

REACHING HIGHER

Slip and Fall Prevention: Strategies & Best Practices

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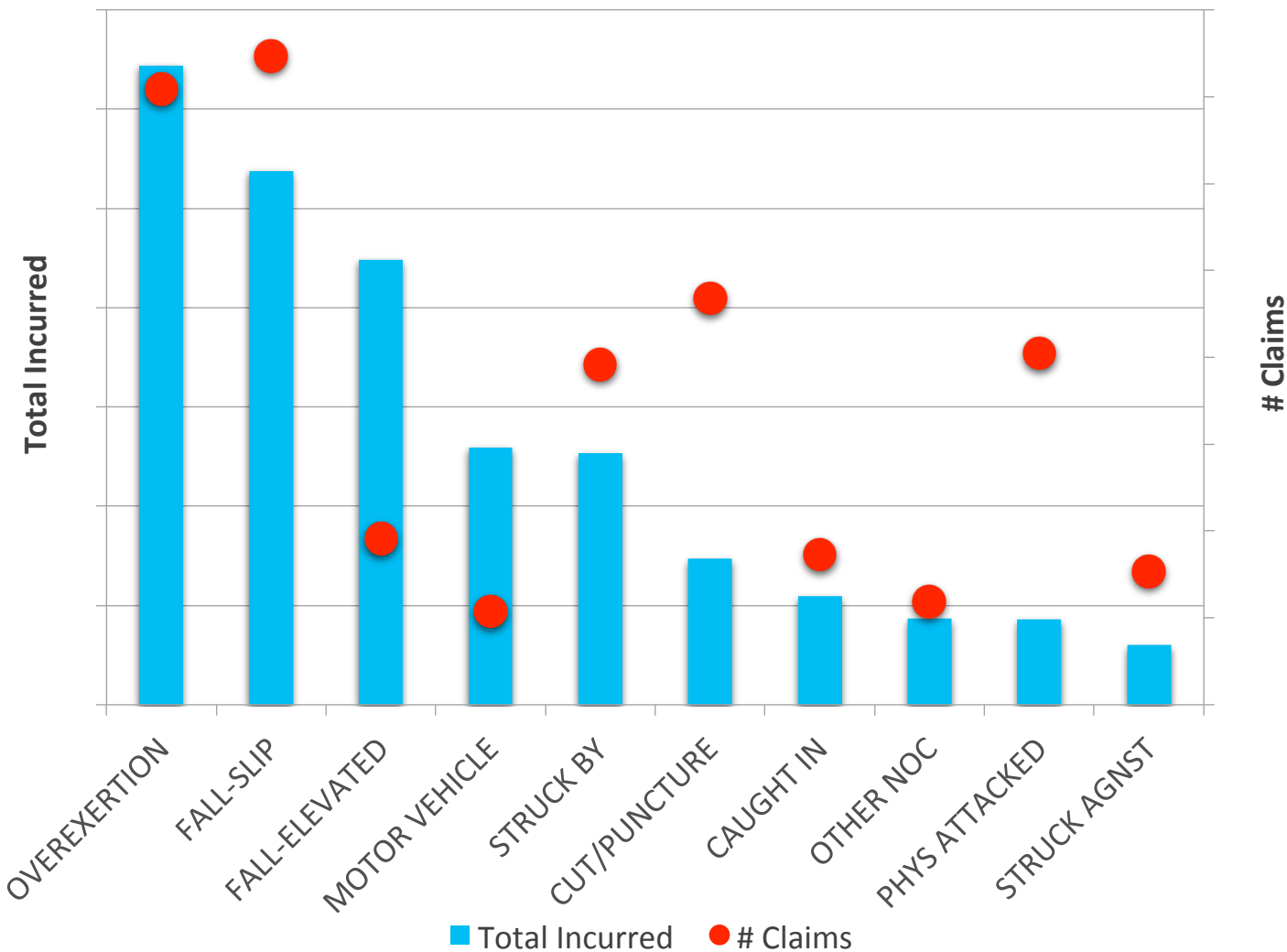
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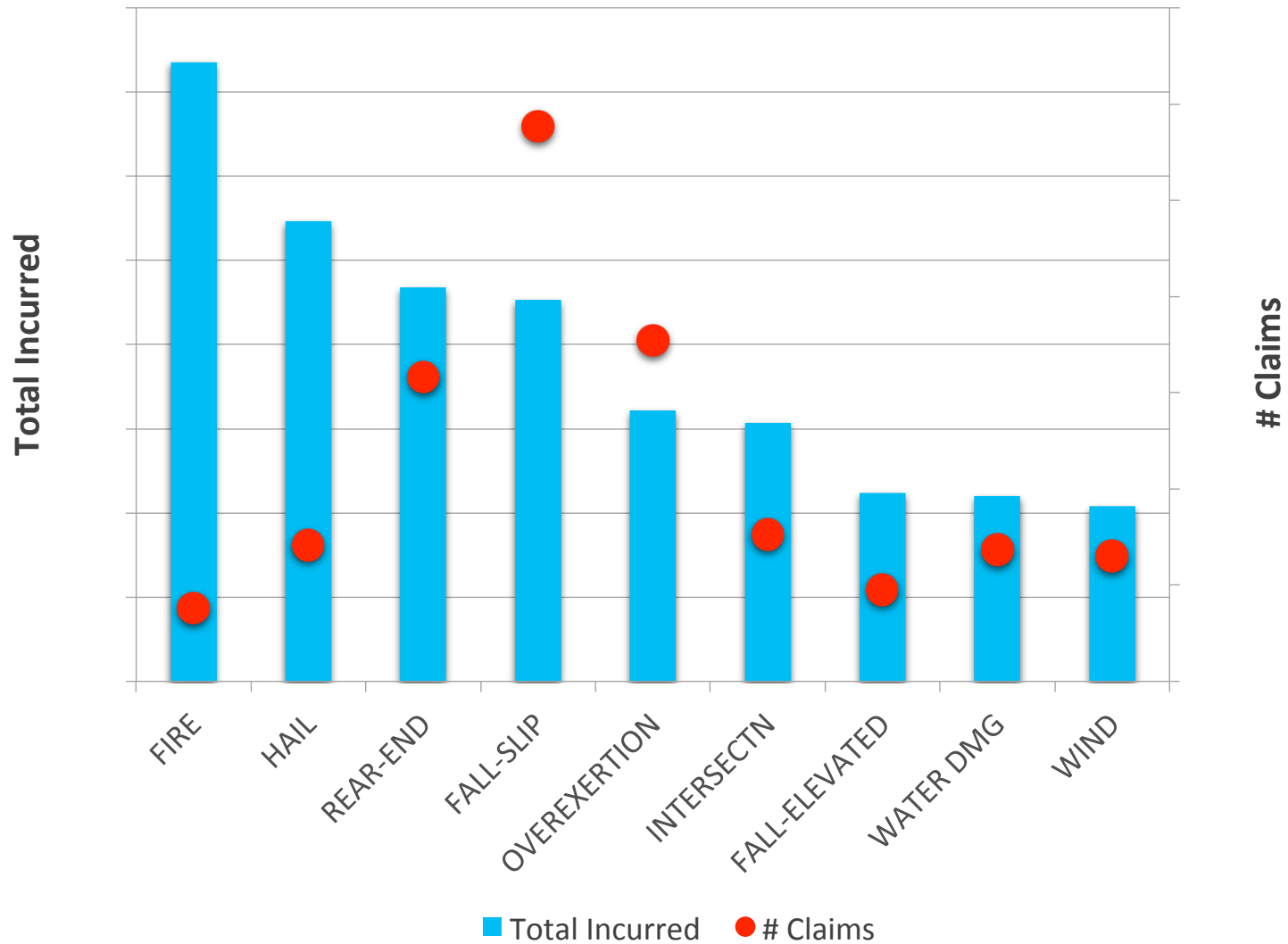
Agenda

