3. average values for each area tested
4. description of areas tested (e.g. greasy, always wet, dusty, damaged tile, etc.)
5. copies of test results
6. signature of auditor/technician.

Section 7: Safety and Environmental Information

7.1 Potential Hazards in Test Area Vicinity

Never leave a test area unattended. People may trip over objects left in the test area, even if they are obvious. Always wipe dry the residual water left on a floor or walkway after each test, even if you plan on returning shortly. It is recommended to place a safety cone, barrier, or sign alerting personnel to the situation.

7.2 Testing Environment

The tribometer manufacturer's instructions or procedures regarding temperature and humidity requirements for the proper operation and storage of the device shall be followed. Conduct SCOF wet testing in the environmental conditions that are regarded as normal for the test area.

User Notes:

Appendix A
(Informative)

Note: To provide additional data/information, this appendix offers significant reference materials. The documents and Standards herein, while in the broad subject area of slips, trips and falls, are not in the exact context or scope of the B101 Standards series, but do suggest authoritative citations for this field of injury prevention. This appendix is not a part of the Standard and is for informational purposes only.

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Attachment #3

ANSI/NFSI B101.3-2012

American National Standard

B101.3 Test Method for Measuring Wet DCOF of Common Hard-Surface Floor Materials

(Including Action and Limit Thresholds for the Suitable Assessment of the Measured Values)

Secretariat

National Floor Safety Institute
P.O. Box 92607
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Approved January 18, 2012
by
American National Standards Institute, Inc.

American National Standard

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Suggestions for improvement of this standard should be sent to the Accredited Standards Developer: National Floor Safety Institute, P.O. Box 92607, Southlake, TX 76092.
This standard was processed and approved for submittal by the NFSI B101 Main Standards Committee on Safety Requirements for Slip, Trip and Fall Prevention. Approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard procedure, the B101 Main Standards Committee had the following members:

Organization Represented	**Representative**
Chairman	Howard Harris, M.D.
Secretary	Russell J. Kendzior
Assistant Secretary	Jim E. Lapping, MS, PE, CSP
Accident Prevention Services	Craig Schilder CSP, PE (Liaison)
American Slip Meter	Craig Stephenson
Centers for Disease Control (CDC)	Ileana Arias, Ph.D. (Liaison)
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Ludlow Composites Corporation	Robert J. Moran
Maximum Floor Safety	Chad Frenette
Murray State University	David Kraemer, Ph.D.
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Regan Scientific Instruments, Inc.	Peter Ermish (P)
	Larry Gallant (Alt.)
Safety System America	Tom Baird
SGS-U.S. Testing Company, Inc.	Scott Parkhurst
State Farm Insurance Company	Steven C. Spencer
Stone Peak Ceramics	Noah Chitty
Traction Auditing, L.L.C.	Howard Harris, M.D. (P)
	Brent Johnson (Alt.)

At the time it approved this standard procedure, the B101.3 subcommittee had the following members:

Chairman	Peter Ermish
Organization Represented	**Representative**
Batterman Engineering	Scott D. Batterman, Ph.D., P.E.
Nu-Safe Floors	Ken Fisher
Regan Scientific Instruments, Inc.	Peter Ermish (P) Larry Gallant (Alt.)
Tile Council of North America (TCNA)	Eric Astrachan (P) Katelyn Simpson (Alt.)

Table of Contents

Test Method for Measuring Wet DCOF of Common Hard-Surface Floor Materials
(Including Action and Limit Thresholds for the Suitable Assessment of the Measured Values)

Section 1: Scope/Purpose/Application/Exception

1.1 Scope

This test method specifies the procedures and devices used for both laboratory and field testing to measure the wet dynamic coefficient of friction (DCOF) of common hard-surface floor materials.

1.2 Purpose

This test method provides a measurement procedure setting forth DCOF ranges which facilitate remediation of walkway surfaces when warranted.

1.3 Application

This test method does not apply to carpeting of any type, however does address the common hard-surfaced flooring materials such as: ceramic and porcelain tile, polished concrete, stone, vinyl floor coverings, wood and synthetic laminates, and such materials with coatings or polishes applied.

Note: This test method does not purport to address all of the safety concerns, if any associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. No express or implied representation or warranty is made regarding the accuracy or significance of any test results in terms of slip resistance.

1.4 Exceptions

This test method is not recommended for dry surface testing and does not propose to be an accurate measurement method for determining dry surface slip resistance. Dry surface test data should not be compared to wet surface data. No inferences should be implied or concluded regarding dry vs. wet DCOF test results or data.

Section 2: Reference to other Standards and Publications

The specification for the SBR sensor material called for in this standard is covered by the following DIN Standards: 53273, 53479, 53504, 53505, 53507-B, 53516. See attachment "A" for the related values.

NFSI: Inter-Laboratory Study (ILS) for Tribometers Designed to Measure the Wet Dynamic Coefficient of Friction (DCOF) of Common Hard Surfaced Walkways

Section 3: Definitions

3.1 Directional Bias - a characteristic of a material whose coefficient of friction measurement may differ depending on the direction in which the material is being tested.

3.2 Dynamic Coefficient of Friction (DCOF) - the ratio of the horizontal component of force applied to a body required to overcome resistance to movement when the body is already in motion divided by the vertical component of the weight of the body or force applied to the surface where movement occurs.

3.3 Dynamic Friction - the resistance opposing the force required to perpetuate the movement of one surface on or over another.

3.4 Friction - resistance to the relative motion of two solid objects in contact. On a level surface, this force is parallel to the plane of contact and is perpendicular to the normal force.

3.5 Grain - a characteristic of many natural materials such as wood that may exhibit directional bias as it relates to slip resistance.

3.7 Incline – A walkway with a maximum slope no greater than 1:12 (4.76 degrees)

3.8 Slip Resistance - the property of a floor or walkway surface that acts in sufficient opposition to those forces and movements exerted by a pedestrian under all normal conditions of human ambulation.

3.9 SBR - Styrene Butadiene Rubber

3.10 Surfactant Solution – A solution employed to reduce the water surface tension when testing on wet hard-surfaced floor materials.

3.11 Test Area - the physical space required for the testing apparatus to perform its primary function.

3.12 Tile Joint - the space between two (2) or more pieces of tile. This space may be filled or unfilled.

3.13 Traction - the friction between the sole material of a shoe and the fixed surface it moves upon.

3.14 Tribometer - an instrument or device specifically designed to measure the available level of traction upon a floor or walkway surface.

3.14.1 Approved Tribometer - a tribometer that is in compliance with the following criteria:

3.14.1.1 The tribometer shall demonstrate reliability and reproducibility in measuring the Dynamic Coefficient of Friction per the NFSI: Inter-Laboratory Study (ILS) for

Tribometers Designed to Measure the Wet Dynamic Coefficient of Friction (DCOF) of Common Hard Surfaced Walkways

3.14.1.2 The tribometer manufacturer shall be capable of providing calibration, repair, and maintenance, and a reference tile method for field performance verification, and other services necessary to ensure device reliability.

3.14.1.3 The tribometer shall be capable of providing a digital display of results for DCOF to the hundredths (two positions right of the decimal point) using a scale of 0.00 to 1.00 or greater.

Section 4: Test Procedure

This test procedure shall be conducted using an approved tribometer designed to measure the wet dynamic coefficient of friction (DCOF) of a floor or walkway surface under anticipated use. Materials that are excluded from this test method include: sand or gravel beds, pebbles, rough asphalt, any cloth or textile materials, or any surface that would inhibit the normal operation of the testing device.

4.1 Testing Device

This test method shall be carried out using a tribometer device that is fitted with SBR contact material that complies with the standard set forth herein. The tribometer manufacturer's operating and calibration directives shall be followed.

4.2 Measuring the Reference Check Tile

Follow the tribometer manufacturer's procedures for measuring the reference check tile(s). Report the results and verify that the values measured fall within + or - 5% of the reference check tile value(s).

4.3 Measuring the Wet DCOF of Uninstalled Flooring Material (Lab Procedure)

4.3.1 Randomly select three samples of the tiles or test areas under evaluation. Submitted samples shall be sized and formatted to enable laboratory testing of the DCOF.

4.3.2 Clean the test surface with a mild detergent and distilled water. Wipe dry with an untreated paper towel. Avoid contamination of test surfaces by fingerprints, chemicals dust, etc. Do not use "low lint", or "lint free" paper towels, as they may contain chemicals that can affect the DCOF test results.

4.3.3 Wet the test surface with a surfactant solution of 0.1 ± 0.005 percent sodium lauryl sulfate in distilled water. Follow the tribometer manufacturer operating instructions for performing wet DCOF testing.

NOTE: The test surface of the SBR material shall be maintained as to prevent buildup of contaminants which may affect the DCOF test results. Follow the tribometer manufacturer's instructions for conditioning the SBR material.

4.3.4 Place the measuring device on the test surface and conduct five (5) tests in one direction. Record all five DCOF readings.

4.3.5 Rotate the measuring device clockwise by 180 degrees, place it on the tiles and conduct five (5) tests in the second direction. Record all five DCOF readings.

4.3.6 Rotate the test surface clockwise by 90 degrees, place the measuring device on the tiles and conduct five (5) tests in the third direction. Record all five DCOF readings.

4.3.7 Rotate the measuring device clockwise by 180 degrees and conduct five (5) tests in the fourth direction. Record all five DCOF readings.

NOTE: Additional surfactant solution may be applied to the test surface as needed.

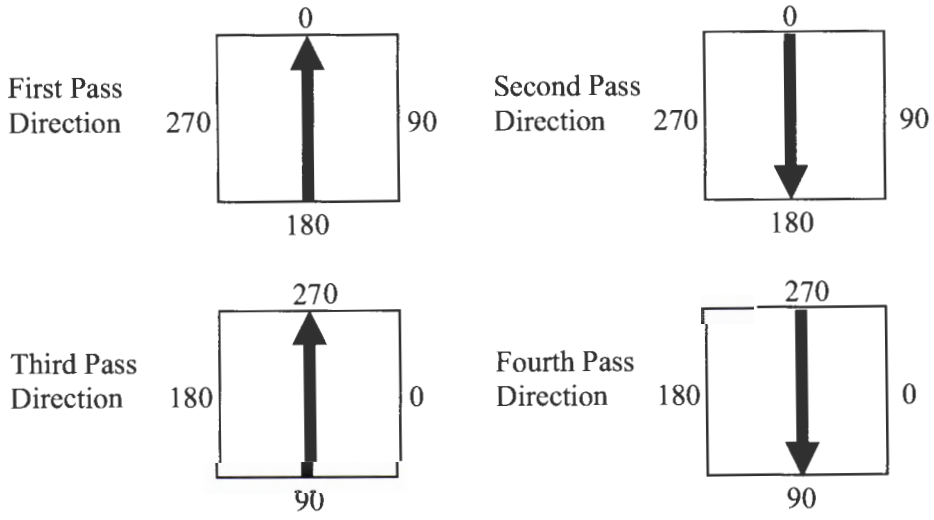
4.3.8 Repeat items 4.2.2 through 4.2.7 on three (3) separate tiles or test areas.

4.3.9 Calculate and record the average and sample standard deviation for all 60 readings taken from the three sample tiles or test areas (see computational instructions in appendix C.).

4.3.10 Divide the sample standard deviation by the average and record the coefficient of variation (COV) (see computational instructions in appendix C).

4.3.11 Evaluate the data set:

- If the COV is less than 0.10 (< 0.10), then evaluate the walkway's DCOF per the instructions set forth in section 5.0 of this standard.
- If the COV is greater than 0.10 (> 0.10), then reject the data set and re-test or correct the testing procedure and/or tribometer as required.



4.4 Measuring the Wet DCOF of Installed Flooring Material (In-Situ Procedure)

4.4.1 Select the Test Area - The floor/walkway surface area to be tested must be spacious enough to fully accommodate the normal operation of the testing device without restriction. Effort should be made to test each sample area using a minimum of two directions, 90 degrees apart; often referred to as an "X-Y" pattern. One of the tests should be performed in the direction of normal pedestrian traffic if possible. If a situation exists where both X-Y test directions prove impossible to perform, (such as a stairway step) the final test report should indicate the restricted test area. In no instance should a testing device be modified or manually "helped" to compensate for a difficult situation. This may include, but not be limited to; pushing, pulling, lifting, tilting, or other such manipulation methods. When testing on tiled floors, every attempt should be made to avoid testing directly on tile joints wherever possible.

4.4.2 Prepare the Contact Material - The test surface of the SBR material shall be maintained as to prevent buildup of contaminants which may affect the DCOF test results. Follow the tribometer manufacturer's instructions for conditioning the SBR material.

4.4.3 Create a wet test path using a surfactant solution of 0.1 ± 0.005 percent sodium lauryl sulfate in distilled water of sufficient length and width in accordance with the test device instructions for wet DCOF testing.

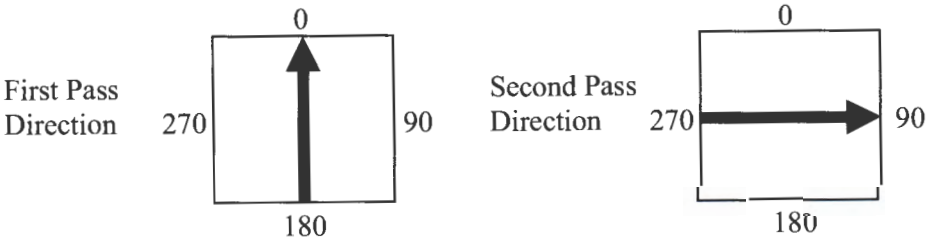
4.4.4 First Directional Test

4.4.4.1 Place the measuring device on the surface and conduct three (3) tests in one direction. Record the resulting DCOF values.

4.4.4.2 Dry the test surface by blotting with an untreated paper towel. Use care to not contaminate the surface condition.

4.4.4.3 Check the SBR testing material for contamination or deformation after each test and recondition per the device manufacturer directions if required.

4.4.5 Second Directional Test - Repeat the above procedure at a 90 degree angle rotated clockwise from the original test path.



4.4.6 Calculate the average for the six (6) readings collected from the test area.

4.4.7 Create upper and lower limit bounds of plus or minus 10 %, based upon the following:

- Lower Limit = Average – (Average X 0.10)
- Upper Limit = Average + (Average X 0.10)

4.4.8 Evaluate the six (6) readings relative to the upper and lower limit bounds established in 4.4.7 above:

- If all readings fall within the established limit bounds, accept the average and evaluate the walkway's DCOF per the instructions set forth in section 5.0 of this standard.
- If any readings fall outside of the established limit bounds, reject the test and re-test or correct the testing procedure and/or tribometer as required.

