



at Education Development Center



## Playground Safety Having Fun and Staying Safe

April 27<sup>th</sup>, 2016

### **Tech Tips**





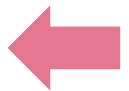
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This session is being recorded

#### **Presenters**

**Heather Olsen** 



**Amy Hill** 





# Playground Safety: Having Fun and Staying S.A.F.E

Presented by:
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Associate Professor, University of Northern Iowa
Executive Director, National Program for Playground Safety



## Status of Playground Safety in the U.S.

- Playground injury trends
- Description of Agencies/Organizations addressing guidelines and standards of playgrounds
- Overview of a 20-year project promoting playground safety
- SAFE™ Playground Injury Prevention Model



## **An Overview Of Playground Injuries**



## Why Worry About Playground Safety?

In the U.S. between 2001 and 2008, an average of 218,851 children received emergency care for injuries that occurred on playground equipment.

Injuries acquired were serious enough that emergency medical treatment was necessary.

CPSC October 29, 2009



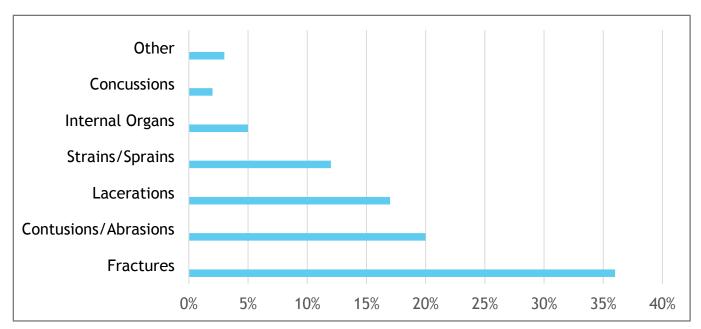
# 40 deaths were associated with playground equipment between 2001 and 2008

- Average age was 6 years-old; median age was 4 years-old
- 27 deaths were the result of hangings or other asphyxiations
- 7 deaths were the result of head or neck injuries

CPSC October 29, 2009



## What are types of injuries children are having at playgrounds?



CPSC October 29, 2009



## On what type of equipment are children being injured?



23% -climbers

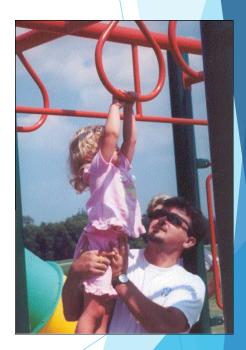
22% -swings

17% -slides

9% -overhead

ladders

CPSC October 29, 2009





### Why do these injuries occur?

- Falls to surface
- Gaps and entanglements
- Unsecured fixtures
- Splinters, cuts, gashes
- Broken/missing parts
- Obstacles in the pathway

CPSC October 29, 2009



## Effect Of Playground Injuries



## How do these injuries affect environments?

#### **Social**

Injuries are long lasting to an individual Family life

School and home interactions

Extra care for children



#### **Economic**

\$1.2 billion dollars are spent on playground injuries

Consider the injury cost, family cost for loss of work, and litigation costs for a broken arm

#### **Political**

Distrust of the agency you work for

Negative rather than positive publicity

Governmental distrust



# Recommendations for playground injury prevention

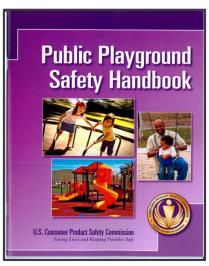


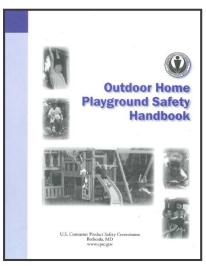
# Playground Guidelines and Standards



## Consumer Product Safety Commission

www.cpsc.gov (800) 638-2772 Ext. 300







#### **ASTM International**

Creates standards for the technical specifications of playground equipment

- 1487 Playground equipment standard
- 1292- Surfacing Standard
- 1951 Accessibility
- 2049 Standards for Fences and Barriers