1. Quantify the issue
2. Reasons people fall
3. Fall prevention practices
4. What's new

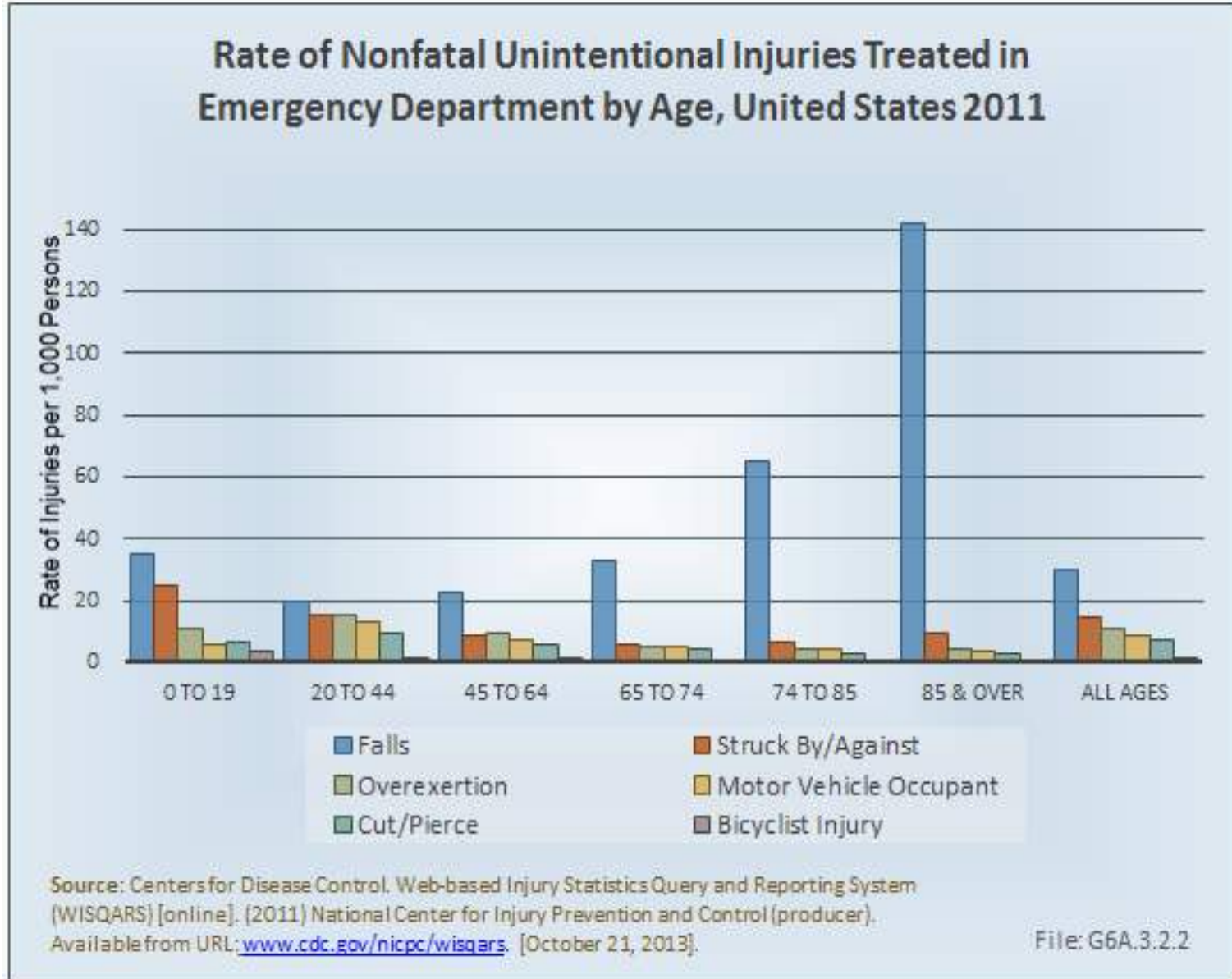
Top Workplace Injuries



Top Casualty Losses

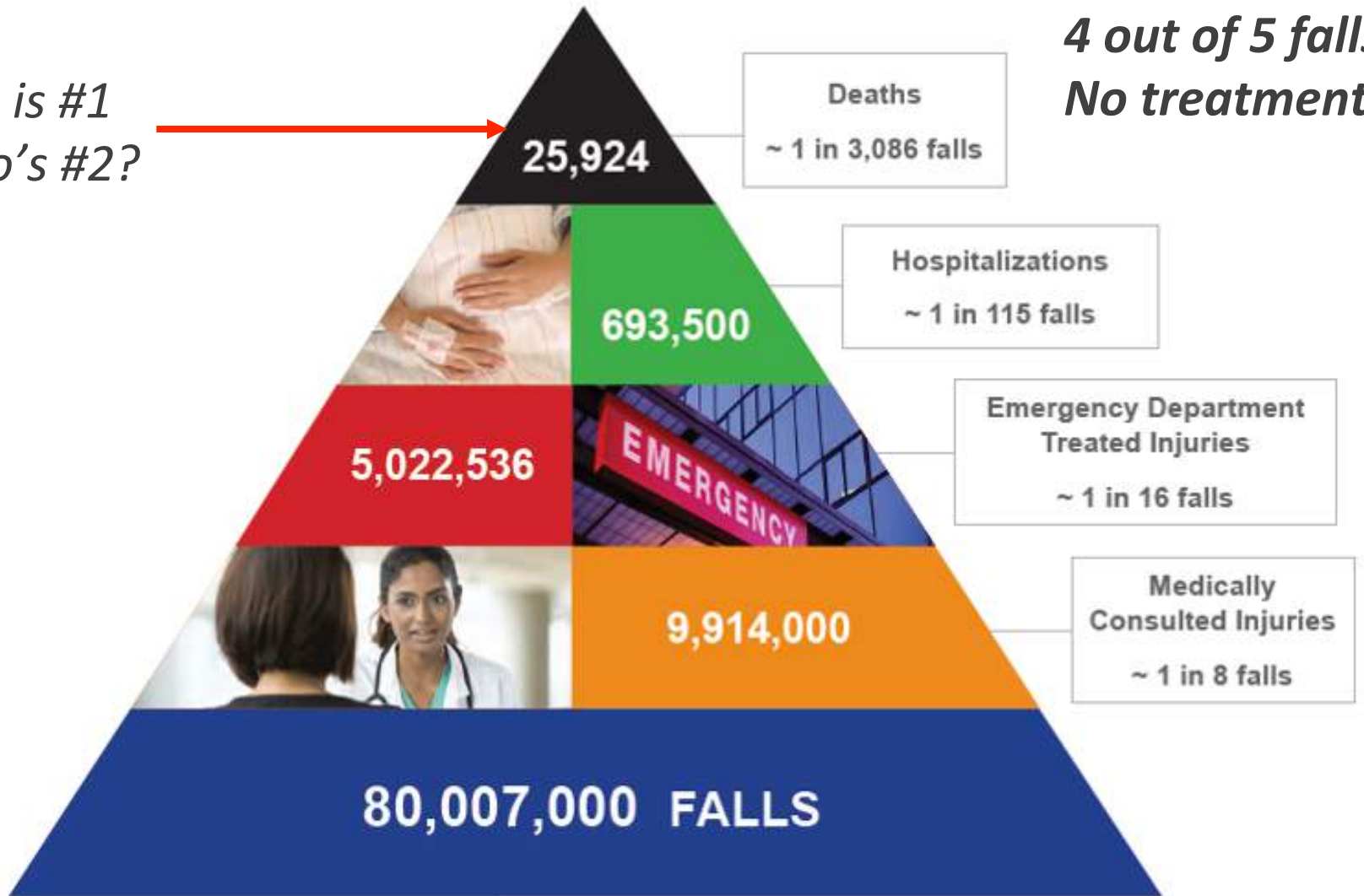


Not Just A Senior Issue



National Statistics - Falls

USA is #1
Who's #2?



Why Do people Fall?

Critical Environmental Hazards

- Uneven surfaces *#1 Issue as we age*
- Slippery surfaces
- Obstacles

Personal Risk Factors

- Complacency
- Distractions
- Personal health factors

Personal Risk Factors

- Lower body weakness, ankle flexibility
- Arthritis and impaired gait
- Taking 3+ prescriptions
- Vision impairment or age-related factors
 - More light needed as we age
 - Glare and bright sunlight
 - Reduced contrast sensitivity