NOTE: If a test area surface exhibits an obvious directional bias or grain (such as a wood floor tile) the test should be conducted in four (4) directions, ninety (90) degrees apart.

Section 5: Calculations/Data Interpretation

Calculate the test result data in accordance with the testing device manufacturer's directions. The final test results shall be recorded as DCOF values on a linear scale from 0.00 to 1.00 μ_D.

Table 1.

Wet DCOF Value (μ_D)	Slip Resistance Potential	Action
>0.45 (inclines) >0.42 (level)	High - Lower probability of slipping	Monitor DCOF regularly and maintain cleanliness.
0.30 - 0.45 (inclines) 0.30 – 0.42 (level)	Acceptable - Increased probability of slipping	Monitor DCOF regularly and maintain cleanliness. Consider traction enhancing products and practices where applicable for intended use
< 0.30	Low - Higher probability of slipping	Seek professional intervention. Consider replacing flooring and/or coating with high traction products.

NOTE: It is important to note that these categories are not indicative of all possible conditions. There are numerous variables that may add to, or take from the available slip resistance potential of any given floor surface. (ie: type or style of footwear, types and frequency contaminants, pedestrian preoccupation, etc). These ranges were established based on research done in Europe utilizing empirical and mathematical techniques and were validated in the

laboratory and field through extensive testing with the following standardized methods: DIN 13287 - BST Tester; DIN 51130 – German Ramp; DIN 51131 – GMG 200 Tester. These values would be applicable to other test methods or devices which can produce an R correlation of greater than 0.80 to one of these three reference standards. . Data produced by tribometers which are not designed to measure wet DCOF do not necessarily correlate to the values listed in Table 1.

Section 6: Test Report

The Test Report shall include as a minimum:
6.1 types of floor or walkway materials tested
6.2 location(s) of test areas and sites
6.3 individual values for each area tested
6.4 average values for each area tested
6.5 description of areas tested (e.g. greasy, always wet, dusty, damaged tile, etc.)
6.6 copies of test results
6.7 signature of auditor / technician
6.8 value of reference check tile

Section 7: Safety & Environmental Information

7.1 Potential Hazards in Test Area Vicinity

Never leave a test area unattended. People may trip over objects left in the test area, even if they are obvious. Always wipe dry the residual solution left on a floor or walkway after each test, even if you plan on returning shortly. It is recommended to place a safety cone, barrier, or sign alerting personnel to the situation.

7.2 Testing Environment

The tribometer manufacturer instructions or procedures regarding temperature and humidity requirements for the proper operation and storage of the device shall be followed.

User Notes:

Appendix A

Note: To provide additional data/information this appendix offers significant reference materials. The documents and standards herein while in the broad subject area of slips, trips and falls, are not in the exact context or scope of the B101 standards series, but do suggest authoritative citations for this field of injury prevention. This appendix is not a part of the standard and is for informational purposes only.

Batterman, S.D. and Batterman, S.C. (2005) Biomechanical Analysis of Slip, Trip, and Fall Accidents. *Forensic Medicine of the Lower Extremity, Humana Press*

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Windhoevel, U. and Sebald, J. (2008) Study to determine the aptitude for checking the slip resistance of floors in consideration of the German Ramp Test. (DIN 51130). *University of Wuppertal, Germany.*

ATTACHMENT A

SBR Physical Specifications for ANSI/NFSI B101.3-2012 Test Method for Measuring Wet DCOF of Common Hard-Surface Floor Materials

TEST METHOD	STANDARD	VALUE	UNIT OF MEAS.
THICKNESS	N/A	4.0 ± 0.2	mm
DENSITY	DIN 53479	1.23 ± 0.2	g/cm^3
HARDNESS	DIN 53505	95 ± 3	SHORE A
TENSILE STRENGTH	DIN 53504	> 10	MPa
FLEXIBILITY	DIN 53504	> 250	%
WEARABILITY	DIN 53516	< 250	mm^3
ADHESION 2 MIN. @ 23 DEG. C	DIN 53273	> 1.0	N/mm
ADHESION 5 DAYS @ 23 DEG. C	DIN 53273	> 8.0	N/mm
TEAR STRENGTH	DIN 53507-B	> 12	N/mm

ATTACHMENT B

Sodium Lauryl Sulfate Surfactant Specifications for ANSI/NFSI B101.3-201X

Test Method for Measuring Wet DCOF of Common Hard-Surface Floor Materials

CHEMICAL NAME: Sodium Lauryl Sulfate
SOURCE: The Chemistry Store (www.thechemistrystore.com)
FORM: Liquid
SUPPLIED STRENGTH: 29% solution
CONTAINER SIZE: 1 US Gallon
CAS #: [151-21-3]
MOLECULAR FORMULA: $C_{12}H_{25}NaO_4S$
APPEARANCE: Hazy light yellow in color
SYNONYMS: Sodium Dodecyl Sulfate, Dodecyl Sodium Sulfate, SLS, Lauryl Sodium Sulfate, Sodium Laurylsulfate, Sulfuric Acid Monododecyl Ester Sodium Salt

Note: Dilute the 29% SLS down to 0.1% SLS. For example, to obtain 0.1% SLS mix 13 mL of 29% SLS with 1 gallon of distilled water.

NOTE:
The sole source of supply of the surfactant known to the committee at this time is:
The Chemistry Store (www.thechemistrystore.com)
1133 Walter Price St.
Cayce, SC 29033
Phone: 800-224-1430
Fax: 803-926-5389

If you are aware of alternative suppliers, please provide this information to NFSI B101 Standards Committee. PO Box 92607, Southlake, TX 76092.

ATTACHMENT C

Explanation of statistical methods employed for the measurement of DCOF.

1. **Sample Average** – A measure of central tendency, the sample average shall be calculated by summing all the observations and then dividing by the number of observations. The following formula is employed to calculate the sample average.

$$\overline{X} = \frac{\sum X_i}{n}$$

Where:
$\bar{X}$= Sample average
$\sum$ = Summation
X_i = A single observation
N = Total number of observations

If using Microsoft Excel™, the average may be simply calculated using the averaging function. This process is described in figure 1.

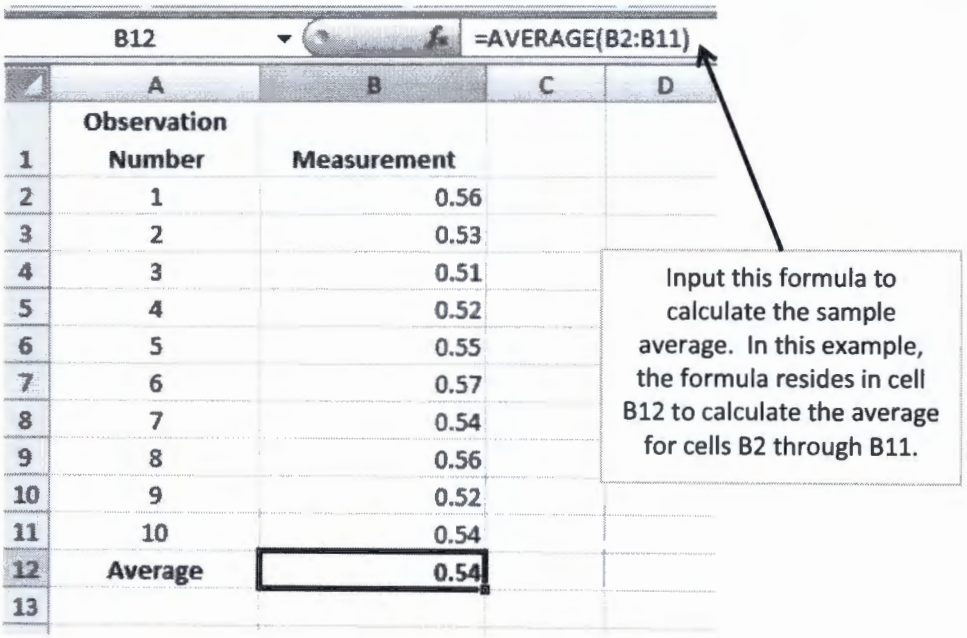


Figure 1 - Instructions for calculating the sample average using Microsoft Excel™.

2. **Sample Standard Deviation**. A measurement of dispersion, the sample standard deviation is more mathematically complex to calculate by hand. The following formula is employed to calculate the sample standard deviation.

$$s = \sqrt{var} = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n-1}}$$

Where:
S = Standard deviation
Var = Variance
Σ = Summation
X = A single observation
$\bar{X}$ = Sample average
N = Total number of observations

While the formula is complex, the standard deviation is very easy to calculate in Microsoft Excel™. This process is described in figure 2.

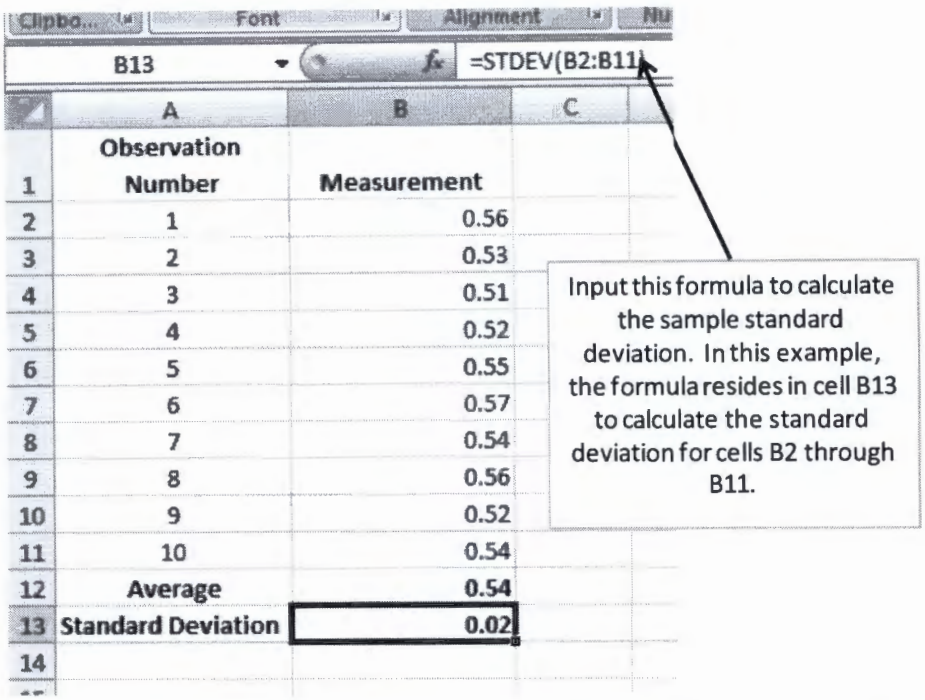


Figure 2 - The sample standard deviation, while complex to compute by hand, may be easily computed using a standard function in Microsoft Excel™.

3. **Coefficient of Variation**. The coefficient of variation is simply the standard deviation divided by the sample average. It too can be very easily computed in Microsoft Excel™. This process is illustrated in figure 3.

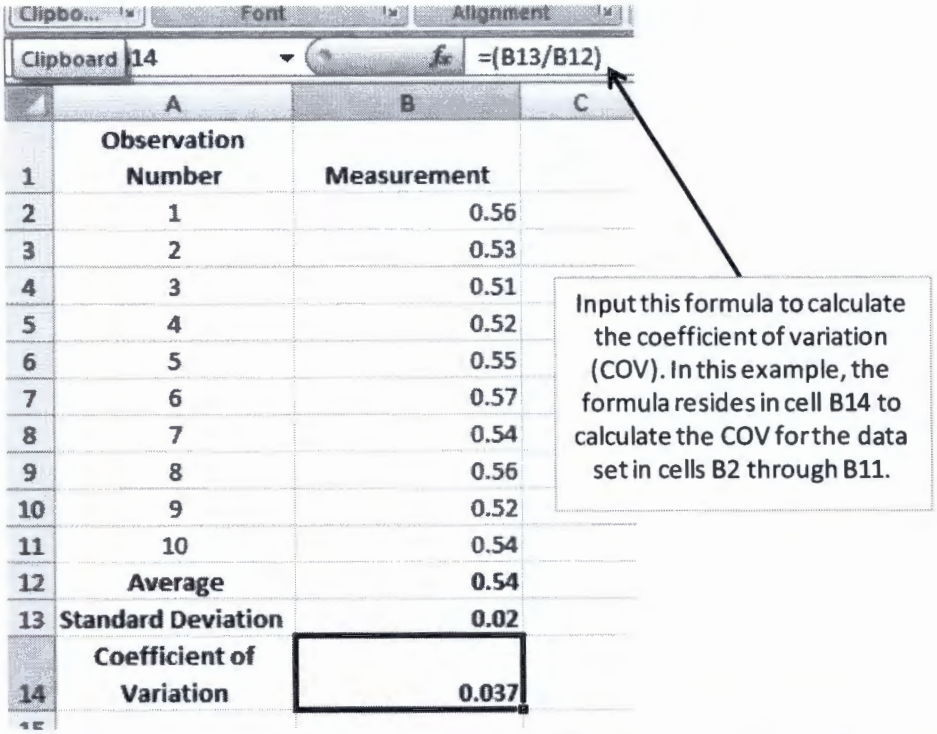
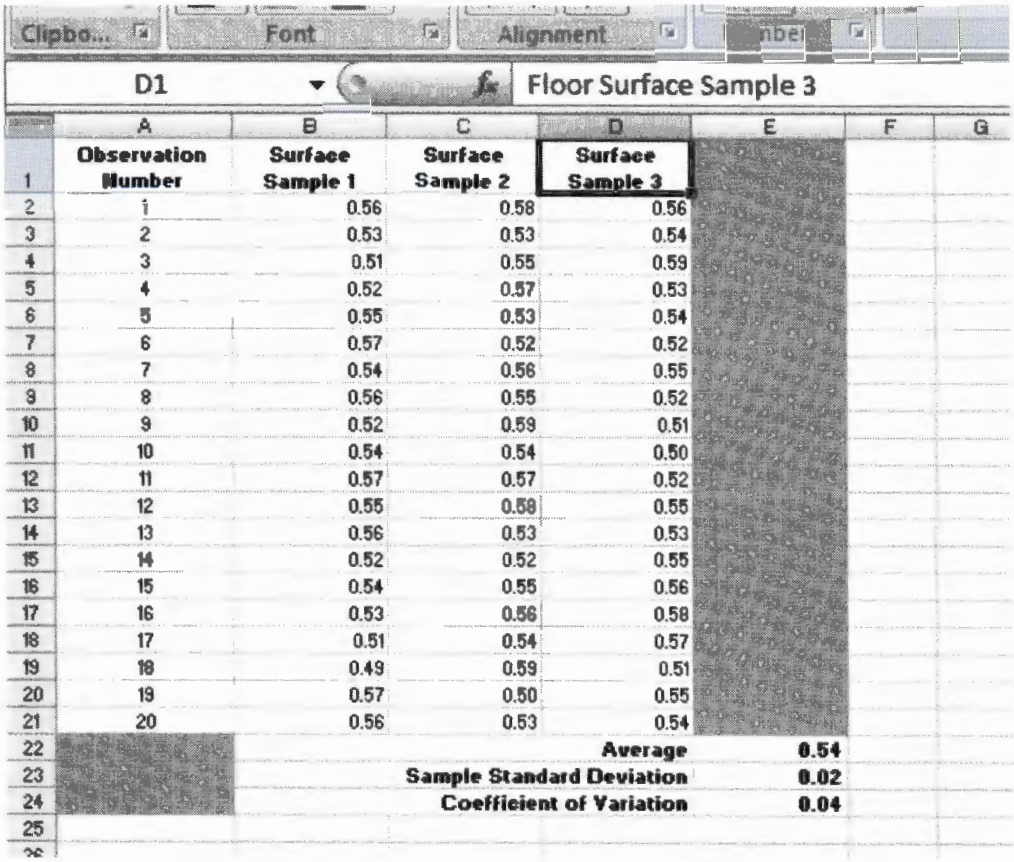


Figure 3 - Figure three illustrates the process for calculating the coefficient of variation using Microsoft Excel™.