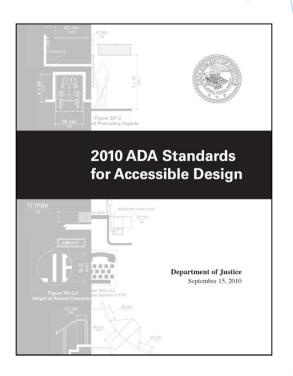




#### Americans with Disabilities Act (ADA)

2010 ADA Standards for Accessible Design

www.access-board.gov





## National Program for Playground Safety

Established in 1995 with a funding grant from the Centers for Disease Control and Prevention (1995-2005) to raise awareness for the need for playground safety and injury prevention.

NPPS's role continues to advocate and education at the local, state, and national level.

2006-today operating with services and products.

Promoting and advocating for SAFE™, inclusive, and high quality play areas for children.



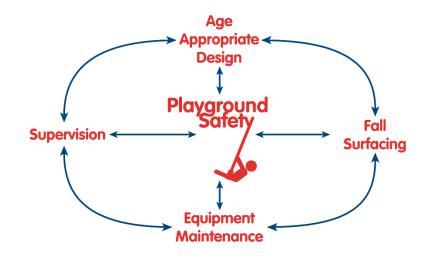






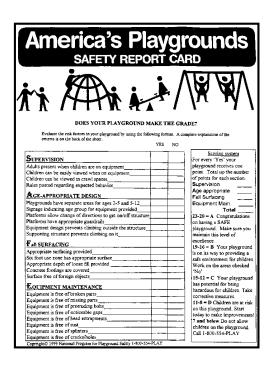


## Risk Factors In A Play Environment





#### **NPPS's Report Card**



- National Study Conducted in 1999 & 2004
- Visited playgrounds in every state
- Visited
  - Schools
  - Childcare Centers
  - Parks

Free download at NPPS's Report

<u>Card</u>

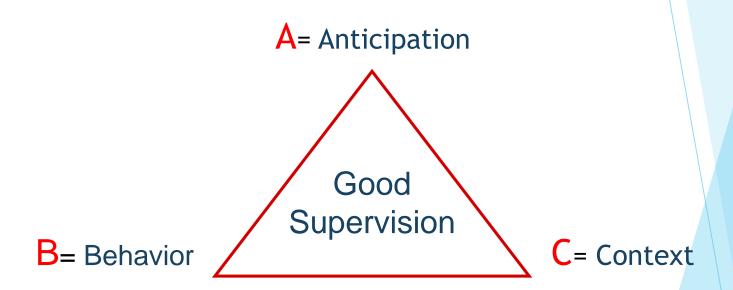


## Supervision

**Risk Factor #1** 



#### **Supervision Model**





### **Supervision Kit**





# Appropriate Developmental Design

**Risk Factor #2** 





- 30% under age of 5
- Head/face injuries account for 49%
- 10% of all injuries in commercial child care facilities





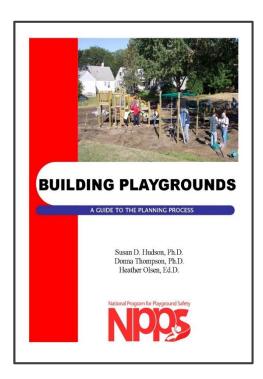


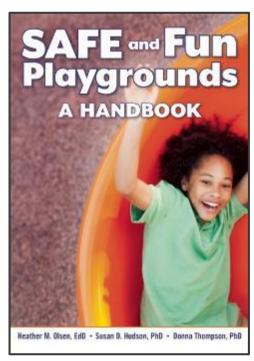
## One Size Does Not Fit All Children

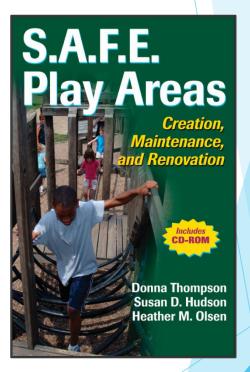
- Consider the Physical, Emotional, Social, and Intellectual abilities of children.
- Playground equipment standards (ASTM/CPSC)
  - 6 months 23 months
  - 2-5 years of age
  - 5-12 years of age



#### **Planning Is Critical**









## Fall Surfacing

**Risk Factor #3** 



#### How are children getting hurt?



- 70 % of reported incidents.
- Equipment over 8 feet has close to 3 times the injury rate of equipment under that height

(Laforest, et al & Villan, et al)

## CPSC & ASTM Warning





Installation over a hard surface such as asphalt, concrete, or packed earth may result in serious injury of death from falls (ASTM & CPSC).