- Not sensitive to the risks & consequences**

It Can't Happen To Me



Dark, Icy, Uneven, Carrying Bulky Load

Distracted Walking



Distracted Walking





Critical Environmental Hazards

- 1. Uneven surfaces**
- 2. Slippery surfaces**
- 3. Obstacles**

Uneven Surfaces – Obvious?



Slab settled 2", broken hand

Less Obvious Hazard



Snow/ice accumulation is a clue

Repairs - Mud jacking



Same area after repairs

McFall



1" raised edge. Person with walker fell face-first

Which Is Safer?



Subtle Risk = Complacency?



5/8" raised edge = broken wrist

Preventing Trips?



Hall Of Shame



Eliminating hazard is always best!

Unmarked Change In Elevation



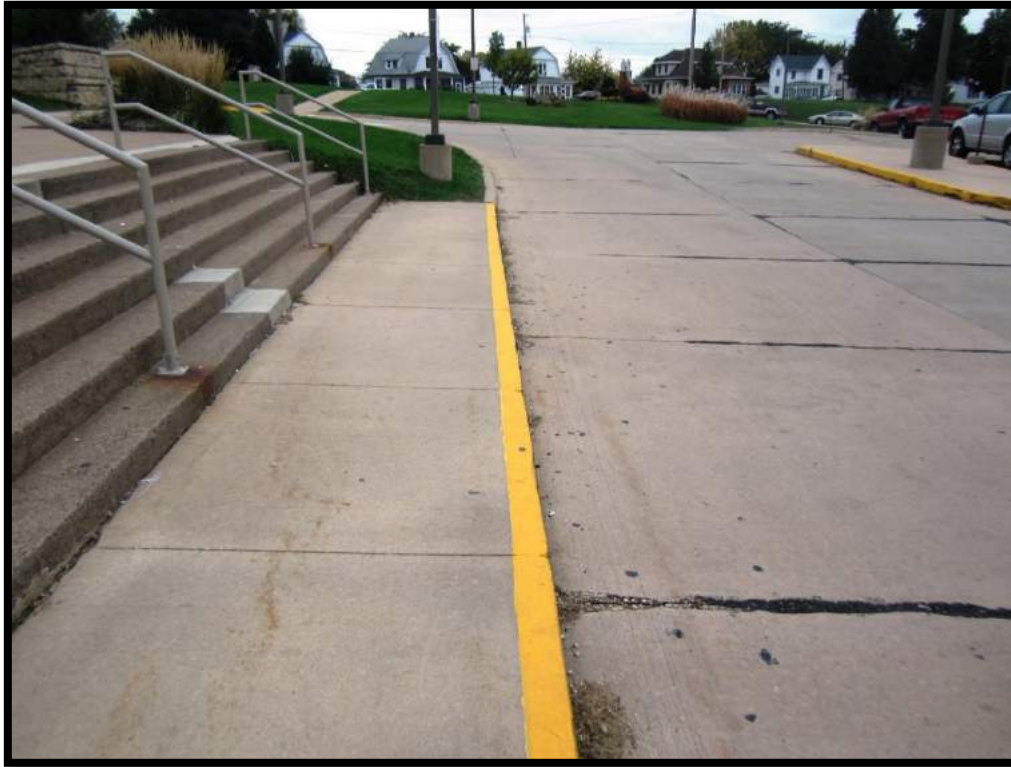
Motel Misstep – broken leg

Fall Risk? Bank On It!