A worked example for a data set evaluated in the laboratory for common hard surface flooring is illustrated in figure 4.



	A	B	C	D	E	F	G
1	Observation Number	Surface Sample 1	Surface Sample 2	Surface Sample 3			
2	1	0.56	0.58	0.56			
3	2	0.53	0.53	0.54			
4	3	0.51	0.55	0.59			
5	4	0.52	0.57	0.53			
6	5	0.55	0.53	0.54			
7	6	0.57	0.52	0.52			
8	7	0.54	0.56	0.55			
9	8	0.56	0.55	0.52			
10	9	0.52	0.59	0.51			
11	10	0.54	0.54	0.50			
12	11	0.57	0.57	0.52			
13	12	0.55	0.58	0.55			
14	13	0.56	0.53	0.53			
15	14	0.52	0.52	0.55			
16	15	0.54	0.55	0.56			
17	16	0.53	0.56	0.58			
18	17	0.51	0.54	0.57			
19	18	0.49	0.59	0.51			
20	19	0.57	0.50	0.55			
21	20	0.56	0.53	0.54			
22				Average	0.54		
23				Sample Standard Deviation	0.02		
24				Coefficient of Variation	0.04		
25							

Figure 4 - Illustration of evaluating a data set using Microsoft Excel™.

Falls Free®: 2015 National Falls Prevention Action Plan

National Falls Prevention Resource Center

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National Council on Aging

About the National Council on Aging (NCOA)

Who We Are

National Council on Aging

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Center for Healthy Aging

Center for Healthy Aging

NCOA's Center for Healthy Aging supports the expansion and sustainability of evidence-based health promotion and disease prevention programs in the community and online through collaboration with national, state, and community partners. The goal is to help older adults live longer and healthier lives. The Center houses two national resource centers: the National Falls Prevention Resource Center and the National Chronic Disease Self-Management Education (CDSME) Resource Center. Learn more at *ncoa.org/CenterforHealthyAging*.

National Falls Prevention Resource Center

NCOA's National Falls Prevention Resource Center supports the implementation, dissemination, and sustainability of evidence-based falls prevention programs and strategies across the nation. The Center increases public awareness and educates consumers and professionals about the risks of falls and how to prevent them, and serves as the national clearinghouse of tools, best practices, and other information on falls prevention. The Center is supported by a grant from the U.S. Administration for Community Living/Administration on Aging. Learn more at *ncoa.org/FallsPrevention*.

Falls Free® Initiative

Falls Free

National Council on Aging

The Falls Free® Initiative is a national effort led by NCOA to address the growing public health issue of falls and fall-related injuries and deaths in older adults. The initiative includes a National Action Plan; National Coalition; State Coalitions on Fall Prevention Workgroup with 43 state members; numerous advocacy, awareness, and educational initiatives; and community infrastructure building to reduce falls among the elderly.

Falls Free®: 2015 National Falls Prevention Action Plan

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Executive Summary

Falls present a real and growing risk to older adults' health and independence—and to their very lives. Many falls can be prevented, and experts are working to engage health care and aging network professionals, older adults and caregivers in prevention efforts.

According to the Centers for Disease Control and Prevention (CDC), falls are the leading cause of injuries among older adults, causing severe injuries such as hip fractures and head trauma as well as death. Injuries and fear of falling also significantly limit older adults' independence. Falls result in significant costs; the direct health care costs attributed to fall-related injuries totaled $34 billion in 2013.

A decade ago, the National Council on Aging (NCOA) led development of an evidence-based national falls prevention action plan. The 2005 plan, *Falls Free®: Promoting a National Falls Prevention Action Plan*, focused its goals and strategies on key risk factors – physical mobility, medications management, home safety and environmental safety—as well as cross cutting issues. While substantial progress has been made in falls prevention efforts over the past 10 years, gaps and challenges remain to stem the tide of this growing public health problem.

Falls Prevention Summit, a 2015 White House Conference on Aging Event

The 2015 White House Conference on Aging (WHCOA)—as it marked the 50th anniversary of Medicare, Medicaid, and the Older Americans Act and the 80th anniversary of Social Security—was a time to look ahead to the issues that will help shape the landscape for older Americans for the next decade. One of those issues was falls prevention, an important component to Healthy Aging, which was one of the four major themes for the 2015 WHCOA.

The WHCOA provided a welcome opportunity to revisit and update the 2005 Falls Free® National Action Plan and assess progress, successes, and gaps. To begin this effort, NCOA's National Falls Prevention Resource Center conducted a survey of key stakeholders to determine falls prevention gaps, opportunities and priorities and then convened a Falls Prevention Summit on April 30, 2015 to capture goals, strategies and action steps for moving forward. The Summit from which the 2015 National Action Plan grew focused on the same risk factors as the 2005 plan and evidence-based falls prevention programs for community-dwelling older adults. In addition, discussions centered on funding and reimbursement, expansion of evidence-based programs, public policy and advocacy, and public awareness and education.

The Summit engaged multiple stakeholders in this effort. Nationally recognized experts in falls prevention, organizations from the health and aging sectors, select federal and state agencies, professional associations, corporations and foundations that have an interest in healthy aging were invited to attend, think through solutions, and contribute to the new plan. The recommendations and strategies from the Summit participants were the foundation for the updates to the 2005 Falls Free® National Action Plan.

2015 National Falls Prevention Action Plan

Purpose: The updated National Falls Prevention Action Plan provides the framework for action for falls prevention across the nation. The Plan envisions older adults experiencing fewer falls and fall-related injuries, maximizing their independence and quality of life. The purpose of the National Falls Prevention Action Plan is to implement specific strategies and action steps to affect sustained initiatives that reduce falls among older adults. Further, the 2015 National Falls Prevention Action Plan is intended to help accomplish the falls prevention-specific Healthy People 2020 objective to reduce the rate of emergency department visits due to falls among older adults by 10%.

Goals, Strategies and Action Steps: The updated Plan includes 12 broad goals, 40 strategies and over 240 action steps focusing on increasing physical mobility, improving medication management, enhancing home and environmental safety, increasing public awareness and education, and funding and expansion of falls risk screening, assessment, and interventions to prevent falls. The Plan leverages the past 10 years of advancement in falls prevention, addresses gaps, and integrates new opportunities, such as those resulting from the Patient Protection and Affordable Care Act.

Audience: NCOA's National Falls Prevention Resource Center is leading the effort to disseminate the 2015 National Falls Prevention Action Plan to an array of stakeholders from the public and private sectors with an interest in healthy aging and the capacity to implement action steps outlined in the plan. Similar to those invited to the Summit, implementation partners include professionals in the health care and aging fields, federal and state agencies, professional associations, consumer and caregiver organizations, state and local falls prevention coalitions corporations, and foundations.

Implementation: The 2015 National Falls Prevention Action Plan is intended to be a framework for action over the next five to 10 years. As the lead entity in moving the plan forward in a strategic way, NCOA's National Falls Prevention Resource Center is using the opportunity to advance the field. The Resource Center is poised to educate and engage various sectors, partners, and stakeholders to implement specific action steps of the 2015 National Falls Prevention Action Plan. Steps that the National Falls Prevention Resource Center will engage in are the following:

- Broadly disseminate the plan through multiple channels, including posting on NCOA's and partner websites, presenting at national and state conferences, and sharing the plan with state falls prevention coalitions and strategizing with them on implementation approaches.
- Encourage ownership and adoption of the 2015 National Falls Prevention Action Plan's strategies and action steps by key national stakeholder organizations that address issues related to older adults, their health and wellness.
- Collaborate with and involve key stakeholder organizations to further disseminate and implement the strategies and action steps.
- Seek funding to support key strategies, alone or in conjunction with stakeholder organizations.
- Partner with and/or advise organizations to support public policy and advocacy initiatives related to the reduction of falls risk factors and falls prevention.
- Track progress by identifying national and state initiatives related to the implementation of the plan's strategies and action steps and their outcomes.
- Develop follow-up report three years after the 2015 National Falls Prevention Action Plan is released to summarize action taken or underway related to these strategies.

I. Setting the Stage

Facts about Falls

Falls present a real and growing risk to older adults' health and independence—and to their very lives. Many falls can be prevented, and professionals working in falls prevention are making headway in pinpointing and implementing measures that work. The startling facts around older adult falls are presented below.[1]

Falls among older adults are common:

- Millions of people age 65 and older fall each year—one out of three in this age range.[2]
- Falls are the leading cause of both fatal and nonfatal injuries among older adults, causing severe injuries such as hip fractures, head trauma, and death.[3]
- Every 13 seconds an older adult is seen in an emergency department (ED) for a fall. In 2013, about 25,500 older adults died from unintentional fall injuries, 2.5 million were treated in emergency departments for nonfatal falls, and more than 734,000 were hospitalized.[4]
- Older adults are hospitalized for fall-related injuries five times more often than for injuries from other causes.[5]

Falls significantly affect independence:

- Among people who fall, 20 to 30% suffer moderate to severe injuries such as lacerations, hip fractures, and head traumas.[6,7] These injuries can make it difficult to get around or live independently, and they increase the risk of early death.
- From 2006 to 2010, falls were the leading cause of traumatic brain injury (TBI), accounting for 40% of all TBIs in the United States that resulted in an ED visit, hospitalization, or death. More than two-thirds (81%) of TBIs in adults aged 65 and older are caused by falls.[8]
- Many people who fall, even if they are not injured, develop a fear of falling.[9] This fear may cause them to limit their activities, which leads to reduced mobility and loss of physical fitness, and in turn increases their actual risk of falling.[10]
- People age 75 and older who fall are four to five times more likely than those age 65 to 74 to be admitted to a long-term care facility for a year or longer.[11]

Costs are high:

- In 2013, the direct medical costs of falls, adjusted for inflation, were $34 billion.[12]
- On average, the hospitalization cost for a fall injury tops $35,000.[13]

Summary of Past Work

NCOA brought falls prevention to the forefront in December 2004 when it launched a two-day Falls Free® Summit. The participants, representing 57 diverse organizations, provided strategic direction to develop *Falls Free®: Promoting a National Falls Prevention Action Plan*.[14] Archstone Foundation and the Home Safety Council provided funding for the Summit, and CDC provided funding for the National Action Plan's publication.

Now, one decade later with the new National Falls Prevention Action Plan, the field is celebrating its achievements, while recognizing the very real needs that still exist, and outlining the work that will yield even bigger gains.

2005 Falls Free® National Action Plan

In March 2005, NCOA, in collaboration with Archstone Foundation and the Home Safety Council, released the landmark evidence-based national action plan to prevent falls in older adults. *Falls Free®: Promoting a National Falls Prevention Action Plan* was published as a consensus document from a two-day summit of many of the nation's leading experts in fall prevention. It served as a national blueprint, describing what should be done to reduce the growing number of falls and fall-related injuries among older adults.

The 2005 National Action Plan was intended to be a call to action, a way to initiate collaboration among multiple stakeholders, and a guide for implementing an effective, coordinated approach to preventing older adults' falls.

The Falls Free® Coalition, consisting of summit attendees, was created to promote and implement the National Action Plan's strategies.[15] Since 2005, the Plan and Falls Free® Coalition activities have been serving as resources and catalysts for action. The National Action Plan has been used to support grant and research applications and funding of community-based falls prevention programs. It served as the guiding document for state and local falls prevention coalitions and as the basis of the Safety of Seniors Act of 2007, now PL 110-202.[16]

2007 Progress Report

Between November 2006 and April 2007, Falls Free® Coalition members were surveyed to identify activities conducted since the National Action Plan's release that advanced one or more of the plan's strategies in the areas physical mobility, medications management, home safety, environmental safety in the community and cross-cutting issues. The *Making a Difference: Progress Report on the Falls Free® National Action Plan* shared the results, identified gaps in progress, and provided suggestions for future fall prevention initiatives.[17] Archstone Foundation provided funding.