### SAFE™ Surfacing Decision-Making Model





# **Equipment Maintenance**

**Risk Factor #4** 



#### **Adopting A Maintenance Policy**

This policy constitutes the ground rules for who, what, when and where of maintenance.

The policy also is a written statement demonstrating the "Standard of Care" for outdoor play areas.



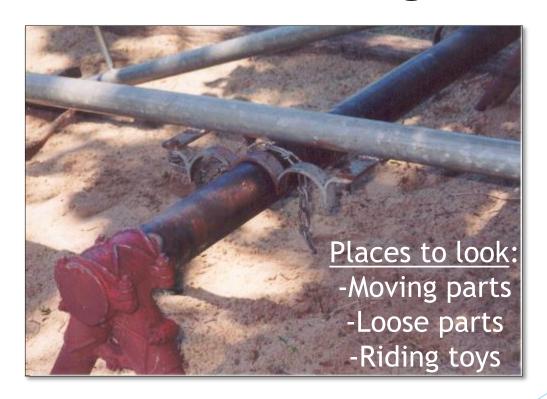








#### **Crush and Shearing Points**





### **Entanglement and Impalements**

S-hooks should be completely closed so a dime can not pass through the opening.





### **Suspended Hazards**

Strangulation hazard









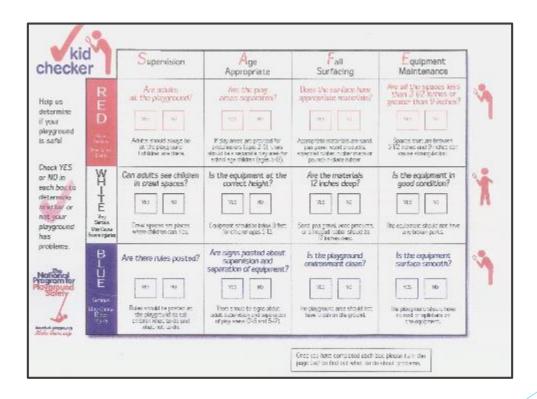
### **Environments need to be inspected on a regular basis**

Name of Playground	Date
Check the box after each step is completed and note	where maintenance is needed.
	Needs Maintenanc
General Upkeep	
I Look for miscellaneous debris, broken glass, need	les, litter, ropes, etc.
Check for missing or full trash containers.	-
Search for damage to the equipment.	
☐ Check for obstacles in equipment use zones.	
Surfacing	
Check for inadequate levels of surfacing materials.	
□ Check for areas of compaction, kick-out, or wear.	
□ Look for potential drainage problems.	
□ Examine sidewalks, paved surfaces, steps, and pla	itforms for loose surface
materials and debris.	
General Hazards	
☐ Check for sharp points, corners, and edges.	
□ Look for protrusions and projections.	
☐ Check for missing or damaged protective caps or	olugs.
Search for potential clothing entanglement hazard	s such as gaps.
II Look for pinch or crush points and exposed movi	ng parts.
□ Check for potential trip hazards.	
Check for low hanging tree branches.	
Equipment Deterioration	
☐ Check wooden equipment for splinters, checking,	large cracks, warping, and rot.
□ Look for rust, corrosion, or chipped paint on met	
☐ Inspect for holes and cracks in plastic structures.	
□ Check for unstable or exposed anchoring.	
Hardware Security	
☐ Check for loose or worn connecting, covering, or f	astening devices.
□ Look for open S-hooks.	
□ Examine all moving parts for wear.	
□ Check for kinked, twisted, or broken chains.	
Completed By	