**Customer stumbled at curb when leaving bank
Broken collarbone, concussion**

Increase Visibility/Awareness



4" wide, contrasting color, slip resistant

Reactive vs. Proactive

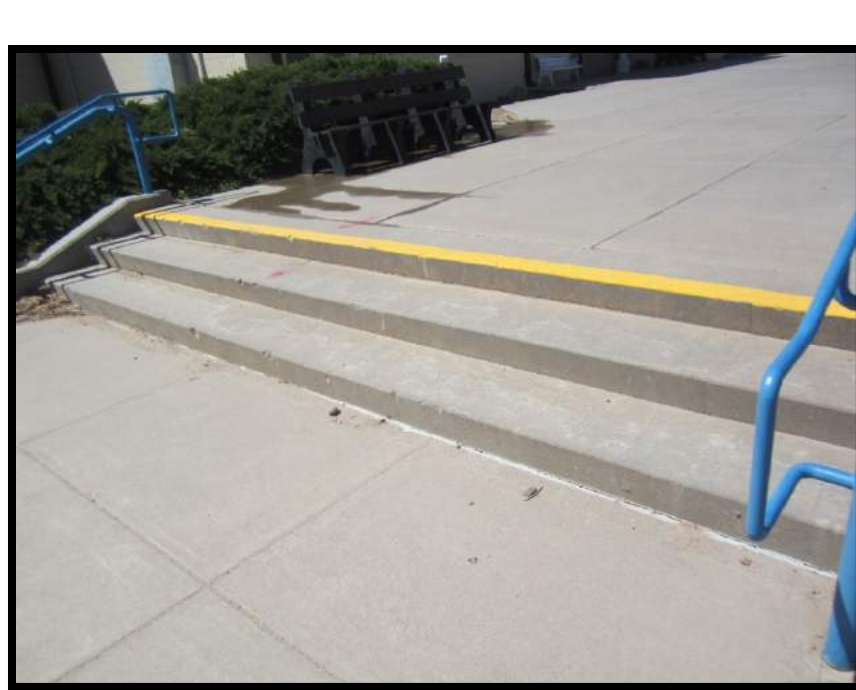


Raised edge = broken wrist. Painted afterwards

Unmarked Short Flight Stairs



Short Flight Stairs



Stripe each edge and use mineral aggregate

Flared Side Not Marked



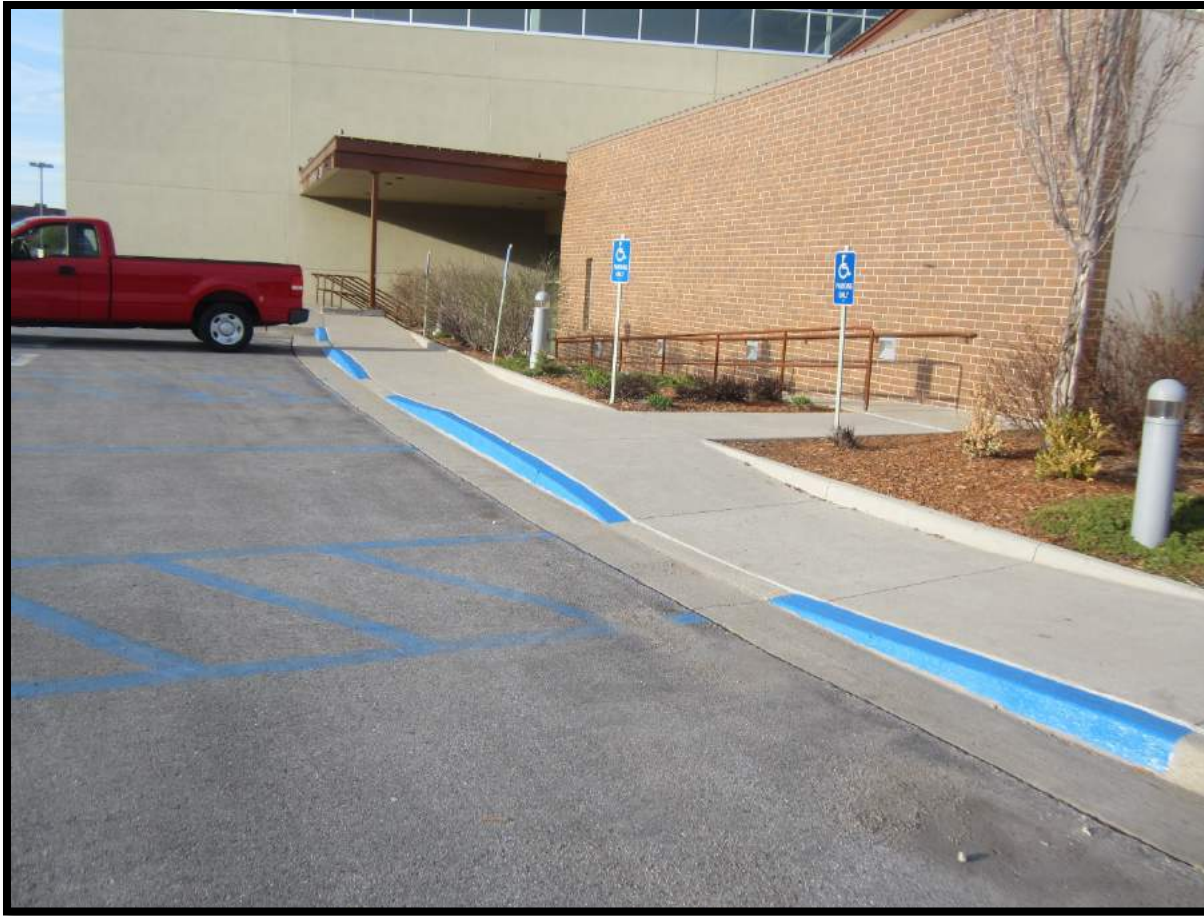
Concrete – asphalt transitions often uneven