2008 National Advisory Group Recommendations

In early March 2008, NCOA convened the National Advisory Group to the Falls Free® Initiative to review the Initiative's progress and help set Falls Free® priorities for the next two to three years. NCOA and its funding partners (Archstone Foundation, the U.S. Administration on Aging, and the CDC) were seeking recommendations from the Group's members. Group members reviewed the *National Action Plan* and *Making a Difference: Progress Report on the National Action Plan* and reached a consensus on five overarching, urgent recommendations, which are detailed in *National Falls Free® Initiative: Report from the National Advisory Group Strategic Planning Meeting*.[18]

2015 Falls Prevention Summit and National Falls Prevention Action Plan

The 2015 National Falls Prevention Action Plan continues a long line of fall prevention efforts over the past decade, including the development and implementation of evidence-based falls prevention programs, as well as education and training for health care professionals, the aging network, and other community-based providers. The updated plan provides further progress toward fewer falls and more older adults living healthier, safer lives. Similar to the 2005 Falls Free® National Action Plan, the overarching vision and goal for this initiative are:

- **Vision**: Older adults will have fewer falls and fall-related injuries, maximizing their independence and quality of life.
- **Goal:** To implement a National Action Plan with specific goals and strategies to effect sustained initiatives that reduce falls among older adults.

Furthermore, the 2015 National Falls Prevention Action Plan is intended to help accomplish the falls prevention-specific Healthy People 2020 objective to **"reduce the rate of emergency department visits due to falls among older adults by 10 percent."**[19]

The National Council on Aging's Falls Prevention Summit (Summit) focused on evidence-based falls prevention and risk reduction initiatives for community dwelling older adults. The agenda was guided by the four primary fall prevention risk factors: physical mobility, medications management, home safety, and environmental safety in the community.

Summit invitations were sent to nationally recognized organizations, agencies, professional associations, consumer and caregiver organizations, corporations and foundations that have an interest in healthy aging. More than 110 experts in falls prevention participated, and ample time was provided during the Summit for dialogue and interaction.

A remarkable group of speakers laid the framework for Summit discussions (see Appendix E for the Summit agenda). Summit participants attended two, one-hour breakout sessions to update the goals, strategies, and action steps of the 2005 National Action Plan. To inform the breakout groups, NCOA administered a pre-Summit survey with key stakeholders to identify significant falls prevention accomplishments over the past five years; gaps, opportunities, and priorities for addressing falls prevention; and roles that stakeholders can play in advancing falls prevention priorities. Based on the responses, six breakout groups were identified for the Summit:

- Clinical Care, including Medications Management and Clinical-Community Linkages
- Environmental Safety in the Community and Home Safety
- Expansion of Falls Prevention Initiatives and Evidence-Based Programs
- Funding and Reimbursement for Evidence-Based Falls Prevention Programs, including opportunities as a result of the Affordable Care Act
- Physical Mobility
- Public Awareness and Education

Summit participants were assigned to each breakout group based on their subject matter expertise and preference. Experienced facilitators and recorders enhanced the group processes. During the

first breakout session, participants identified important gaps and opportunities that should be addressed during the next five years. The second breakout session focused on prioritizing the opportunities, and identifying strategies and action steps to move the opportunities forward.

The following pages present the revised goals, strategies and action steps recommended by Summit participants. These recommendations can be implemented by stakeholders to create a collaborative, comprehensive, and coordinated effort to reduce falls among older adults.

The updated plan provides the framework for action for falls prevention across the nation.

II.

Falls Free®: 2015 National Falls Prevention Action Plan

Goals, Strategies, and Action Steps

A. Physical Mobility

Goal A:
All older adults will have knowledge of, and access to, effective programs and services that preserve or improve their physical mobility and lower the risk of falls.

Strategy 1

Shift public educational messaging to a positive, healthy living/wellness message. Promote physical mobility as a means to support living independently rather than only preventing falls.

Action Steps

1. Use the Medicare Annual Wellness Visit as a pathway to wellness; encourage practitioners to talk with patients about their health and wellness desires and use CDC's STEADI (Stopping Elderly Accidents, Deaths and Injuries) toolkit to screen, assess, and intervene to reduce patients' fall risk.
2. Empower older adults to engage in activities of their choice that are effective at reducing falls, increasing mobility and improving overall health, such as the National Institutes of Health *Go4Life* physical activity and exercise campaign for older adults and Tai Ji Quan: Moving for Better Balance. Promote low-cost examples of physical activity, such as gardening, walking outdoors and mall walking, and playing video games with balance platforms.
3. Engage older adults with a person-centered approach on the readiness-to-change scale. Provide education on the importance of physical mobility through TV, radio, newspaper, social media and classes to help engage older adults in their contemplative stages.
4. Consider exercise as a vital sign, and encourage practitioners to ask questions about patients' exercise levels during all routine medical appointments.
5. Engage role models to model how to age well.
6. Develop algorithms for recommendations to refer older adults to programs that are appropriate for their levels of physical mobility. Provide practitioners with the training and tools needed to make appropriate referrals, and not cause injuries and pain.
7. Reach specific audiences such as Baby Boomers, adult children/caregivers of older adults, diverse populations, and other target groups with tailored messaging, and emphasize that falls prevention is one additional benefit to moving more.
8. Support expansion of the White House's "Let's Move" effort to include intergenerational activities.
9. Ensure that all messaging is culturally-appropriate by involving target audiences in the translation.
10. Recognize that a growing number of grandparents are either primary caregivers or are living with grandchildren. Encourage safe activities for grandparents and grandchildren to do together, such as well-chosen video games (standing, active), swimming, using all-abilities playgrounds, walking, etc.
11. Partner with the National Physical Activity Plan and Healthy People 2020 and encourage inclusion of older adults in their activities.
12. Encourage and support walkable environments.

Strategy 2

Develop mechanisms for recognizing and disseminating evidence-based physical mobility programs.

Action Steps

1. Refine and disseminate criteria for determining appropriateness of programs across different levels of falls risk.
2. Disseminate criteria and procedures for recognizing new evidence-based programs.
3. Develop a website where organizations can submit applications for their programs to be recognized.
4. Develop quality assurance mechanisms for identifying key components of programs or services.
5. Address program cost issues by identifying effective quality, free or low cost programs or activities and/or self-directed, home-based programs.

Strategy 3

Develop culturally sensitive community-based resource directories and guidelines that direct older adults to physical mobility programs and services that match their abilities and needs.

Action Steps

1. Develop a common template for the communication of program information.
2. Develop quality assurance measures related to components needed in programs or services.
3. Develop a web-based dissemination plan for directories and guidelines.
4. Expand the definition and availability of low cost or reimbursable transportation (such as Uber) so that older adults who can no longer drive or have no transportation can more readily attend evidence-based programs.

Strategy 4

Expand the reach of programs across diverse populations and stakeholders.

Action Steps

1. Emphasize a lifespan/intergenerational approach.
2. Strategically develop new public-private partnerships to reach diverse populations.
3. Review fall risk parameters for diverse populations.
4. Modify and customize evidence-based risk and fall prevention programs to reach diverse populations.
5. Develop and adapt programs for a new generation of baby boomers/older adults.
6. Find partners for program dissemination, such as magazines targeting the older adult audience, talk-show hosts, companies with safety products, etc.

Goal B:
Health care and other service providers will be more aware of, and actively promote, strategies and community resources/programs designed to improve older adult physical mobility and lower the risk of falls.

Strategy 1
Create a national web-based clearinghouse for health and wellness professionals and aging services providers that includes credible information related to physical mobility and falls reduction and prevention.

Action Steps

1. Collect resources and information from professionals with expertise in physical mobility and falls prevention as a key step in creating a web-based clearinghouse.
2. Collect and evaluate toolkits for health care professionals to facilitate the incorporation of physical mobility programs into practice. Identify gaps and create new toolkits, or expand existing ones, as needed.
3. Establish links among health care professionals, health care provider systems and the community so that health care professionals are better able to make referrals to appropriate community resources.

Strategy 2
Provide health care and aging service providers with the knowledge and skills to evaluate physical mobility and make appropriate recommendations.

Action Steps

1. Work with health systems to collect data and conduct cost-benefit analyses to determine the cost-effectiveness of conducting annual fall risk assessments.
2. Educate healthcare providers on STEADI toolkit materials that can improve their ability to measure their patients' physical mobility and intervene to reduce fall risk.
3. Raise the awareness of effective physical mobility interventions among medical and other service providers.
4. Develop and disseminate strategies for incorporating physical mobility into multifactorial fall risk assessment and management interventions.
5. Identify providers who can implement or encourage cross-referral and collaboration across complementary provider group disciplines.
6. Conduct systematic analysis of existing knowledge relative to the assessment of physical mobility and best practice programs.
7. Publicize available quality-based provider incentives (e.g., coding, compensation, reimbursement).
8. Educate providers on simple ways to incorporate effective falls prevention and intervention strategies into practice.
9. Develop evidence-based educational modules for physical mobility that are specific to different provider groups.
10. Develop training for health care professionals and aging network service providers in the use of physical mobility assessment tools and treatment programs.
11. Promote the STEADI toolkit as a way to refer older adults into appropriate community fall prevention programs.

Strategy 3

Develop a mechanism for assisting local communities in the development of action plans for services and programs related to physical mobility that are culturally sensitive and relevant to their community.

Action Steps

1. Engage public and private groups (e.g., retail, senior services, medical, housing) to help them understand the importance of their role in promoting awareness of physical mobility programs and services for older adults.
2. Develop models or toolkits for local community use.
3. Identify local champions and engage them in falls prevention efforts.
4. Identify and develop a web-based dissemination plan.

Strategy 4

Build a more inclusive database of stakeholders and keep them updated with information they can share with their constituents.

Action Steps

1. Encourage every group of stakeholders to link to at least one other association on a yearly basis in a meaningful collaboration. Discuss how to make a significant difference in addressing falls prevention in three to five years in a collective initiative; include goals and action items. Identify important roles for each group to play by looking at all the parts of the complex problem.
2. Engage federal agencies, for-profit, and non-profit organizations, and organizations such as the American Public Health Association that cut across various stakeholder groups; target joint annual conferences, joint messaging and combined social media as starting points.
3. Initiate a regularly scheduled national fall prevention interdisciplinary conference.
4. Pursue partnerships with those who are addressing risk factors that are identified in the STEADI toolkit. Frame as an opportunity for partners to open new venues, reach more diverse populations for best practice dissemination, and promote messaging.
5. Build upon and expand the Falls Free® member database and coalitions.

B. Medications Management

Goal A:
All older adults will become aware that falling is a common adverse effect of some prescription and nonprescription medications and discuss these effects with their health care provider.

Strategy 1

Increase the numbers of adults who have a medication review conducted by a qualified health care provider, such as a pharmacist, at least on an annual basis, and insure this review includes an adequate focus on falls and fall-related injury prevention, with the goal of reducing, altering, or eliminating medications that increase falls risk.

Action Steps

1. Encourage consumers to ask pharmacists, nurses or doctors about falls risks associated with medications and which medications might be reduced, eliminated or switched to safer alternatives.
2. Educate and encourage healthcare providers to review medications and to stop, switch, or reduce the dosage of medications that increase fall risk.
3. Develop clinical decision support for electronic health record systems that assists providers in optimizing their patients' medications to reduce fall risk.
4. Work with health systems to collect data and conduct cost-benefit analyses to determine the cost-effectiveness of optimizing patients' medications to reduce fall risk.
5. Collaborate with the Centers for Medicaid and Medicare Services (CMS) and Medicare Part D Prescription Drug Plans to review the expansion of Medication Therapy Management Services to incorporate medication reviews for falls risk reduction.
6. Work in partnership with CMS and physician associations to promote increased utilization of the Medicare Wellness Visit and develop guidance on best approaches to medication reviews as part of the Medicare Wellness Visit.
7. Identify best practices regarding pharmacist medication reconciliation at points of care transitions and disseminate best practices to health care systems for replication.

Strategy 2

Conduct a strategically planned consumer education campaign to increase awareness of falls risks associated with medication use (prescription and nonprescription medications).

Action Steps

1. Create a public education plan to inform older adults and caregivers about the risk of side effects from medications and the need for at least an annual review and modification of medications by qualified health care providers.
2. Leverage opportunities with the National Council on Patient Information and Education related to public education and an annual medication review for older adults.
3. Implement a "24-hour nurse or pharmacist information line" for the general public with a falls prevention module.
4. Utilize appropriate media channels to communicate the falls risk of medications to consumers.
5. Provide support and guidance to older adults to talk to their health care providers to

reduce or eliminate the use of medications that are associated with falls risk, including providing them with information on alternatives to high risk medications.
6. Involve pharmacists, nurses, physicians and older consumers in market research to identify effective messaging and to discern what would help older adults take medications appropriately.
7. Utilize interaction with pharmacists to provide consumers with information on falls risk associated with medication, as well as potential benefits of some medications in reducing fall-related injury risk.
8. Develop and implement a pharmacy based "sticker" program to identify falls risk associated with medications.

Strategy 3

Assure that falls self-management programs include a component on medications use and falls risk.

Action Steps

1. Disseminate information about consumer technology to help consumers more effectively manage their medications, e.g., easy to use apps and adherence devices.
2. Add a falls awareness component to existing patient education efforts.
3. Collaborate with groups, agencies, and projects that focus on medications management and engage them as consumer advocates for medication management.
4. Work with the Food and Drug Administration (FDA) to pursue the development of appropriate medication patient package inserts and medication guides that address falls and fall-related injuries in a concise and understandable manner and that are graphically appropriate for midlife and older adults.

Strategy 4

Develop strategies to empower older adults and family members to take responsibility for medications management.

Action Steps

1. Educate consumers on how to more effectively communicate with their health care providers, including a focus on the types of questions they should ask.
2. Encourage older adults to identify an individual health care professional to help them manage their medications.
3. Educate older adults about postural hypotension and its association with falls and develop strategies for empowering older adults to request postural hypotension assessments from their health care providers.
4. Incorporate information related to evaluation of medications and falls risk on health care organizations' consumer websites.
5. Disseminate existing self-assessment tools related to medications that older adults can complete and take to their health care providers.
6. Provide support and tools to family caregivers so they better understand medication management related to falls and fall-related injuries.
7. Distribute consumer-targeted falls risk assessment tools and information through pharmacies.

Goal B:
Health care providers will be aware that falling is a common adverse effect of some prescription and nonprescription medications, and therefore will adopt a standard of care that balances the benefits and harms of older adult medication use.

Strategy 1
Support health care provider efforts in the implementation of periodic medication review and modifications prior to each new prescription that is written for an older adult.

Action Steps

1. Work with electronic health record vendors to develop medication review prompts that guide the provider in optimizing their patients' medications for overall health and fall risk reduction.
2. Improve communication between pharmacists and prescribing healthcare providers.
3. Review current tools and existing efforts for health care provider medication review and modification and identify best practices.
4. Assess the emphasis on falls and make adaptations as appropriate.
5. Involve home care providers in the front-line assessment of adverse medication affects through the use of simple medication risk assessment tools.
6. Develop demonstration projects for the management of postural hypotension and insomnia.
7. Develop and disseminate strategies for incorporating medication review and management into multifactorial fall risk assessment and management interventions.
8. Disseminate multifactorial fall risk assessment and management strategies, such as CDC's STEADI Tool Kit, to health care providers that includes medication review and reduction.