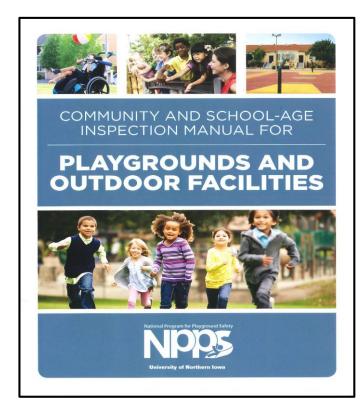
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DOES YOUR PLAYGROUND M	AKET	HY CDA	nr.
PODE TOURT ENTONOUND IN		III. GICI	DL.
Evaluate the risk factors in your playground by using the follo	wing for	мац. А соп	aplete explanation of the
criteria is on the back of the shoet.	YES	NO	
	1133	NO	
Supervision	_		Scoring system
			For every 'Yes' your
Adults present when children are on equipment		$\vdash$	playground receives one point. Total up the number
Children can be easily viewed when on equipment			
Children can be viewed in crawl spaces		-	of points for each section.
Rules posted regarding expected behavior		-	Supervision
AGE-APPROPRIATE DESIGN		1 1	Age appropriate
Playgrounds have separate areas for ages 2-5 and 5-12	_	-	Fall Surfacing Equipment Main
Signage indicating age group for equipment provided	-	-	
Signage indicating age group for equipment provided	_	-	Total
riationns allow change of directions to get on/off structure. Platforms have appropriate guardrails	_	-	23-20 = A Congratulations
entrorms have appropriate guardrans  Quipment design prevents climbing outside the structure	_	-	on having a SAFE
Equipment design prevents climbing outside the structure		-	playground. Make sure you
supporting structure prevents cumbing on it	_	-	maintain this level of
Fall SURFACING			excellence
Appropriate surfacing provided		$\overline{}$	19-16 = B Your playgroun
Six foot use zone has appropriate surface			is on its way to providing a
Appropriate depth of loose fill provided			safe environment for childre
	-		Work on the areas checked 'No!
		1	
		-1	15-12 = C Your playgroun has potential for being
Surface free of foreign objects			
Surface free of foreign objects			
Surface free of foreign objects  EQUIPMENT MAINTENANCE			hazardous for children. Tak
Surface free of foreign objects  EQUIPMENT MAINTENANCE Equipment is free of broken parts	_		hazardous for children. Tak- corrective measures.
Surface free of foreign objects  EQUIPMENT MAINTENANCE  Equipment is free of broken parts  Equipment is free of missing parts			hazardous for children. Tak corrective measures. 11-8 = D Children are at ris
Surface free of foreign objects  EQUIPMENT MAINTENANCE  Equipment is free of Broken parts  Equipment is free of missing parts  Equipment is free of prortuding bobts			hazardous for children. Tak corrective measures. 11-8 = D Children are at ris on this playground. Start
Surface free of foreign objects  EQUIPMENT MAINTENANCE  Equipment is free of broken parts  Equipment is free of missing parts  Equipment is free of forticating bolts  Equipment is free of forticating bolts  Equipment is free of forticating bolts			hazardous for children. Tak corrective measures. 11-8 = D Children are at ris on this playground. Start today to make improvement
Concrete Footings are covered Surface free of foreign objects EQUIPMENT MAINTENANCE Equipment is free of broken parts Equipment is free of missing parts Equipment is free of noticeable gaps Equipment is free of noticeable gaps Equipment is free of head entrapments Equipment is free of frest			hazardous for children. Tak corrective measures. 11-8 = D Children are at ris

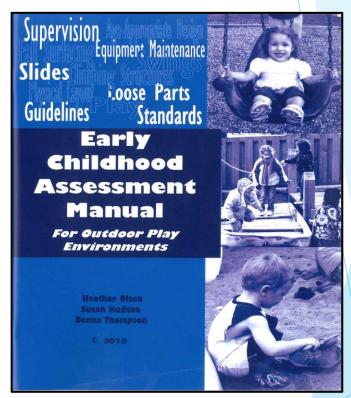


#### **Become a Kid Checker**









Resources to help keep environments SAFE™



### Recap: Playground Safety Simple Safety Tips

- Educate children, families, and local programs who serve children through trainings, social media, activities, and outreach programs.
- Check playgrounds to ensure environments are SAFE™
- Continue the conversation of playground safety at the local, state, and national level
- Use resources that are available