Ramp Edge Not Marked



5/8" high here. Stumbled, fatality

Best Practice



Highlight flared sides

Use mineral aggregate for slip resistance

Missing The Mark



Don't paint flat section – idea is to highlight flared sides

Don't Forget Traction



Low traction, need mineral aggregate

Built-Up Curb Ramps



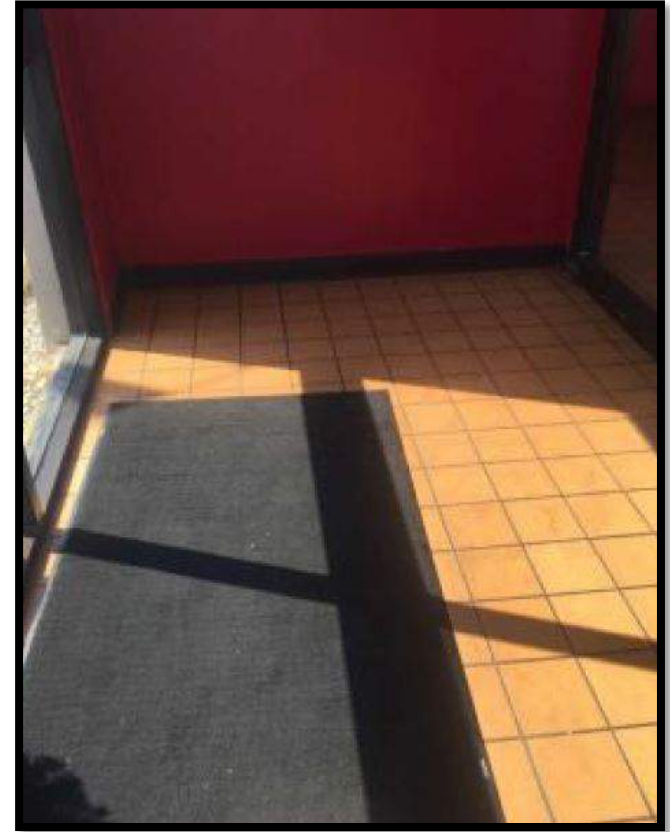
Poor visibility – broken femur

Solution - Awareness



Paint or stain sloped surfaces

Slippery Surfaces



Puddles = Wet shoes = Broken femur

Contributing factor: ceramic tile traction, small mat

Floor Traction – ANSI/NFSI Standards

- ✓ **ANSI/NFSI B101.0 2011: SCOF ≥ 0.6 high traction, .4 – .6 moderate**
- ✓ **ANSI/NFSI B101.3 2012: DCOF ≥ 0.42 high traction, .3 -.42 moderate**



Floor Traction – Senior Campus



Low traction ceramic tile, wiper mat not effective

Floor Traction – Senior Campus



Simple treatment – now high traction, no mat needed

Floor Traction – Senior Campus



Note water beading

Poor lighting too!

Showers need more help, recommend SCOF > 0.8

Floor Traction – Senior Campus



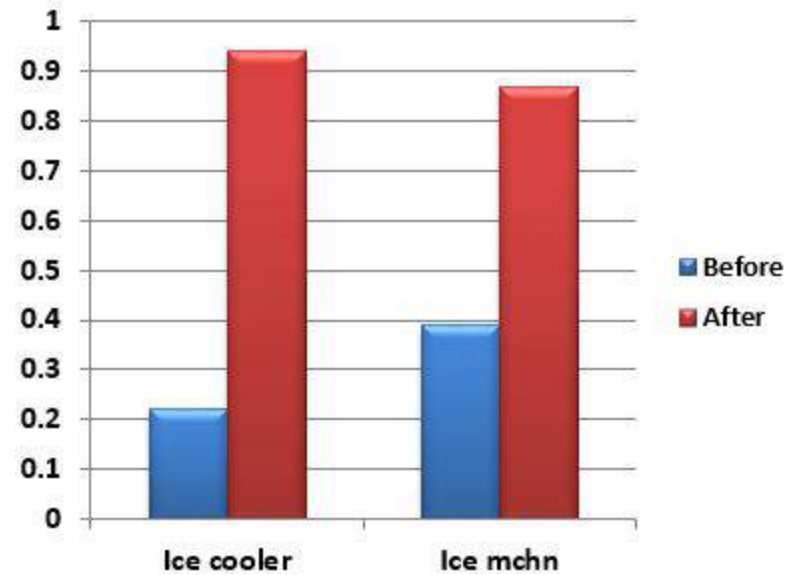
	Traction (Wet SCOF)			Values
Pool deck - epoxy coating			↔	1.17 - 1.27
Pool shower - ceramic	↔			0.45
Entrance to locker room - ceramic			↔	.93 - .97
Mens locker room shower - ceramic	↔			.35 - .47
Shower by door to pool - ceramic	↔			.39 - .43

Floor Traction – More Is Better



Crazy use of a mat

Store 130 Traction Study



Floor Traction



Ceramic tile, unknown traction, fell when turning

Floor Cleaning Method



★☆☆☆☆ Left the bathroom tile so slick I skidded and fell ...

By [REDACTED] on June 17, 2015

Left the bathroom tile so slick I skidded and fell when my foot landed on the tile from the carpet.

Floor Maintenance

Food Prep Areas: Bristle brush and extraction

- Used in 3,800 McDonalds locations
- Certified by NFSI



Variable/Unknown Traction



**Abrupt change in traction, turn. Snowy day. Wet soles?
Shoulder and head injuries**

Got Traction?



Rainy day but no puddles. SCOF = 0.15

Traction



Abrupt change in traction at ER entrance

Slip Resistant Footwear



*Studies show at least 50% reduction in slips**

- SNEEZED-BOOT SLIPPED-FELL-DISLOCATED SHOULDER
- WEARNG FLIP FLOPS SLIPPD ON WET FLOOR- DIED

* Liberty Mutual Research Institute: Slips and Falls in Restaurants, 2011

Poor drainage/water management



Slippery algae, neck/back injuries

Directional Drainage



Thaw/Refreeze



Brain Injury Facility - Poor drainage design

Be Cautious Going Thru Doors!