Strategy 2
Develop a systematic method for predicting how various combinations of medications interact with patient characteristics to increase risk of falls, and then add to existing pharmacy software to check for drug interactions and contraindicated medications.

Action Steps

1. Support the development, implementation and dissemination of information technology for medication management to reduce risk of falling among older adults and provide financial incentives to adopt those systems.
2. Develop and disseminate algorithms through information packets, clearinghouses, conferences, and medical journals and clinical practice guidelines.
3. Identify cost effective models of electronic medical record systems that support risk assessments related to medications management.
4. Support expansion of the use of computerized physician order entry system. Insure that all health care professionals are encouraged to utilize electronic health records.
    a. Develop patient centered smart systems for electronic tracking of medication use in hospitals.
    b. Develop a database of medications that patients were taking near the times of falls and identify the risk of specific medication and/or medication combinations.

c. Provide medical professionals with education related to the importance of information technology tools. Address training and technical assistance needs so professionals will know how to use the technology tools in their clinical practices.
d. Identify opportunities to partner with foundations and other grant-making organizations to make information technology tools available to communities and health care settings in which resources are limited.

Strategy 3

Improve the education of health care professionals regarding the adverse effects of some medications in relation to increased fall risks among older adults, and about the correct use of medications that can reduce the risks of fractures due to falls for older adults.

Action Steps

1. Develop communication strategies to provide information to all health care providers on different uses of medications and why people take them. Include information about how different medications relate to different falls risk, as well as information on medications that are related to falls and fall-related injury prevention.
2. Develop a regularly updated research-based education system that is available via the Internet, which offers information about specific prescription and nonprescription medications and associated risk of falling.
3. Identify and analyze the current medication management tools related to falls management.
4. Incorporate attention to falls prevention in curricula related to medications and pharmacology in medical schools, allied health education, and health care professional continuing education.
5. Educate healthcare providers and pharmacists on CDC's STEADI Tool Kit materials that address ways to optimize older adults' medications to reduce fall risk.

Strategy 4

Maximize the opportunity to address falls issues as part of the Medication Therapy Management Services within the Medicare Part D benefit.

Action Steps

1. Work with Part D prescription drug plan providers to assist them in information dissemination and patient education efforts regarding falls risk associated with medications.
2. Promote experts in geriatrics and geriatric pharmacotherapy to serve are on Part D prescription drug plan advisory boards.
3. Develop a plan for health care providers to monitor and report fall-related adverse effects, e.g., postural hypotension and drowsiness.
    a. Develop education materials on falls risks associated with medications, and outline non-pharmaceutical options that health care providers can consider for treatment of older adults, in order to reduce falls risk.
    b. Identify and disseminate information related to reimbursement opportunities for prescription review.

C. Home Safety

Goal A:
All older adults will have knowledge of and access to effective home safety measures (including information, assessments, and home modifications) that reduce home hazards, improve independent functioning, and lower the risk of falls.

Strategy 1

Raise awareness and disseminate information about home safety practices and options for caregivers and older adults to reduce falls.

Action Steps

1. Identify credible and culturally sensitive training and education resources where older adults and caregivers can access information on home modification and safety. Make these resources available at senior centers, libraries, faith-based organizations, and other community-based sites, and websites targeted to older adults and caregivers.
2. Provide caregivers and family members with guidance on how to discuss the need for home modifications and where to locate resources for older adults, particularly for high risk groups such as persons with dementia, visual impairments, and mobility limitations as well as individuals with low income and those living in rural areas.
3. Educate consumers on their rights regarding home modification, with a focus on renters.
4. Include information about home modification and home safety in pre-retirement planning and reverse mortgage seminars and materials.
5. Publish a list of "aging-friendly" home builders and remodelers who have completed home safety/home modification training, such as the National Association of Home Builders' Certified Aging in Place Specialist, and disseminate it to local agencies and organizations that work with older adults.
6. Develop and promote standards related to product safety, service quality, skill level of home modification providers, and expected outcomes to assist consumers in making informed decisions about home safety.

Strategy 2

Identify funding sources and community-based resources to assist older adults in accessing home assessments and making appropriate modifications.

Action Steps

1. Disseminate information about current funding sources for home assessments and modification (e.g., Medicaid, Community Development Block Grants, Older Americans Act programs, various loan programs, long term care insurance policies) and organizations that can provide them at low-cost or no-cost (e.g., Rebuilding Together).
2. Locate or create buyer guides and disseminate "desirable home feature" checklists that also include information about the costs of modifications.
3. Inform older adults and professionals about eligibility and coverage criteria for those programs providing home modification-related services and products.
4. Promote recycling of pre-owned home modification and assistive devices (e.g., grab bars, ramps, stair glides, shower seats).

Strategy 3

Support consumer adoption of home modifications aimed at falls prevention by featuring examples that are attractive, appropriate for home settings, easy to implement, straightforward to use, affordable, and effective.

Action Steps

1. Engage key home improvement industry partners in developing information and products to support safe home environments and educating older adults and caregivers about home safety issues.
2. Expand public/private partnerships (e.g., Area Agencies on Aging and home improvement companies) to provide home assessments and home modifications with the expectation that consumers will receive discounts on products needed for home safety.
3. Engage manufacturers and contractors in developing home features designed to reduce the risk of falls.
4. Create a public awareness campaign related too home modifications, based on marketing research that can be adopted by a variety of organizations.
5. Use home improvement television programs to feature home modification information that is targeted to midlife and older adults.

Goal B:
Health care, the aging network, housing, and other service providers will become more aware of and promote home safety measures (including information, assessments, and adaptive equipment) that reduce home hazards, improve independent functioning, and lower the risk of falls.

Strategy 1

Develop a database of evidence-based programs and best practices in home modifications and effective home safety measures for reducing fall risks at home.

Action Steps

1. Assess and consolidate existing information and resources related to home modifications and home safety measures.
2. Create a database of evidence-based programs and best practices related to home modification and home safety for building and remodeling professionals.
3. Identify and promote the use of credible communication resources for information dissemination such as the homemods.org, Fall Prevention Center of Excellence, and American Occupational Therapy Association.
4. Disseminate home risk assessment instruments and methodologies (including the use of technology for remote assessments of home environments) that can be used by consumers, caregivers, and professionals from the health, aging service, and building sectors. Assure that tools are culturally sensitive for diverse populations, and that they assist older consumers in making their own decisions regarding home modifications.
5. Demonstrate return on investment and cost benefits resulting from evidence-based programs and best practices in home modifications.

Strategy 2

Identify gaps in resources and develop an advocacy plan for enhanced funding for, and attention to, home safety and home modifications.

Action Steps

1. Advocate for greater Medicare and Medicaid coverage for home modification services (including home assessment), the development of approaches such as "money follows the person" that provide consumers with more discretion in the use of Medicaid expenditures for purposes such as home modification, the inclusion of home modifications as a benefit under managed care, and greater insurance reimbursement of home modifications (e.g., long term care insurance) for persons at risk of falls.
2. Seek private/public partnerships to fund tool development, dissemination, education programs, and outreach initiatives.
3. Work with the U.S. Department of Housing and Urban Development (HUD) and subsidized and private housing providers to collect data on falls, conduct periodic reviews, and retrofit existing buildings and facilities to so that they are more supportive of frail older persons, including those at risk for falls.
4. Elevate home safety issues on the agenda of the National Association of Area Agencies on Aging, the National Institute of Senior Centers, and similar types of organizations.

Strategy 3

Expand and enhance the delivery system for home modification, home safety, and related safety

services.

Action Steps

1. Increase collaborative partnerships and coordinated communication among aging, disability, transportation, housing and other relevant organizations/agencies to better coordinate home safety efforts, the cost savings of which could be used to serve more low income individuals.
2. Increase collaborative partnerships among building and remodeling professionals and health care professionals, such as occupational therapists, for better planning of environmental changes based on an individual needs to reduce fall risk.
3. Continue to engage provider organizations, such as the American Physical Therapy Association, American Occupational Therapy Association, and the Visiting Nurses Association of America in development, adoption and dissemination of culturally sensitive, consumer targeted home assessment tools.
4. Train aging service providers who routinely go into the homes of older adults (e.g., Meals-on-Wheels volunteers, groups such as RSVP, home health nurses, home care workers, emergency medical technicians) to identify home hazards and fall risks and make appropriate referrals to health care providers, such as occupational therapists, for more in-depth and individualized home safety/fall prevention assessments.
5. Train health care providers to assess the role of the environment in fall-related injuries sustained by their patients and provide tools and training so health care providers can make appropriate referrals to reduce risks.
6. Once older adults have been identified as at moderate to high risk of falls, develop effective referral pathways for assessing home hazards and making home modifications referrals.
7. Develop local coalitions on falls prevention that include home modification experts.
8. Develop champions with credibility among key health care and aging services leaders to promote home assessment and home modification initiatives.

Strategy 4

Create, translate, and disseminate knowledge tailored for specific professional groups.

Action Steps

1. Evaluate and disseminate valid assessment tools, templates and strategies that can be used by professionals from various sectors to identify home environmental risks and make appropriate adaptations.
2. Disseminate findings about the role of home modification in falls prevention to key decision making groups.
3. Create tools to educate primary care providers and building professionals about home safety and modifications that can help reduce falls.
4. Conduct outcomes-based research on the efficacy of the current referral pathway for home modification and make recommendations on how to improve it.
5. Assess current research to identify successful behavior change strategies that professionals can use to encourage clients to make appropriate modifications.
6. Advocate with public and private partners to support research on the development of a "readiness to change" tool that motivates older adults to make their homes safer.

D. Environmental Safety in the Community

Goal A:
All older adults will have access to community environments that lower the risk of falls and facilitate full participation, mobility, and independent functioning.

Strategy 1

Promote the wider use of risk identification, reporting tools, and other mechanisms for reporting and data collection.

Action Steps

1. Identify current risk identification and reporting tools.
2. Identify current databases of organizations that address falls prevention. Establish a clearinghouse to facilitate information sharing and dissemination.
3. Work to develop and incorporate tools into local practice, looking at delivery channels such as local emergency medical systems, and community and neighborhood councils, etc.
4. Generate pilot programs on how to integrate risk identification and reporting tools.

Strategy 2

Develop a social marketing campaign to increase the demand for senior-friendly communities.

Action Steps

1. Research key messages to motivate public action.
2. Identify venues such as mobility hotlines, RideShare programs, "Eldercare Locator" and others that can include falls prevention information.
3. Commission a consensus document/white paper about the benefits of universal design and Americans with Disabilities Act (ADA) compliance as they relate falls prevention.
4. Utilize key messages and new tools to create advocates among caregivers, faith leaders, and others on the importance of designing or enhancing communities that are elder-friendly.
5. Target senior residential communities (senior housing, assisted living, independent living communities) with falls prevention information.
6. Raise awareness of universal design strategies to increase community accessibility and safety, including benefits of ADA requirement compliance for public spaces, and the design of new housing with universal design features (e.g., curbless showers).

Strategy 3

Identify the most important research gaps related to understanding the role of the environment on falls and on the effectiveness of environment-based falls prevention interventions.

Action Steps

1. Improve information collection related to risk and risk reduction, identify existing data sets, and fill in the gaps.
2. Develop white papers, assess existing data sets, conduct a meta-analysis of the research to identify what works, and identify gaps in the research.
3. Advocate for funding of research to address community design and to identify safe environmental features related to falls prevention.

Strategy 4

Identify best practice information about effective strategies to reduce falls outside the home.

Action Steps

1. Identify existing best practice programs to reduce falls outside the home, and develop processes for dissemination of information about these programs.
2. Identify processes and resources to support wider implementation of best practices and evidence-based environmental safety programs.

Goal B:

Public officials such as community and transportation planners, community service providers, and those responsible for maintenance and repairs, will be aware of and actively promote community environments that lower the risk of falls.

Strategy 1

Improve information gathering and comprehensive assessment of community hazards.

Action Steps

1. Develop and disseminate tools to help community leaders and others assess and address environmental falls risks.
2. Create pilot projects to identify implementation strategies.
3. Establish hotlines for community reporting, and provide a mechanism for individuals to identify significant risks in the community. Include information on how to take corrective action.
4. Develop community-level assessment tools. Use Americans with Disabilities Act tools as models.
5. Provide an action plan targeted at policy makers, in response to the recommendations from the 2015 National Falls Prevention Action Plan.

Strategy 2

Increase the awareness among local, state, and federal policy makers and regulatory officials of the scope and nature of the impact of falls, fall-related injuries, and death among older adults.

Action Steps

Implement a falls-prevention letter writing campaign targeted to federal, state, and local policy makers and community leaders.

1. Implement a falls prevention letter writing campaign targeted to federal, state, and local policy makers and community leaders.
2. Increase awareness among national and local public officials and transportation and other types of planners about the role the environment plays in falls and falls prevention. Focus on the business case or cost effectiveness of providing safe environments (e.g., the cost of falls in comparison to cost of prevention measures).
3. Educate and build awareness among public officials (e.g., city planners, traffic planners) of their roles and responsibilities regarding the problem of falls and effective prevention strategies, specifically surrounding the built environment.
4. Develop a template related to falls prevention advocacy for use at the local level.
5. Summarize available environment-related falls risk and prevention research into one-page issue briefs.
6. Advocate for accessible and supportive housing options for the aging population that include falls prevention features.

Strategy 3

Provide tools to targeted populations and their caregivers to empower them to make changes within their communities.

Action Steps

1. Advocate for emerging strategies such as universal design and visitability codes that can make new housing more accessible and reduce fall-related hazards.
2. Recruit informed community advisory groups, organizations, and key leaders to engage building code councils and planning groups in falls prevention issues.
3. Research best and promising practices of community action. Establish a committee to develop and launch community recognition programs and secure corporate support.
4. Educate community leaders on processes for changing their communities, including how to be advocates. Develop advocacy toolkits for local use.

Strategy 4

Focus on sidewalk safety with a clear priority of public environmental safety for older adults.