#### Resources

- To download the NPPS's Safety Report Card, Kid Checker program, and Playground Safety Educational Resources:
  - -www.playgroundsafety.org
- To download the Consumer Product Safety Commission's guidelines
  - -www.cpsc.gov/PageFiles/122149/325.pdf
- To learn more about playground injury data
  - -www.childrenssafetynetwork.org/injury-topics/playground-safety
- To participate in online certification training
  - -www.playgroundsafety.org
- To learn more about playground injury data
  - -www.childrenssafetynetwork.org/injury-topics/playground-safety
- To follow playground safety on Facebook and Twitter





### Safe at Play Program

Ann & Robert H. Lurie Children's Hospital of Chicago Injury Prevention and Research Center April 27, 2016





# Why Is a Children's Hospital Interested in Playgrounds?



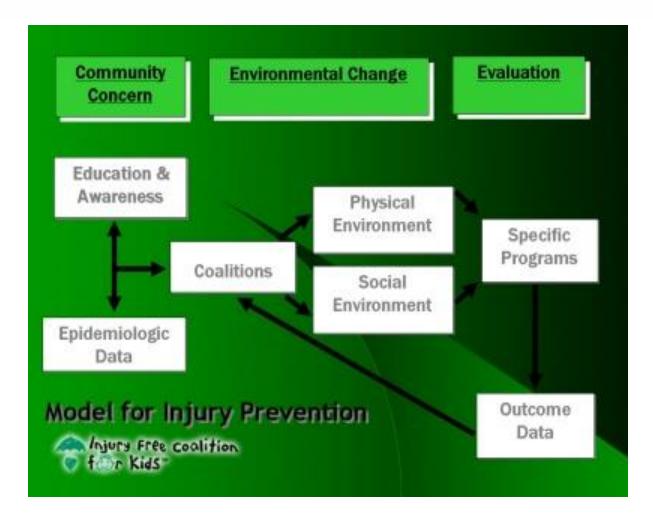


### Injury Free Coalition for Kids

- IFCK national program comprised of hospital-based, community oriented programs
- Started at Harlem Hospital by Dr. Barbara Barlow, a pediatric trauma surgeon
- Efforts anchored in research, education and advocacy
- All sites are physician led programs driven by the Coalition's mission: preventing injury to children
- Currently 30 sites located throughout the country
- Lurie Children's has been a site for more than 20 years

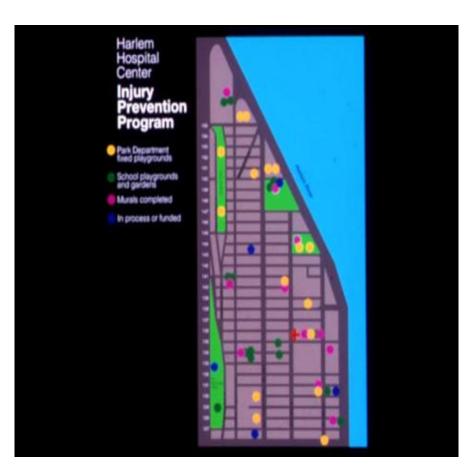


### Injury Free Coalition for Kids Model





### Harlem Hospital Program











### Playground Changes Made by Harlem Hospital

- Existing playgrounds were inspected, photographed, and graded by Consumer Product Safety Standards, and
- Reports were sent to school and parks and recreation officials. The reports spurred the Department of Parks and Recreation to replace outdated, unsafe equipment in all the public parks in Harlem
- Cement and asphalt surfaces underneath play equipment were replaced with more appropriate surfacing
- New playgrounds for the community schools and day care centers were built with a combination of private and public funds to provide alternative play areas to the streets.