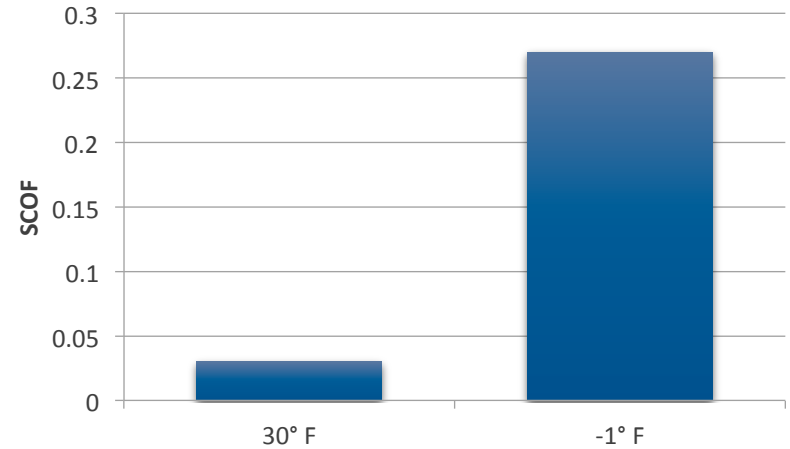


**Not Visible From Outside
Not Expected**

Thaw/Refreeze



Ice Traction vs Temperature



37° air temperature at 7:00 am
22° pavement temperature

Snow/Ice Management



- Have a site plan
- Depth/weather triggers
- Timing. Coordinate parking, plow after hours
- Salt services
- Thaw/refreeze follow up

Snow/Ice Management



Review site with contractor or staff before winter
Identify problem areas and obstacles for plows

Thaw/Refreeze: Snow Plow Strategy



Thaw/Refreeze



Ice not expected, was due to roof melt. No gutters

Cargill SafeLane® Coating

First Outdoor Overlay Solution Certified by NFSI



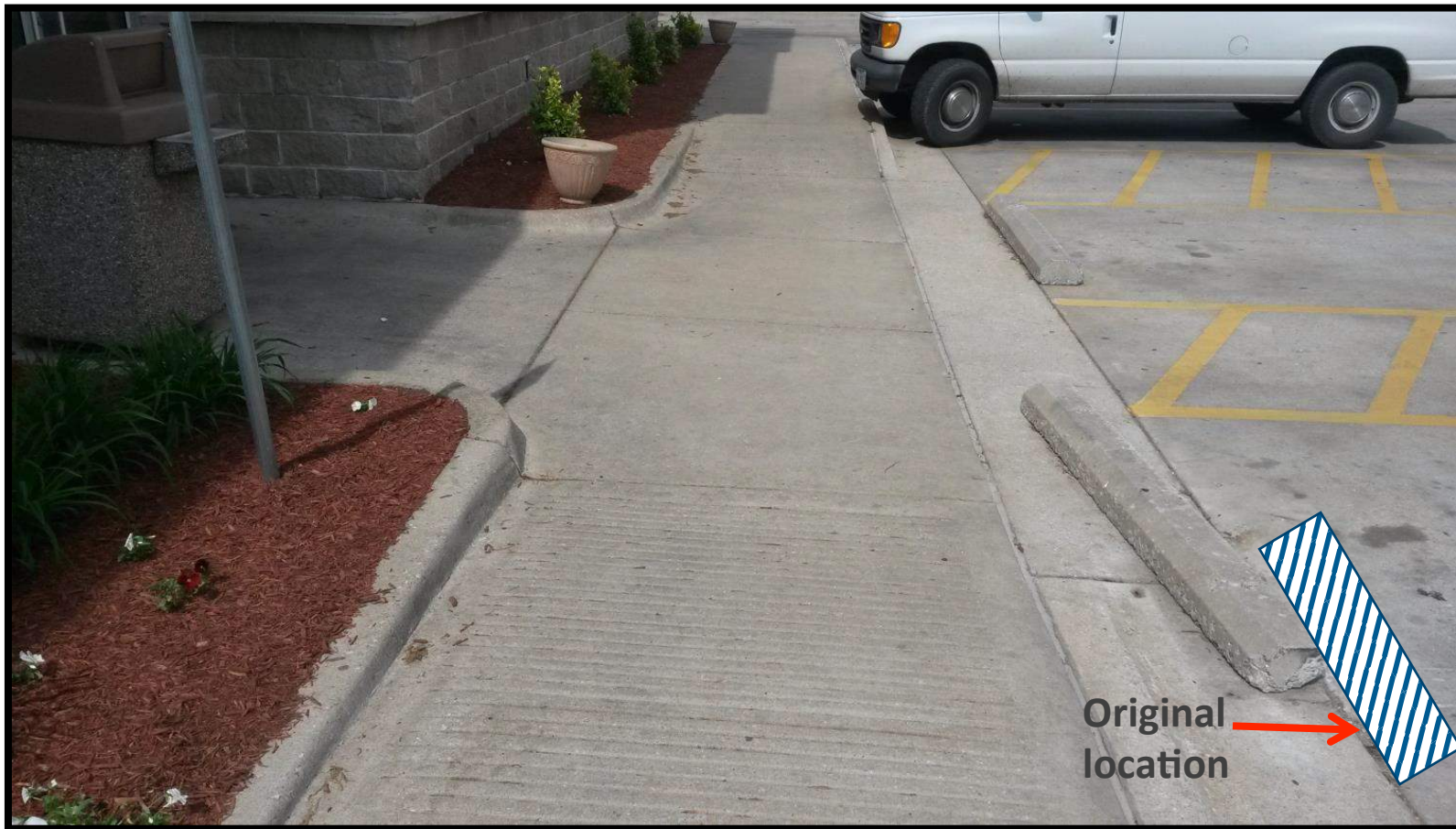
Pre-apply brine with tank sprayer, 2.2 lbs salt per gallon

Obstacles



Anything wrong here?