Action Steps

1. Identify activities of communities that have been successful in the implementation of sidewalk safety initiatives (e.g., communities involved with the Robert Wood Johnson Foundation-supported Active Living programs) and promote dissemination of successful community-based action steps.
2. Get sidewalk safety on the agendas of organizations, committees or councils responsible for community planning and sidewalk design and maintenance (e.g., the American Planners Association, National Association of Community Officials, county and municipal groups, and transportation planners).

E. Cross Cutting

i. Funding and Reimbursement

Goal:
Increase available funding and reimbursement sources and mechanisms to support falls prevention programs, interventions, and activities.

Strategy 1

Leverage various quality indicators and other measures in support of falls prevention screening, assessment and interventions.

Action Steps

1. Conduct a scan to identify existing health system quality indicators related to falls and reach consensus on quality indicator priority areas; identify how falls prevention screening, assessment and interventions impact the quality indicators.
2. Connect with clinical partners to identify which quality indicators are being tracked in their practices and work with them to address their fall prevention indicator needs.
3. Collaborate with electronic health records (EHR) vendors to include screening questions in direct workflow or highly visible area of the screens used for patient intake, and recommendations for referral and follow-up to community-based programs in EHR.
4. Publicize that falls data are included in "Improving Medicare Post-Acute Care Transformation Act of 2014" (IMPACT) data for post-acute care. The Act requires reporting of standardized patient assessment data with regard to quality measures, resource use, and other measures, including incidence of major falls.
5. Collaborate with the Centers for Medicare and Medicaid Services (CMS) to review and recommend additional process and outcomes measures, noting that provider payments from CMS are tied to outcomes measures.
6. Examine the various standards established by National Committee for Quality Assurance for Patient Centered Medical Home certification and identify where the potential exists to leverage falls prevention programs.
7. Explore with the Centers for Medicare and Medicaid Services adding a new measure due to a second fall that could include fractures, brain injuries, and other injuries resulting from a fall to the hospital readmission reduction program.

Strategy 2

Build a business case for falls prevention.

Action Steps

1. Conduct an environmental scan of all fall cost data; leverage the data set to better understand all of the costs to the individual, hospital, health care system, employers, insurers, and other applicable stakeholders.
2. Analyze data from the Behavioral Risk Factor Surveillance System (BRFSS) survey, Emergency Medical Services, hospital-based falls registries and other databases, and existing studies to calculate the cost per person per year of fall-related injuries and deaths.
3. Conduct and connect with existing research to quantify hospital readmissions due to falls and the costs associated with those readmissions.
4. Obtain indirect costs associated with falls when possible, such as lost wages and

productivity.

5. Engage Emergency Medical Services (EMS) as partners for identification of fallers, including more accurately quantifying fallers who are not transported to emergency departments and are admitted to hospitals, to more fully capture the scope of falling.
6. Investigate, through surveys or focus groups, what information payers and policy makers need and want to know about the costs associated with falls and impact of falls prevention programs.
7. Collaborate with groups that have developed similar business cases for insurance coverage.
8. Understand the impact/potential cost of co-morbidities commonly associated with falls.
9. Develop national/state infographics on costs and impact of falls.
10. Develop a cost calculator using relevant data to determine return on investment.
11. Continue engagement and shared learnings with the Administration for Community Living, Centers for Medicare and Medicaid Services, and Centers for Disease Control and Prevention.
12. Encourage the aging services network to partner with state health departments to leverage various data sets.
13. Assess and monitor regional disparities in services available to patients found to be at increased risk of falls, i.e., in rural or low income areas.
14. Assess and monitor for underserved populations in all areas i.e., those that are homebound and cannot get to recommended treatment programs.

Strategy 3

Leverage Medicare's Annual Wellness Visit (AWV).

Action Steps

1. More fully integrate into the AWV by requiring assessment and treatment plan, including referrals, if patient indicates he/she has had falls or has concerns about fall risk.
2. Review expanding the visit to include referral to and participation in an evidence-based program.
3. Market the AWV benefit to Medicare beneficiaries and their caregivers.
4. Explore the feasibility of integrating CDC's Stopping Elderly Accidents, Deaths, and Injuries (STEADI) toolkit and requiring documentation of follow-up and intervention, if needed, into the AWV.
5. Explore expanding the AWV implementation beyond physicians' offices, into other clinical settings as well as community-based settings.
6. Engage other health care professionals, such as pharmacists and nurse practitioners since many are interested in participating in the AWV and falls prevention.

Strategy 4

Develop payor options and approaches for reimbursing providers/provider systems for physical mobility services and treatment related to falls prevention.

Action Steps

1. Write and sponsor a reimbursement request to payors such as Medicare and Medicaid based on existing consensus guidelines and recommendations.
2. Develop consensus around payor reimbursement policy alternatives related to falls prevention.
3. Work with payors to reimburse for fall screening with treatment plan and create pay for

performance programs to encourage and incentivize fall screening.

4. Clarify payor reimbursement policies related to evaluation and management services for people at high risk for falls.
5. Support the development, enhancement, and implementation of fall-specific International Classification of Diseases (ICD) and Current Procedural Terminology I (CPT I) codes. (Please note that ICD and CPT II codes currently exist for falls prevention activities. CPT Category II codes are used for tracking and facilitate data collection for the purposes of performance measurement. CPT I codes are used for billing purposes.)

ii. Expansion of Evidence-Based Programs

Goal:
Expand the availability of evidence-based falls prevention programs.

Strategy 1

Develop new models of care under the Patient Protection and Affordable Care Act.

Action Steps

1. Establish financial incentives for providers, health plans, Accountable Care Organizations, Patient Centered Medical Homes, and other health care delivery systems to work with community agency partners.
   a. Develop and disseminate business cases and encourage embedding evidence-based programs into health care routines.
   b. Test return on investment with health care plans and disseminate the results.
   c. Analyze current bill codes and utilization.
   d. Increase utilization of codes.
   e. Expand provider base for utilization and coding.
   f. Embed falls prevention activities into quality rating systems.
   g. Synthesize available material on return on investment;
   h. Identify new sources of technical assistance.
2. Create options for new payment models of service delivery; diversify funding streams.
3. Provide incentives for older adults to participate in evidence-based programs (e.g., insurance incentives).
4. Develop communities of practice, including researchers and practitioners, to meet regularly, share resources and experiences, and reflect on what is working and not working.
5. Identify new partners (e.g., caregivers, certified nursing assistants, gyms/fitness centers, and organizations and agencies such as the Centers for Medicare and Medicaid Services) and what they may be able to offer in terms of data, personnel or other resources.
6. Monitor results of ongoing research that tests innovative models of care to prevent falls and fall-related injuries, such as the STRIDE Study supported by the National Institute on Aging and the Patient Centered Outcomes Research Institute, for potential inclusion and expansion of evidence-based approaches.
7. Compile the most compelling effectiveness research, cost-effectiveness reports, infographics, publications, testimonials, manuals, strategic plans, processes/protocols, or other evidence to share with partners and stakeholders.
8. Integrate evidence-based program training into inter-professional education of health care professionals.

Strategy 2

Expand the falls prevention evidence-based program infrastructure.

Action Steps

1. Work with program developers and groups such as the Evidence-Based Leadership Council to standardize training and licensure.

2. Standardize program data collection; identify salient data point and tools.
3. Create a coordinated system for referrals.
4. Expand the falls prevention evidence-based program provider base to include more instructors/trainers, training opportunities, and program availability in underserved areas.
5. Link resources on national association websites to local/state agencies.
6. Identify sources to provide expert technical assistance and synthesize current processes to broaden the base, e.g., practitioners, researchers, and other stakeholders to discuss issues such as recruitment, retention, partnership development, and other issues.
   - Connect with researchers.
   - Synthesize current best practices.
   - Develop a community of practice under a collaborative, such as the Falls Free® Initiative, to identify effectiveness research, cost-effectiveness reports, infographics, publications, testimonials, manuals, strategic plans, processes/protocols, or other evidence to share with partners and stakeholders.
7. Identify data points and standardized tools as common measures across programs to generate compelling evidence for a "business case" to continue the programs and generate new partners.
8. Modify grant structures to allow for time and resources to build infrastructure and develop sustainability.
9. Identify sources of support for additional demonstration projects and to translate research into practice.
10. Encourage and facilitate the development of online websites or other databases to locate local evidence-based falls prevention programs and physical activity programs, as well as age-friendly fitness and wellness facilities in the community.
11. Establish evaluation criteria for expanding the falls prevention evidence-based infrastructure, including the implementation of clinical-community connections such as the number of referrals from health care providers to community-based programs.
12. Evaluate expansion efforts based on the established evaluation criteria.

iii. Public Awareness and Education

Goal:
Effectively move the falls prevention communications and marketing agenda/action plan forward.

Strategy

Develop a research-based social marketing campaign that will reframe the outdated view that falls are an inevitable consequence of aging to an actionable view that falls are caused by known risks and can be prevented.

Action Steps

1. Compile the research that has been conducted around falls prevention and messaging.
2. Analyze other applicable social marketing campaigns and lessons learned specifically targeting older adults (e.g., Hawaii Department of Health's "Senior Fall Prevention" campaign; International Council on Active Aging's "Changing the Way We Age" campaign; National Institutes of Health's "The Heart Truth" campaign; U.S. Department of Health and Human Services' "Million Hearts" campaign).
3. Convene an advisory group with a range of partners (e.g. health care, private industry, home improvement, construction, Area Agencies on Aging, community centers, EMS responders, social media, caregivers, grandchildren, genealogists, nursing homes, hospitals, YMCA/YWCAs, fitness centers, transportation providers) to collaborate in the development and dissemination of the social marketing campaign.
4. Secure resources for a qualified organization to develop and disseminate the social marketing campaign, based on guidance from the advisory group.
5. Develop a social marketing campaign plan, based on social marketing principles, that identifies key messages, target audiences, channels of dissemination (including social media), and evaluation criteria and strategies.
6. Find spokespersons and champions to promote the messages and stories of the campaign through identified distribution channels.
7. Disseminate the social marketing campaign and resources.
8. Evaluate the campaign and share lessons learned.

> "Every 13 seconds an older adult is seen in an emergency department for a fall."

iv. Public Policy and Advocacy

Goal:
Effectively move the Falls Free® National Falls Prevention Action Plan forward through policy and advocacy efforts.

Strategy 1

Develop a public policy agenda to promote falls prevention at the national, state, and local levels.

Action Steps

1. Continue to collaborate with leaders from falls prevention coalitions to address falls and falls prevention policy issues from a national, state and local level. Involve representatives from government, business, nonprofit, academic, building, the aging network, and health care communities.
2. Support ongoing and new advocacy initiatives relevant to supporting falls prevention, including:
   a. Federal funding of falls prevention efforts through the Prevention and Public Health Fund
   b. Other opportunities as a result of the Affordable Care Act
   c. Older Americans Act reauthorization.
3. Continue to inventory and analyze existing policies and practices and identify gaps related to reimbursement, insurance coverage, medical coding issues, and building codes related to falls.
4. Educate providers and consumers about current opportunities for reimbursement.
5. Review the incorporation of safety awareness and strategies into Medicare conditions of participation for home care providers.
6. Develop policy issues for model legislation for use by states and local communities.

Strategy 2

Support legislation and regulations that include falls risk as part of current Food and Drug Administration (FDA) safety monitoring.

Action Steps

1. Collaborate with FDA to provide practitioners with current information to help inform them about the high risks associated with certain prescription and over-the-counter medications and falls.
2. Develop an advocacy plan that addresses FDA safety monitoring to include falls prevention.
3. Seek opportunities for collaboration among stakeholder organizations related to FDA policies and initiatives for falls prevention and medication use safety.

III. Next Steps

The 2015 National Falls Prevention Action Plan provides the framework for action for falls prevention across the nation. This plan envisions older adults experiencing fewer falls and fall-related injuries, maximizing their independence and quality of life. The purpose of the 2015 National Falls Prevention Action Plan is to implement specific goals and strategies to affect sustained initiatives that reduce falls among older adults. Further, the 2015 National Action Plan is intended to help accomplish the falls prevention-specific Healthy People 2020 objective to reduce the rate of emergency department visits due to falls among older adults by 10 percent.

The National Council on Aging's National Falls Prevention Resource Center is leading the effort to disseminate the 2015 National Falls Prevention Action Plan to an array of stakeholders from the public and private sectors with an interest in healthy aging and the capacity to implement action steps outlined in the plan. The 2015 National Falls Prevention Action Plan will be disseminated to professionals in the health care and aging fields, federal and state agencies, professional associations, consumer and caregiver organizations, state and local falls prevention coalitions, corporations, and foundations.

The plan is intended to be a framework for action over the next five to 10 years. As the lead entity in moving the plan forward in a strategic way, NCOA's National Falls Prevention Resource Center is collaborating with multiple public and private sector partners to advance the field. The Resource Center is poised to educate and engage various sectors, partners, and stakeholders to implement specific action steps of the 2015 National Falls Prevention Action Plan.

Next steps that the National Falls Prevention Resource Center will engage in are the following:

- Broad dissemination of the plan through multiple channels, including posting on NCOA's and partner websites, presenting at national and state conferences, and sharing the plan with state falls prevention coalitions and strategizing with them on implementation approaches.
- Encouragement of ownership and adoption of the 2015 National Falls Prevention Action Plan strategies and action steps by key national stakeholder organizations that address issues related to older adults, their health and wellness.
- Collaboration and involvement of key stakeholder organizations to further disseminate and implement the strategies and action steps.
- Seek funding to support key strategies, alone or in conjunction with stakeholders organizations.
- Partner with, and/or advise organizations to support public policy and advocacy initiatives related to the reduction of falls risk factors and falls.
- Track progress by identifying national and state initiatives related to the implementation of the plan's strategies and action steps and their outcomes.
- Develop a follow-up report three years after this plan is released, to summarize action taken or underway related to these strategies.

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V. Appendices

A. Falls Prevention Milestones Over the Past Decade

2005

- The National Council on Aging (NCOA) hosts the first Falls Prevention Summit, with funding from the Archstone Foundation and the Home Safety Council, to focus attention on evidence-based solutions for falls and improve the lives of older adults.
- In collaboration with the Summit's conveners, NCOA publishes the first Falls Free® National Action Plan.
- NCOA's Falls Free® Initiative launches as a national effort led by NCOA to address the growing public health issue of falls and fall-related injuries and deaths in older adults.
- The CDC and Centers for Medicare and Medicaid Services (CMS) develop a new V code (a billable medical code that can be used to specify a diagnosis on a reimbursement claim) for history of falls. This code, International Classification of Diseases-Clinical Modification (ICD -9-CM), Diagnosis Code V15.88, can be used to identify individuals at risk, measure quality of care, and justify a provider's decision to order or perform certain services.