<sup>\*</sup>Excerpted from - A National Program for Injury Prevention in Children and Adolescents: The Injury Free Coalition for Kids. *Journal of Urban Health*. 2005.





# Safe Playgrounds and Pedestrian Injury

- Traffic injuries were a leading cause of severe childhood injury in this population (16%), second only to falls (24%).
- During intervention period pedestrian injuries declined by 45%
- Interventions included renovating playgrounds, Safety Street program, Urban bicycle program
- Authors' conclusion Creating safe and accessible play areas may be effective in preventing traffic injuries to children in these communities

\*Durkin, MS, Laraque, D, Lubman, I, Barlow, B. Epidemiology and Prevention of Traffic Injuries to Urban Children and Adolescents. *Pediatrics*. 1999; 103(6).



### Concern About Overall Health of Children

- Physical play is associated with a decreased risk of obesity, improved self-esteem and improved academic performance (studies published in Active Living Research, Pediatrics and Pediatric and Adolescent Medicine)
- Playgrounds can play an important role in supporting physical activity and maintaining a health BMI in children, especially in dense urban environments like Chicago (studies published in Pediatrics and Health Place)
- Quality and accessibility of playground influence their safety and use (studies in Health Place, Journal of Community Health, Preventive Medicine)
- Poorly maintained playgrounds are less likely to engage children have been shown to contribute to higher injury rates (studies published in Psychological Science and Pediatrics)



- Playground Surveys and Inspections
- Playground Builds

### Two Components of Safe at Play





# State of Chicago Park District Playgrounds in 2005

- Many were more than 20 years old
- Most contained wood chip surfacing that was difficult to keep at appropriate depth – wood chip surfacing placed over concrete initially
- Funding of new/replacement playgrounds complicated
  - Chicago Park District subscribed to 1/3, 1/3, 1/3 formula
- Worked with Community Liaison at Chicago Park District to perform playground inspections as part of "building a case" for new playgrounds



### Playground Survey Project



- IPRC staff wanted to look at playgrounds city-wide not selected playgrounds
- Permission from Chicago Park District to work on this survey
- Partnered with Friends of the Parks
- Funding from Kohl's Cares
- Began surveying Chicago Park District Playgrounds in 2005
  - 500+ playgrounds in the Park District system
  - Use tool developed by the National Program for Playground Safety but changed slightly
  - Some years –all playgrounds surveyed
  - Some years just failing playgrounds from prior year re-surveyed
  - Last year oldest "new" playgrounds were surveyed



### State of Chicago Parks in 2005







### State of Chicago Parks in 2005



### What the survey looks for



- Age-appropriate equipment
  - Height and type
- Appropriate surfacing
  - Depth of wood chips or condition of rubber
- Equipment condition and maintenance issues
  - Stability
  - Broken/Missing equipment
    - Rotting wood
    - Head Entrapment
    - Entanglement/protrusion hazards
  - Swing s-hooks properly closed



#### **Chicago Playground Safety Report Card**

Playgr	ound	Name: Region: Date:	Location:
Numbe	er	GPS Longitudinal coord	GPS Latitudinal Coord
Yes	No	Comments	

AGE-APPROPRIATE DESIGN			
AGE AFFROMIATE DESIGN			
1.Playgrounds have separate areas for ages 2-5 and 5-12			
2.Platforms have appropriate guardrails			
3.Platforms allow change of directions to get on/off			
structure			
FALL SURFACING			
4. Suitable surfacing materials provided throughout			
playground such as loose fill (wood chips) or rubberized surfacing			
5. Height of all equipment is 8 feet or lower			
6. Appropriate depth (12 inches) of loose fill provided			
7. Six foot use zone has appropriate surfacing			
8. Concrete footings are covered by surfacing			
9.Surface free of foreign objects			
_			
EQUIPMENT MAINTENANCE			
10. Equipment is free of head entrapments – spaces			
measuring between 3.5 and 9 inches  11.Equipment is free of broken parts			
12. Equipment is free of missing parts			
13.Equipment is well-anchored and stable			
14. Equipment is free of protruding bolts and nails			
15.Equipment is free of rust and peeling paint  16. Equipment is free of splinters			
17. Equipment is free of cracks/holes in plastic equipment			
18. Swing links are strong – S-hooks are properly closed			
PHYSICAL ENVIRONMENT			
PHYSICAL ENVIRONMENT			
19.Tree limbs are well-trimmed and not close to			
equipment			
20. There are no tripping hazards such as tree roots,			
uneven concrete, etc.			
21. Playground is properly fenced from street traffic			
22. Equipment is located away from electrical posts			
TOTAL NUMBER OF YES/NO RESPONSES			=
TOTAL RAW POINTS	+	-	=
TOTAL SCORE			=
FINAL PERCENTAGE (Total SCORE/RESPONSES)			
,			