Tire Stop On The Move



Fatality

Scan For Obstacles



Near miss
Someone will trip here

Maintenance Activity



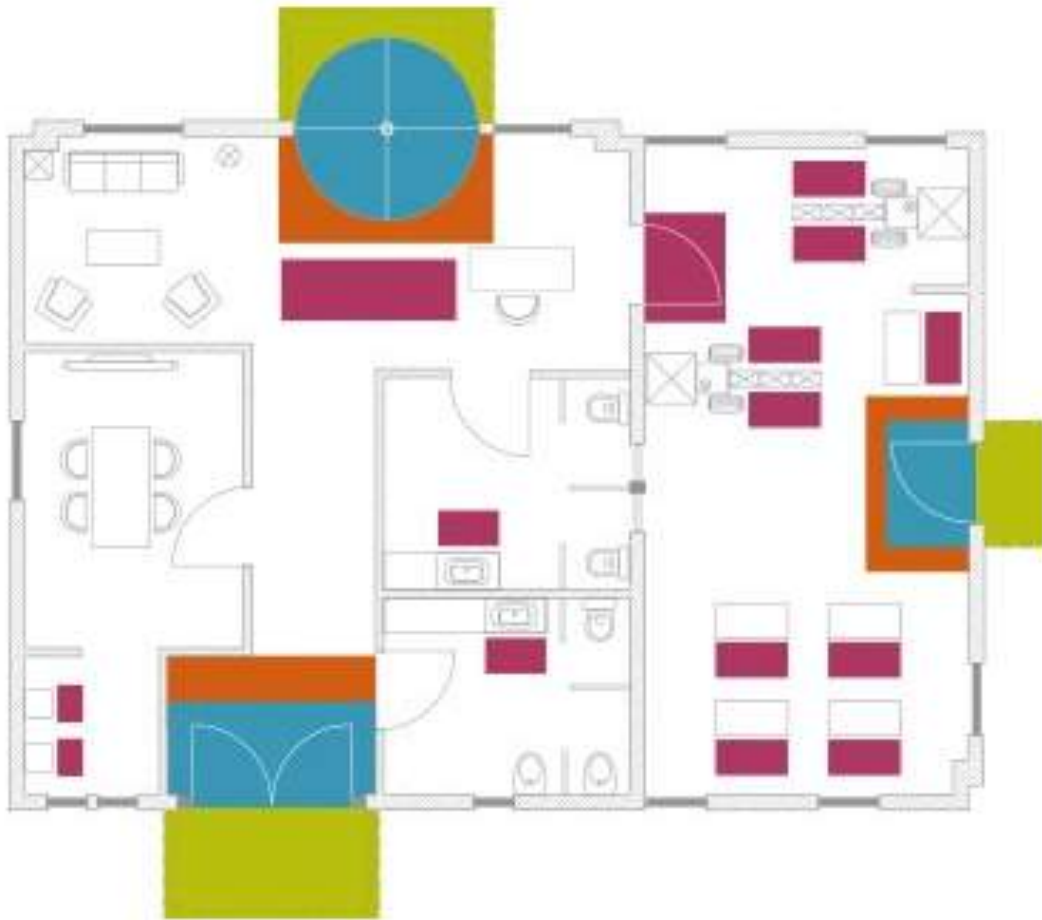
Tripped on hose, fractured hand





Maintenance Activity



**\$35,000 payout (injury) at this slot machine
Crowds & distractions**

Mat Strategy



-  Outdoor scraper
-  Dual action: scrape/absorb
Walk-off carpet tiles
-  Wiper action
-  Wet areas or anti-fatigue

Mat Strategy



Outdoor scraper

Outside door



Dual action: scrape/absorb or
Walk-off carpet tiles

Inside doorway



Mat Strategy



Wiper action

**Additional walk off
non-slip backing**



Wet areas or anti-fatigue



Making Mats Safer



Edge taping

Grippy Mat



Disposable wiper mats – adhesive backed

More Harm Than Good?



Curled edge kicked up - Shoulder and hip injuries

When Mats Attack



Tripped when leaving, shoulder fracture

Putting It All Together

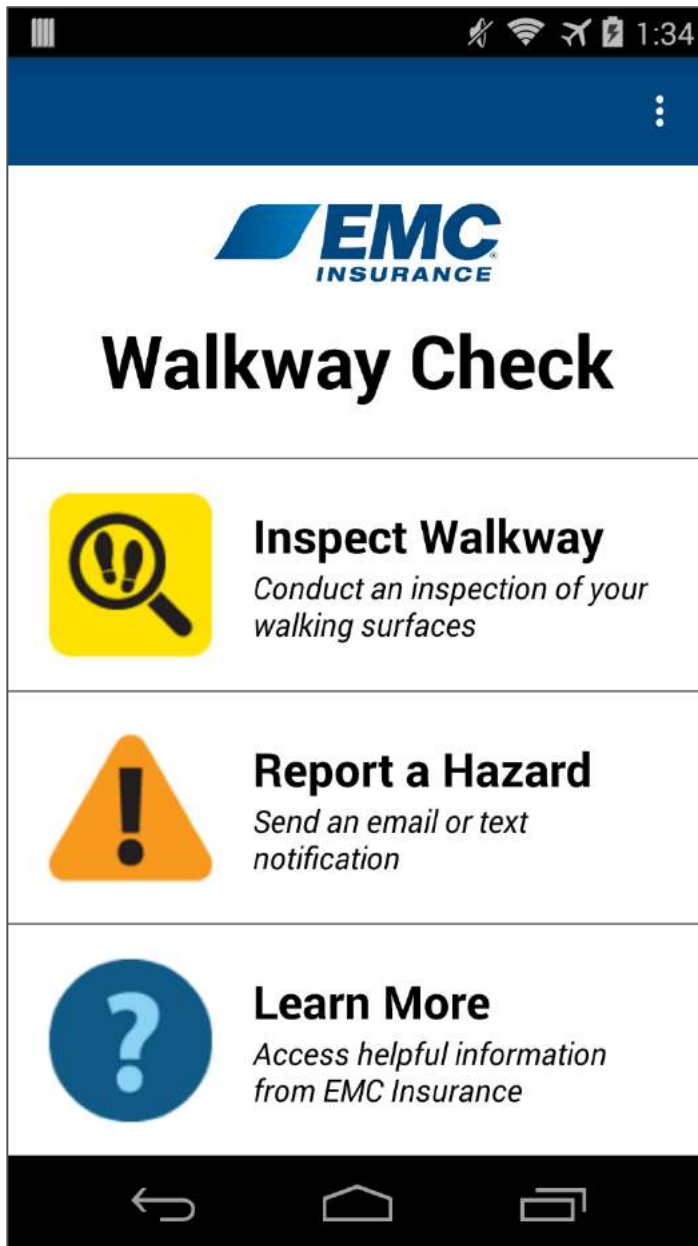
Walking Surface Safety Program

1. Train staff to recognize & correct or isolate hazards
 - ✓ Walkway safety basics, floor maintenance procedures, proper use of signs, spill clean up
2. Perform regular walkway audits, include lighting *
3. Provide easy way for employees to report hazards *
4. Test hard-surfaced flooring for traction. Choose the right floor type (ANSI B101.5, high traction)
5. Written snow/ice management program
6. Mat safety program: when/where, inspect/replace
7. Require appropriate footwear

* Try EMC's Walkway Check App



What's New?