2006

- Safety of Seniors falls prevention legislation is introduced (S. 845 / H.R. 3701). The proposed legislation adopted evidence-based strategies from the National Action Plan including:
  - Public Education/Awareness.
  - Provider Education Programs.
  - Demonstration Projects & Evaluation.
  - Cost Effectiveness Evaluation.
- State Coalitions join the Falls Free® Initiative. NCOA begins technical assistance to build effective coalitions; four states have fall prevention coalitions.
- The U.S. Administration on Aging (AoA) awards three-year grants to 16 states to accelerate translation of research into practice by supporting evidence-based disease and disability prevention programs at the community level, with 10 of the states implementing falls prevention programs.
- CDC publishes *The State of Aging and Health in America 2007*, which focuses on older adult falls.

2007

- Safety of Seniors legislation reintroduced.
- CDC, AoA and Archstone Foundation establish public-private agreement facilitating the Falls Free® Initiative.
- NCOA publishes the first-of-its-kind *Exploring Practice in Home Safety for Fall Prevention: The Creative Practices in Home Safety Assessment and Modification Study*.
- AoA awards three-year grants to eight additional states to accelerate translation of research into practice by supporting evidence-based disease and disability prevention programs at the community level, bringing the total to 24 funded states. Five additional states implement falls prevention programs. Evidence-based programs being offered by the states include a Matter of Balance (13 states); Stepping On (one state); and Tai Chi (one state).

- CDC funds the Veterans Affairs Greater Los Angeles Healthcare System through an interagency agreement to develop the *Stay Independent* risk self-assessment brochure.
- With support from MetLife and the CDC Foundation, CDC redesigns its popular fall prevention brochures, *What You Can Do to Prevent Falls* and *Check for Safety: A Home Fall Prevention Checklist for Older Adults*.
- Based on a survey of Falls Free® Coalition members, the *Making a Difference: Progress Report on the Falls Free® National Action Plan* provides suggestions for future fall prevention initiatives.
- NCOA participates in the World Health Organization (WHO) Technical Meeting on Falls Prevention in Older Age in Victoria, Canada; *WHO Global Report on Falls Prevention in Older Age* is published.
- With support from the Home Safety Council and the Archstone Foundation, NCOA's Falls Free® Initiative hosts the "State Coalitions on Fall Prevention Workgroup: Enhancing Effectiveness through Collaboration" meeting in Washington, D.C., to promote community awareness, effective collaboration, policy change, infrastructure building, and sustainability.

2008

- Safety of Seniors Act of 2007, Pub.L. 110-202, passes and is signed into law April 23, 2008.
- The Falls Free® Advocacy Workgroup facilitates the first annual U.S. Senate Proclamation for a national Falls Prevention Awareness Day; 11 states participate.
- The Falls Free® Initiative National Advisory Group convenes to guide future activities; it publishes a strategic planning meeting report, and the Falls Free® Initiative adopts its recommendations as guidelines.
- *CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Adults, 1st edition*, is published and includes 14 interventions.
- American Geriatrics Society (AGS) meets to revise fall prevention guidelines for the first time, broadening its expert panel to include ancillary services such as physical therapy, occupational therapy, and pharmaceuticals.
- CDC publishes *Preventing Falls: How to Develop Community-based Fall Prevention Programs for Older Adults, 1st edition.*

2009

- U.S. Senate issues second annual Proclamation of Falls Prevention Awareness Day; 22 states participate.
- Congress increases CDC falls budget in the economic stimulus package; CDC funding for falls prevention increases from $1 million to $2 million.
- NCOA conducts review of state falls prevention policy and evaluation needs.
- CDC awards three-year grants to four state health departments (California, New York, Oregon, and Wisconsin) to implement the evidence-based programs Stepping On and/or Tai Chi: Moving for Better Balance.
- The American Occupational Therapy Association conducts the *Improve the Public Policy Response to Older Adult Fall Prevention Project* under a contract with the CDC's National Center for Injury Prevention and Control (2009-Q-11452). The project includes a review of existing or pending fall prevention supportive policies, policy barriers, and an analysis of Medicare policy.

2010

- Third annual U.S. Senate Proclamation of Falls Prevention Awareness Day is issued; 34 states and Washington, D.C., participate.
- NCOA develops a web-page to host state fall prevention tools and resources: www.ncoa.org/fpad
- NCOA and Paraprofessional Healthcare Institute (PHI) develop Direct Care Worker (DCW) education program on fall prevention.
- The Patient Protection and Affordable Care Act passes.
- CDC releases *A CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Adults, 2nd edition*; the compendium includes 22 interventions.
- Medicare's Physician Quality Reporting System (PQRS) adds falls measures 154 (falls risk assessment) and 155 (falls plan of care) allowing certain providers paid under the Medicare Physician Fee Schedule to voluntarily report on a set of quality measures through Medicare claims. Professionals who successfully report on measures are eligible for incentive payments.

2011

- Fourth annual U.S. Senate Proclamation of Falls Prevention Awareness Day issued; 43 states and Washington, D.C., participate.
- As part of the Affordable Care Act, an Annual Wellness Visit is made available to Medicare patients; it includes falls risk screening.
- Forty states are active in falls prevention.
- NCOA and the Falls Free® Initiative convene a State Coalitions on Fall Prevention Evaluation Committee to develop a set of evaluation strategies for state and local coalitions to more effectively measure the impact of their activities.
- NCOA develops *State Policy Toolkit for Advancing Falls Prevention*.
- CDC launches the *Stopping Elderly Accidents, Deaths, and Injuries (STEADI)* toolkit based on the American Geriatric Society/British Geriatric Society (AGS/BGS) guidelines.
- CDC awards grants to three state health departments (Colorado, New York, and Oregon) to evaluate the implementation of STEADI and three community-based falls prevention programs; these include Stepping On; Tai Chi: Moving for Better Balance; and the Otago Exercise Program.
- As part of the Affordable Care Act, the Meaningful Use Incentive Program launches; fall risk screening is a quality indicator.
- As part of the Affordable Care Act, Accountable Care Organization (ACO) programs are created to help manage risk and incentivize prevention. Fall risk screening is one of the quality indicators.
    - AGS/BGS release *Prevention of Falls in Older Persons*; these updated guidelines provide practitioners with an algorithm for falls risk screening and recommended interventions for older adults in community settings.

2012

- Fifth annual U.S. Senate Proclamation of Falls Prevention Awareness Day is issued; 43 states

and Washington, D.C., participate.

- U.S. Preventive Services Task Force (USPSTF) recommends exercise or physical therapy and vitamin D supplementation to prevent falls in community-dwelling adults aged 65 years or older who are at increased risk for falls.
- Congress requires Older Americans Act Title IIID funding to be used only on evidence-based programs, including falls prevention programs.
- The Falls Free® Initiative's State Coalitions on Fall Prevention Evaluation Committee publishes *Evaluation Guidelines to Measure the Impact of State and Local Coalitions on Fall Prevention*, including a nationally recognized logic model to demonstrate how coalition activities link with long-term outcomes.
- CDC's Behavioral Risk Factor Surveillance System (BRFSS) survey updates the questions it uses to measure the occurrence of falls in the U.S.:
    - In the past 12 months, how many times have you fallen?
    - How many of these falls caused an injury?
- NCOA publishes *State Policy Toolkit for Advancing Falls Prevention* toolkit.

2013

- The sixth annual U.S. Senate Proclamation of Falls Prevention Awareness Day is issued; 47 states and Washington, D.C., participate.
- The Prevention and Public Health Fund (PPHF) established by the Affordable Care Act includes targeted fall prevention funding.
- CDC/American Physical Therapy Association (APTA) Advisory Group convenes to promote fall prevention in practice.
- In November, *Report to Congress: The Centers for Medicare & Medicaid Services' Evaluation of Community-based Wellness and Prevention Programs under Section 4202 (b) of the Affordable Care Act* shows cost savings of A Matter of Balance and other evidence-based programs.
- NCOA publishes *Falls Prevention Awareness Day 2013 - A Compendium of State and National Activities.*
- The National Institute on Aging (NIA) at NIH and the Patient Centered Outcomes Research Institute (PCORI) form the *Falls Injuries Prevention Partnership* to support a major intervention study aimed at preventing injuries from falls in older adults.

2014

- Seventh annual U.S. Senate Proclamation of Falls Prevention Awareness Day is issued; 48 states and Washington, D.C., participate.
- ACL/AoA awards grants using Prevention and Public Health Funds to 10 states and four tribal organizations to implement and sustain evidence-based fall prevention programs.
- ACL/AoA awards grant for the first National Falls Prevention Resource Center to the National Council on Aging.
- Patient-Centered Outcomes Research Institute/National Institutes of Health (PCORI/NIH) award $30 million grant to researchers at Brigham and Women's Hospital/Harvard Medical School, Yale School of Medicine, and UCLA to test individually tailored interventions to prevent falls-related injuries at 10 clinical sites across the country.

2015

- CDC publishes *A cost-benefit analysis of three older adult fall prevention interventions* in the Journal of Safety Research.
- NCOA hosts second national Falls Prevention Summit, a 2015 White House Conference on Aging event.
- NCOA publishes second Falls Free® National Falls Prevention Action Plan (this document).
- *Frontiers in Public Health – Public Health Education and Promotion* journal features evidence-based falls prevention interventions and research as a Research Topic.
- CDC updates the *CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Adults, 3rd Edition*; for the first time, it includes effective clinical interventions for a total of 41 interventions.
- CDC publishes *Preventing Falls: a Guide to Implementing Effective Community-Based Fall Prevention Programs*.
- CDC names older adult falls prevention as an area for increased growth and development.
- CDC promotes STEADI Step One, which asks primary care providers to screen for falls, review medications, and recommend vitamin D.
- Epic develops a falls assessment program based on the Centers for Disease Control and Prevention's STEADI toolkit. The program will be part of the Epic Foundation System and available to Epic customers in late 2015. CDC launches its first online continuing education course on how to incorporate STEADI into clinical practice.
- NCOA publishes *Falls Prevention Awareness Day 2014 - A Compendium of State and National Activities.*
- ACL/AoA awards grants using Prevention and Public Health Funds to seven states to increase participation in evidence-based community programs to reduce falls and falls risk, and also improve the programs' long-term sustainability (http://www.hhs.gov/news/press/2015pres/07/20150713a.html).
- The eighth annual Falls Prevention Awareness Day (FPAD) is observed on September 23.

B. Community-Based Program Information

The growth and infrastructure for providing evidence-based falls prevention programming has grown substantially since 2005. The following is an overview of the growth of select programs:

- **A Matter of Balance**
  A Matter of Balance emphasizes practical strategies to reduce fear of falling and increase activity levels. Participants learn to view falls and fear of falling as controllable, set realistic goals to increase activity, change their environment to reduce fall risk factors, and exercise to increase strength and balance. This evidence-based program has been adapted from the original intervention to be more suitable for community-dwelling older adults by allowing small group sessions to be led by a trained facilitator.

  Adoption has grown widely:
  - A Matter of Balance went national in 2006, launching in six states. In 2009, it had spread to 31 states, and by 2015, to 40 states.
  - In 2006, there were 27 Master Trainers. In 2009, there were 600, and in 2015, there are 1,100.
  - Approximately 62,000 people have participated in A Matter of Balance since 2006.
  - States Patti League, program manager, "The quality of life of the participants is very important. A Matter of Balance gives them the ability to stay independent and actively engaged in their lives."

- **Otago Exercise Program: Training for Physical Therapists**
  Developed in New Zealand, this intervention, tested in four randomized controlled trials and one controlled multi-center trial, was an individually tailored program of muscle strengthening and balance-retraining exercises of increasing difficulty, combined with a walking program. The focus was to improve strength and balance with a simple, easy-to-implement, and affordable home-based exercise program. It was intended for people who did not want to attend, or could not reach, a group exercise program or recreation facility, and it included visits from a physical therapist or nurse, plus telephone support. Overall, the fall rate was reduced by 35 percent among program participants compared with those who did not take part.

  The Otago Exercise Program has grown exponentially:
  - In 2010, one state was implementing the program, and in 2015, 12 states were.
  - In 2015, 3,276 physical therapists had been trained to implement the program.
  - Over 1,000 patients have participated in the program in the United States.
  - According to Tiffany Shubert, U.S. program manager, "The past three years have seen incredible progress in the dissemination and adoption of the Otago Exercise Program by physical therapists. Several states are actively engaging physical therapists to implement the program, and we will rapidly reach the critical mass needed for national dissemination of this program."

- **Stepping On**

  Stepping On is a multifaceted falls-prevention program for the community-residing elderly and engages participants in a range of relevant fall preventive strategies. The program has been proven to reduce falls.

  Thousands of people benefit from Stepping On:
  - In 2006, Stepping On was available in one state; it is now available in 20 states.
  - To date, 386 leaders have been trained.
  - Approximately 9,178 people have participated in the program.

- **Tai Ji Quan: Moving for Better Balance**

  Tai Ji Quan: Moving for Better Balance (formerly known as Tai Chi: Moving for Better Balance) is designed to improve the strength, balance, and physical functioning of individuals with diminished physical abilities, including older adults and those with Parkinson's disease. The focus of the program is Tai Chi, a nontraditional form of exercise, which is used to help participants improve postural stability, control of body positioning, gait initiation and locomotion, movement symmetry, and coordination; increase the range of motion around ankle joints; and build strength in lower extremities. The program has proven to be effective in reducing falls.

  Tai Ji Quan is providing benefits to participants across the country:
  - The program is now in 21 states.
  - To date, 1,330 leaders have been trained.
  - Over 4,000 older adults have participated in the program.

Information about other evidence-based falls prevention programs can be found at: http://www.ncoa.org/assets/files/pdf/center-for-healthy-aging/Select-EB-FP-Programs-Grid-021215.pdf

C. Health Care Focused Education and Training

Several falls prevention training courses have been created over the past 10 years for various health-related audiences. Examples include the following:

- Community Health Workers (English and Spanish) - *Preparing Community Health Workers* and *Promotores to Prevent and Reduce Falls Among Older Adults*
- Home Health Aides - Falls Prevention Awareness: Advanced Training for Home Health Aides
- Home Health Nurses - Falls Prevention for Home Health Nurses
- Primary Health Care Providers (CDC's STEADI)
- Physical Therapists (Otago) - Otago Exercise Program: Training for Physical Therapists
- Management of Falls in Community-Dwelling Older Adults: Clinical Guidance Statement from the Academy of Geriatric Physical Therapy of the American Physical Therapy Association.