#### **Data Collection**

- Done in summer months
- 2-3 data collectors
- Alerted Chicago Park District when a major maintenance issue was present
- Have used Android phones and paper/pencil to collect data
  - Paper/pencil was quicker issue at playgrounds with WiFi



### Data Entry and Results

- Each playground received a score through a percentage basis
  - 70% or higher received a passing score
  - 69% and lower received a failing score



### Field Photos of Common Safety Issues

Head Entrapments

Rotting Wood







# Field Photos of Common Safety Issues





### Highlights of Results



- 2015 Surveyed first round of "Chicago Plays" (62)renovated playgrounds – all received a passing score
- 2014 Surveyed all playgrounds re-done (53) before "Chicago Plays" – all received a passing score
- 2011- Surveyed just failing playgrounds
  - 154 of 2010 failing playgrounds were surveyed
  - Mean playground score of failing playgrounds improved from 2010 61% to 67% in 2011
- 2010 All (459) surveyed
  - 73% mean score
- 2009 All (467) surveyed
  - 72% mean score



## **Pediatrics Study Published**

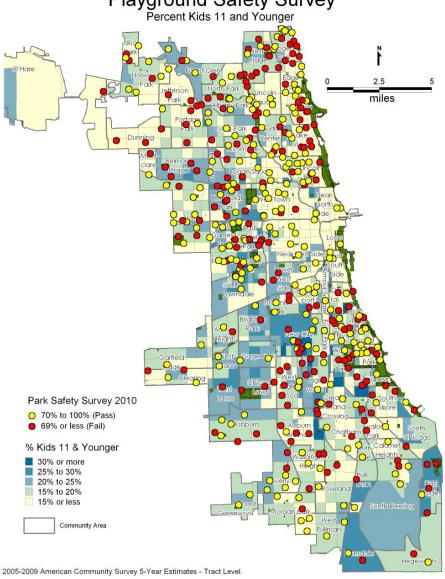
- February, 2013 Study published
- Examined results in depth with statistical analysis
- Used GIS to reveal visually any disparities between neighborhoods
  - Some findings
    - Playgrounds were more likely to fail because of problems with fall surfacing and equipment maintenance
    - Neighborhoods with a higher percentage of children, especially minority children, and a higher percentage of the population living in poverty had both fewer playgrounds and more failing playgrounds

Allen, E, Hill, Amy, Tranter, E, Sheehan, K. Playground Safety and Quality in Chicago. *Pediatrics*. 2013; 131; 1-9.