Addressing Human Factors



Human Factor Training



Walking and Working Surfaces, 1910.21



Walking/working surfaces rule will be finalized before January, David Michaels says

October 19, 2016 · No Comments



Walking and Working Surfaces, 1910.21

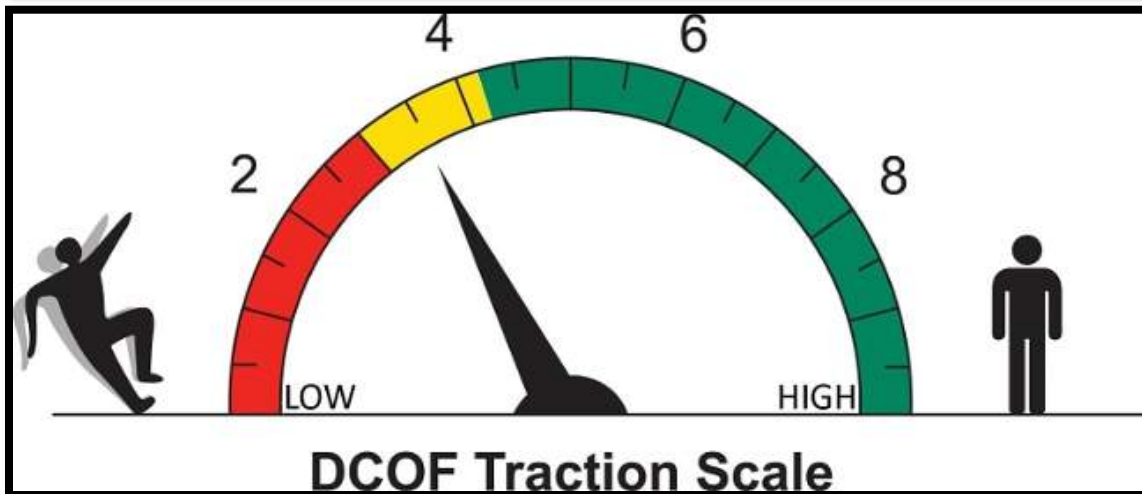
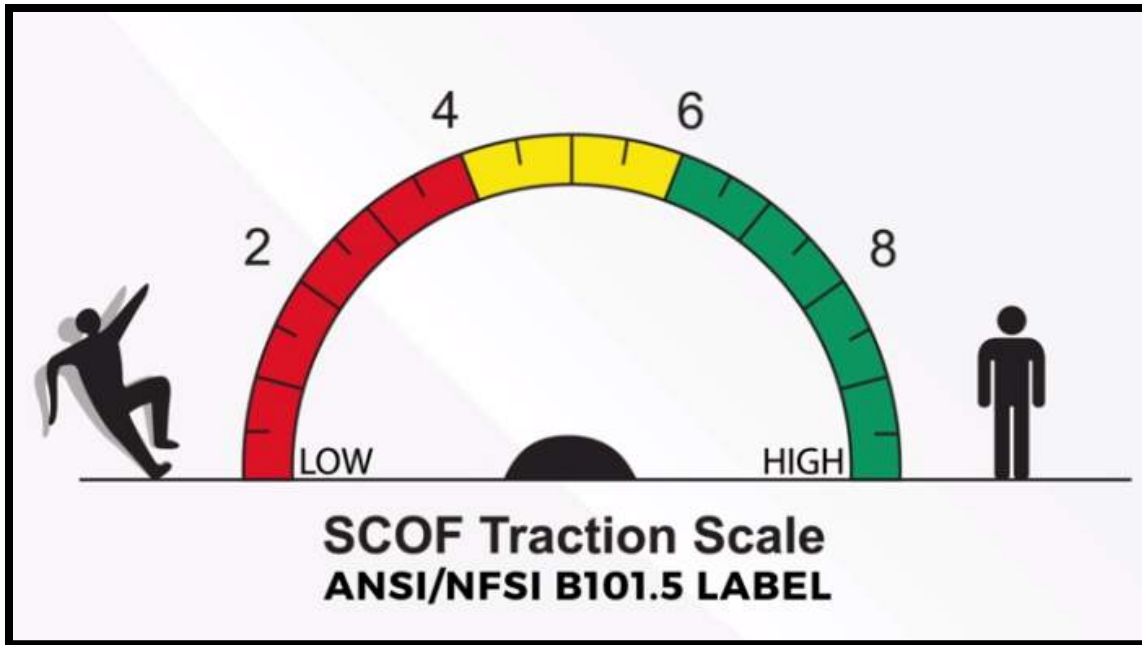
- (d) ***Inspection, maintenance, and repair.*** (1) The employer shall ensure through **regular and periodic inspection** and maintenance that walking and working surfaces are in safe condition for employee use.
- (2) The employer shall ensure that all **hazardous conditions** which are discovered are **corrected, repaired**, or temporarily guarded to prevent employee use. Repairs shall be made in a manner that will **restore the walking and working surface to a safe condition** for employee use.
- (3) Only **qualified persons** shall be permitted to inspect, maintain or repair walking and working surfaces except for the incidental cleanup of non-toxic materials.

New Standard (coming 2017)



**ANSI/NFSI B101.7 Standard Test Method for Lab
Measurement of Footwear Outsole Material Slip Resistance**

New Flooring Label (voluntary)



TCNA Updated Test Method: AccuTest



DCOF AccuTest replaces ASTM C1028

Uses BOT-3000, 0.42 is high traction threshold

Uses sodium lauryl sulfate, a common real world residue

count on



FOCUSED