D. Organizations/Agencies/Corporations that Participated in the 2015 Falls Prevention Summit

Federal Agencies

Administration for Community Living, Administration on Aging

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control

Centers for Medicaid and Medicare Services

Consumer Product Safety Commission

Corporation for National and Community Service

Department of Housing and Urban Development, Office of Healthy Homes and Lead Hazard Control

Department of Transportation, National Highway Traffic Safety Administration

Department of Veterans Affairs, VISN 8 Patient Safety Center of Inquiry

Health Resources and Services Administration

National Institutes of Health, National Institute on Aging

National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases

National Institutes of Health, National Institute of Nursing Research

Office of the Assistant Secretary for Planning and Evaluation

White House Conference on Aging

Administration for Community Living/Administration on Aging 2014 Falls Prevention Grantees

Colorado Department of Public Health and Environment

Foundation for Healthy Communities (New Hampshire)

Georgia Department of Human Services, Division of Aging Services

Hardrock Council on Substance Abuse (Arizona)

Health Foundation of South Florida

Iowa Department on Aging

Little Traverse Bay Band of Odawa Indians (Michigan)

Minnesota Board on Aging

North Carolina Department of Health and Human Services, Division of Aging and Adult

Services

Sokaogon Chippewa Community (Wisconsin)

State of Vermont Department of Health, Public Health Preparedness

Utah Department of Health

Non-Profit Organizations/Associations

American Association on Health & Disability

Alliance for Aging Research

American Bone Health

American Health Care Association

American Occupational Therapy Association

American Physical Therapy Association

American Society of Consultant Pharmacists

Grantmakers In Health

International Council on Active Aging

Joint Commission Center for Transforming Healthcare

Meals on Wheels Association of America

National Alliance for Caregiving

National Association of Nutrition and Aging Services Programs

National Bone Health Alliance

National Center on Assisted Living

National Council on Aging

National Fire Protection Association

National Floor Safety Institute

National Osteoporosis Foundation

Oregon Research Institute

Partners in Care Foundation

Public Health Solutions

Urban Institute

YMCA of the USA

Foundations

AARP Foundation

The John A. Hartford Foundation

United Health Services

Silverman Charitable Group

Academic Institutions

California State University Center Fullerton Center for Successful Aging, Institute of Gerontology

University of Southern California, Davis School of Gerontology

East Carolina University, College of Allied Health Sciences

George Washington University

Johns Hopkins University

Texas A&M University

University of Georgia, College of Public Health

University of Montana

University of North Carolina at Chapel Hill

University of Washington

Yale University School of Medicine

Corporations

Brigham and Women's Hospital

Evergreen Estates

Kaiser Permanente Northwest

LifePlans, Inc.

Mac, Inc.

MaineHealth

Novartis

Sanofi Biosurgery

United Health Services

Walmart

Other Invited Guests

Georgia Department of Public Health Injury Prevention Program

Hawaii Department of Health/Hawaii Falls Prevention Coalition

Maryland Department of Aging

Shubert Consulting

Wisconsin Department of Health Services

E. Agenda

AGENDA

Hilton Crystal City

Madison Ballroom, Plaza Level

2399 Jefferson Davis Highway

Arlington, Virginia

7:30-8:30am **Continental Breakfast**

Madison Foyer, Plaza Level

8:30-9:00am **Welcome & Opening Remarks**

- James Firman, EdD, President & CEO
  National Council on Aging
- Nora Super, MPA, Executive Director
  White House Conference on Aging (invited)

9:00-9:30am **Why Are We Here? An Overview of Falls among Older Adults**

- Dorothy Baker, PhD, RN, Research Scientist/Scholar, Internal Medicine, Geriatrics, Yale University School of Medicine

9:30-9:50am **How Did We Get Here? A Celebration of Growth and Accomplishment**

- (Bonita) Lynn Beattie, MPT, MHA, PT, Consultant
  National Council on Aging

9:50-10:00am **Break**

10:00-11:30am **Key Partners' Perspectives and Opportunities**

- Grant Baldwin, PhD, MPH, Director, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, CDC
- Jon Pynoos, PhD, Davis School of Gerontology and the Falls Prevention Center of Excellence, University of Southern California
- Frank Floyd, MD, United Health Services
- David Griffin, DPM, Co-Lead, Falls Risk Assessment Team, Kaiser Permanente

- Nancy Latham, PhD, Project Director, PCORI/STRIDE Falls Prevention Project

11:30am-12:00pm **Summary of NCOA's Pre-Summit Survey Findings and Overview of the Breakout Session Process**

- Kathleen Cameron, BS Pharm, MPH
  Senior Director, National Falls Prevention Resource Center, National Council on Aging

12:00-1:00pm **Lunch**

The Buffet Lunch will be served in the Madison Foyer, Plaza Level

- Keynote Speaker: Kathy Greenlee, Administrator and Assistant Secretary for Aging, Administration for Community Living

1:00-2:00pm **Breakout Session One**

Each breakout will answer the following questions:

- What are the most important gaps that need to be addressed?
- What are the opportunities over the next 5 years?

Breakout groups are:

- Clinical Care, including Medications Management and Clinical-Community Linkages (Washington 1)
- Environmental Safety in the Community (Washington 2)
- Expansion of Falls Prevention Initiatives and Evidence-Based Programs (Washington 3)
- Funding and Reimbursement for Evidence-Based Falls Prevention Programs, including opportunities as a result of the Affordable Care Act (Madison - Front)
- Home Safety (Madison - Back)
- Physical Mobility (Monroe 1)
- Public Awareness and Education (Monroe 2)

2:00-2:15pm **Break**

2:15-3:15pm **Breakout Two**

Same breakout groups as above will answer the following questions:

- What are three key priorities based on discussion in Breakout One?
- What recommendations and actions steps are needed to move the priorities forward?
- What role can my agency/organization/institution play in moving the recommendations forward and accomplishing the associated action steps?

3:15-3:30pm **Break**

3:30-4:45pm **Reconvene and Report Out**

Summary of each Breakout Group's Priorities, Recommendations, and Action Steps

4:45-5:00pm **Closing Remarks**

- Anand Parekh, MD
  Deputy Assistant Secretary for Health

  Office of the Assistant Secretary for Health, DHHS

F. Falls Prevention Resources

Research / Statistics

- Older Adult Falls Data and Statistics – Centers for Disease Control and Prevention (CDC)
  http://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html

Coalitions / Grantees

- Falls Free Coalition – National Council on Aging (NCOA)
  http://www.ncoa.org/improve-health/center-for-healthy-aging/falls-prevention/falls-free-initiative.html#falls%20free%20coalition

- Falls Prevention Initiatives – Goals and Grantees – Administration on Aging (AoA)
  http://www.aoa.acl.gov/AoA_Programs/HPW/Falls_Prevention/index.aspx

- State Profiles – National Council on Aging (NCOA)
  https://www.ncoa.org/resourcetype/falls-prevention/?rg_resource_type=7&post_type=ncoaresource
  Profiles of states implementing falls prevention programs, plus links to their websites and outreach materials.

Falls Prevention Initiatives

- Falls Prevention Awareness Day – National Council on Aging (NCOA)
  http://www.ncoa.org/improve-health/center-for-healthy-aging/falls-prevention/falls-prevention-awareness.html
  Tools and activities including an infographic, webinar, media toolkit, and Falls Prevention awareness activities, and sample outreach materials from partners.

- Falls Prevention Center of Excellence—resources for service providers, individuals, families, researchers, and educators.
  http://stopfalls.org/

- Funding Opportunity Announcements – Administration for Community Living (ACL)
  http://www.acl.gov/Funding_Opportunities/Announcements/Index.aspx

- National Falls Prevention Resource Center – National Council on Aging (NCOA)
  https://www.ncoa.org/center-for-healthy-aging/falls-resource-center/

  Includes these and other resources:
  - NCOA / 2015 White House Conference on Aging Falls Prevention Summit – Slides
  - Falls Free: Promoting a National Falls Prevention Action Plan
  - Making a Difference: Progress Report on the Falls Free™ National Action Plan
  - National Falls Free® Initiative: Report from the National Advisory Group

Strategic Planning Meeting
- Evaluation Guidelines to Measure the Impact of State and Local Coalitions on Fall Prevention

- Falls Injuries Prevention Partnership – National Institute on Aging (NIA) and Patient Centered Outcomes Research Institute (PCORI) (https://www.nia.nih.gov/newsroom/2014/06/nih-pcori-announce-major-award-prevent-falls-injuries-older-people) (http://www.pcori.org/news-release/pcori-and-nih-announce-major-study-patient-centered-approach-preventing-fall-related) This effort supports a major clinical trial seeking to test the integration of falls prevention approaches into various health care systems.

Programs / Resources for Professionals

- CEU Courses – American Physical Therapy Association (APTA) http://www.apta.org/BalanceFalls/

- Effective Falls Interventions for Older Adults in the Community – Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/HomeandRecreationalSafety/Falls/compendium.html

- Exploring Practice in Home Safety for Fall Prevention: The Creative Practices in Home Safety Assessment and Modification Study – National Council on Aging (NCOA) http://www.ncoa.org/improve-health/center-for-healthy-aging/content-library/Creative_Practices-Home_Safety_Report.pdf

- Falls Prevention - The American Occupational Therapy Association, Inc. (AOTA) http://www.aota.org/Practice/Productive-Aging/Falls.aspx
  Includes AOTA's Falls Prevention Toolkit, resources for Falls Prevention Awareness Day, AOTA's Falls Project with the CDC, and Public Awareness and Advocacy resources. Online professional development courses, tip sheets, fact sheets on occupational therapy and falls, and evidence-based research are also included.

- Guide to Implementing Effective Community-Based Fall Prevention Programs – Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/HomeandRecreationalSafety/Falls/community_preventfalls.html

- Injuries and Falls from Immobility - Centers for Medicare & Medicaid Services (CMS) http://partnershipforpatients.cms.gov/p4p_resources/tsp-injuriesandfallsfromimmobility/toolinjuriesandfallsfromimmobility.html
  A variety of resources, including the manual *The Falls Management Program: A Quality Improvement Initiative for Nursing Facilities* (AHRQ), the Johns Hopkins Hospital Fall Assessment Tool, the SAFE from FALLS Call to Action program from Minnesota Hospital Association (MHA), and several case studies.

- Safety of Seniors Act of 2007, Public Law 110-202
  http://www.gpo.gov/fdsys/pkg/PLAW-110publ202/pdf/PLAW-110publ202.pdf

- State Policy Toolkit for Advancing Falls Prevention – National Council on Aging (NCOA) http://www.ncoa.org/improve-health/center-for-healthy-aging/falls-prevention/state-policy-toolkit-for.html

Resources for Older Adults

- AARP HomeFit Guide
  http://www.aarp.org/livable-communities/info-2014/aarp-home-fit-guide-aging-in-place.html
  Smart solutions for making a home comfortable, safe, and a great fit.

- American Occupational Therapy Association (AOTA) Tips for Older Adults
  http://www.aota.org/About-Occupational-Therapy/Patients-Clients/Adults.aspx
  Includes falls prevention, remaining in your home as you age, Alzheimer's disease, low vision, and others.

- Balance and Falls - American Physical Therapy Association (APTA)
  http://www.apta.org/BalanceFalls/
  Patient Care and Consumer Education including two videos: One for caregivers and one on improving balance and avoiding falls, and related resources.

- Eldercare Locator Preventing Falls at Home Brochure
  http://www.eldercare.gov/Eldercare.NET/Public/Resources/Brochures/docs/Preventing_Falls_Brochure_pagebypage.pdf
  Offers a home safety check to help people understand what to do to help prevent falls around the home.

- Falls Prevention Tips and Materials for Older Adults – Centers for Disease Control and Prevention (CDC)
  http://www.cdc.gov/Features/OlderAmericans/

- *Go4Life*® Exercise and Physical Activity Campaign from the National Institute on Aging at NIH -- https://go4life.nia.nih.gov/ - The campaign provides resources about a balanced exercise program of endurance, strength, flexibility, and balance designed to help older adults start moving and stay active.

- NIHSeniorHealth Topic on Falls and Older Adults –
  http://nihseniorhealth.gov/falls/aboutfalls/01.html
  Provides information and resources to consumers about falls, related risk factors, prevention, personal change, home proofing, and more.

- Physical Therapist's Guide to Falls - Move Forward
  http://www.moveforwardpt.com/SymptomsConditionsDetail.aspx?cid=85726fb6-14c4-4c16-9a4c-3736dceac9f0#.VWY72Eb58jI

- Questions to Ask Older Adults to Prevent Falls – Medscape
  http://www.medscape.com/viewarticle/841020

- Stopping Elderly Accidents, Deaths and Injuries (STEADI) – Centers for Disease Control and Prevention (CDC)
  http://www.cdc.gov/steadi/index.html
  Comprised of tools and educational materials for health care providers to help identify patients with risk factors and offer interventions.

Agencies and Organizations

- Administration for Community Living (ACL)
  http://www.aoa.acl.gov/AoA_Programs/HPW/Falls_Prevention/index.aspx

- American Occupational Therapy Association, Inc. (AOTA)
  http://www.aota.org/Practice/Productive-Aging/Falls.aspx

- American Physical Therapy Association (APTA)
  http://www.apta.org/BalanceFalls/

- Centers for Disease Control and Prevention (CDC)
  http://www.cdc.gov/HomeandRecreationalSafety/Falls/index.html

- Centers for Medicare & Medicaid Services (CMS)
  http://partnershipforpatients.cms.gov/p4p_resources/tsp-injuriesandfallsfromimmobility/toolinjuriesandfallsfromimmobility.html

- National Council on Aging (NCOA), National Falls Prevention Resource Center
  https://www.ncoa.org/center-for-healthy-aging/falls-resource-center/

- National Institute on Aging, National Institutes of Health
  https://go4life.nia.nih.gov/tip-sheets/fall-proofing-your-home;
  https://www.nia.nih.gov/health/publication/falls-and-fractures

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Retrieved from www.ncoa.org/FallsFreeNAP.

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