# 2010 Maps – Population of Children Playground Safety Survey Percent Kids 11 and Younger

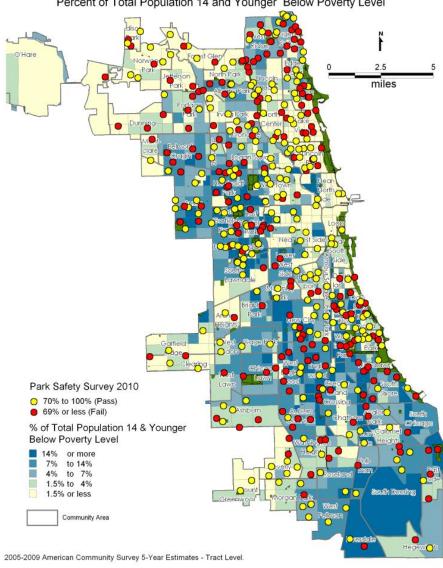






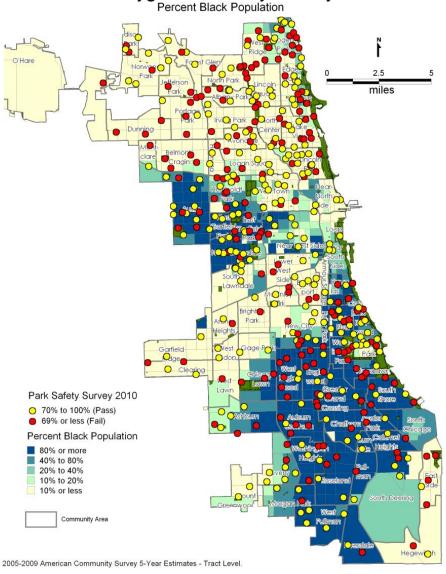
## 2010 Maps – Population of Children Below Poverty Line Playground Safety Survey Percent of Total Population 14 and Younger Below Poverty Level





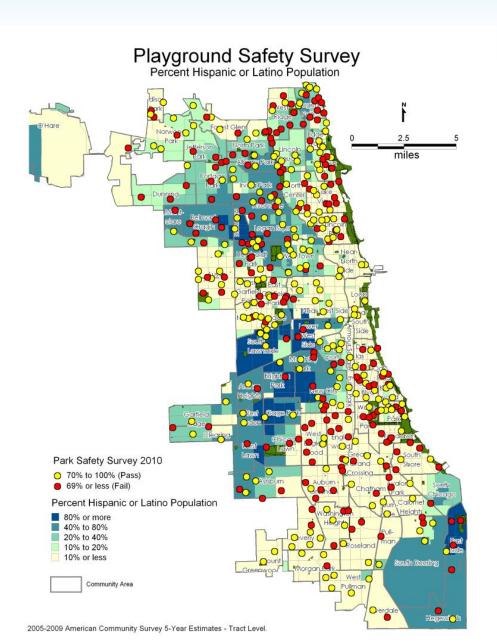


## 2010 Maps -African American Population Playground Safety Survey Percent Black Population



## 2010 Maps — Latino Population Children's Hospital of Chicago







## Chicago Plays – Game Changer

- Chicago Plays Launched by Mayor Rahm Emanuel and Chicago Park District in March, 2013
- 5 Year Renovation project for 300 aging playgrounds throughout city
- Went from renovating 15 playgrounds per season to 60 playgrounds
- Survey scores were used for initial decisions for priority

### Ann & Robert H. Lurie Children's Hospital of Chicago

## Other Progress with Park District

- Responding to immediate requests for maintenance from surveyors
- Training on playground maintenance for "riggers" in Spring, 2012



## Playground Inspections

- Certified playground safety inspector
  - Certified by the National Recreation and Park Association
  - Perform more detailed inspections at schools, parks and childcare centers
  - Issue a written report
  - Needed for NAEYC Accreditation so primarily focused on childcare center and pre-schools
  - Approximately 30 playgrounds inspected per year



## Playground Builds



## Playground Builds



- Completed 20 playgrounds since 2002
- Diverse neighborhoods and sites
  - Childcare centers
  - Chicago Park District sites
- Developed a "hybrid" community build process
  - Facilitates community/organizational buy-in but makes sure professional crew does all post setting/concrete footings and site prep



#### Before and After







## Thanks!



## Questions



Please enter your questions in the Q & A box

## **Thank you!**

#### Please fill out our short evaluation:

https://www.surveymonkey.com/r/BWN32ZK

#### Register for our next webinar:

Preventing Child Abuse and Neglect to Create a World Where Every Child Can Thrive

May 25<sup>th</sup>, 2016

2:00 - 3:00 p.m. ET

http://edc.adobeconnect.com/e78m1mc5xy5/event/event\_info.html