


CH
The Children's Hospital of Philadelphia®
RESEARCH INSTITUTE

Child Passenger Safety Then & Now: Data & Partnerships Fueled Advances


Kristy B. Arbogast, PhD
Center for Injury Research and Prevention
Children's Hospital of Philadelphia

2016 Lifesavers Conference
Long Beach, CA




The Children's Hospital of Philadelphia®

First Child Restraints



The Children's Hospital of Philadelphia®

The Modern Era of CPS

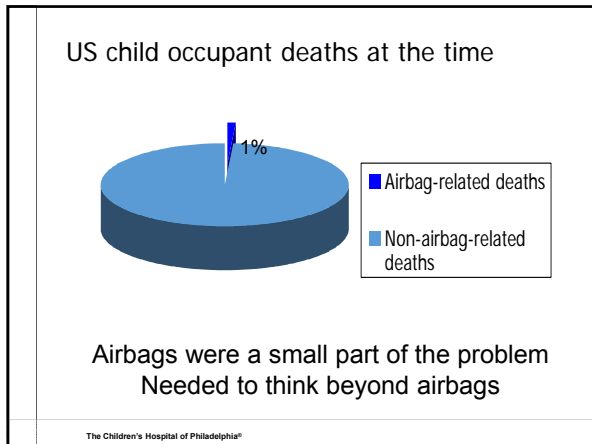


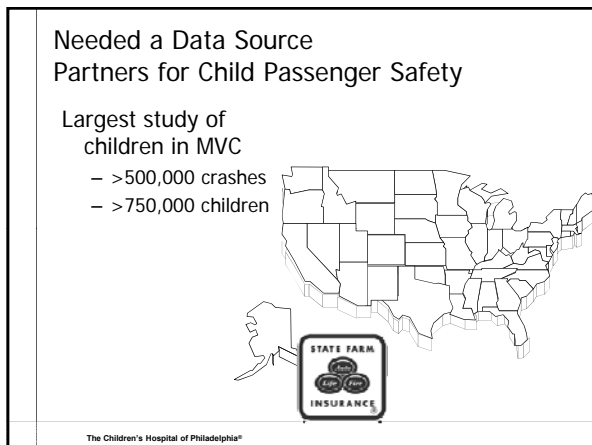
July 8, 1996: *USA Today* publishes article describing how children are killed by passenger air bags

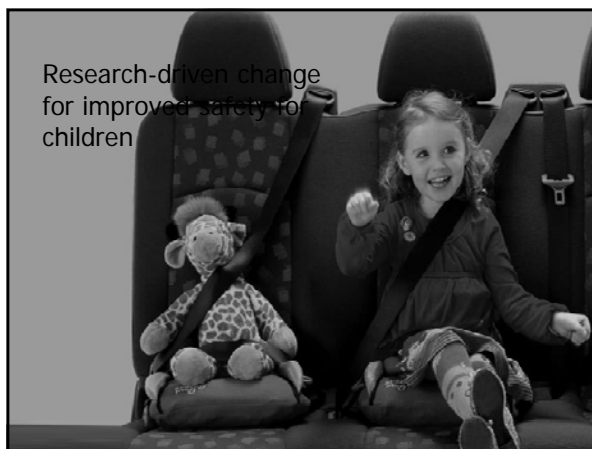
Education and laws increase

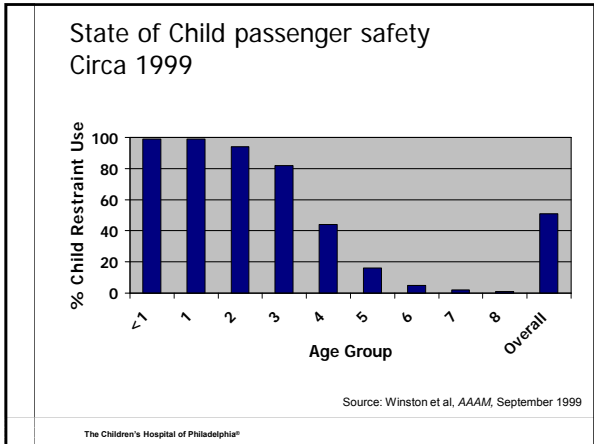
- Rear seating for children
- Use of age-appropriate restraints

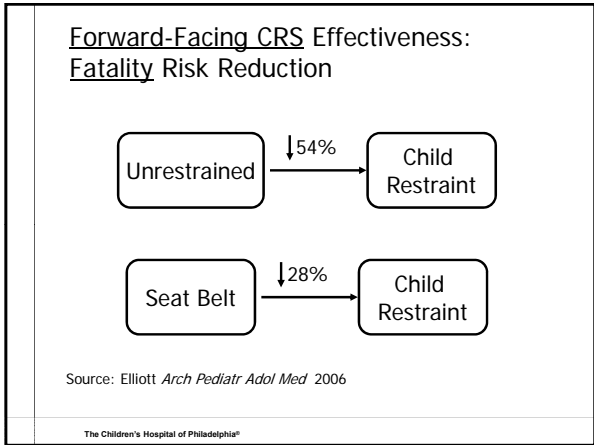
The Children's Hospital of Philadelphia®

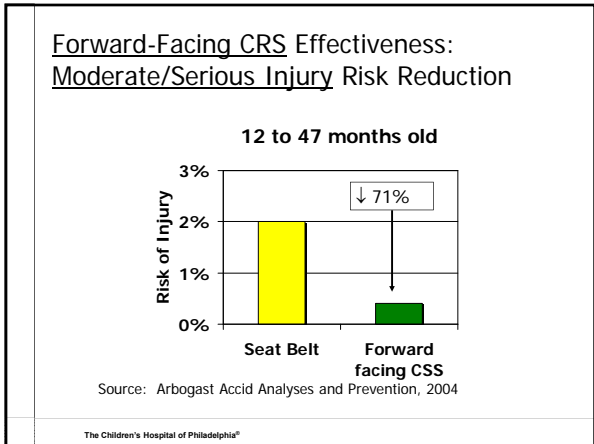


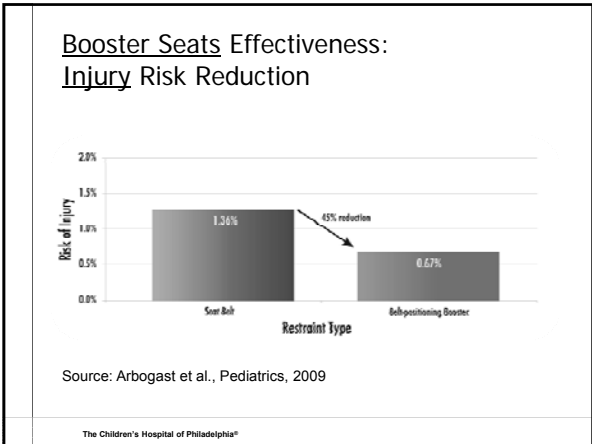


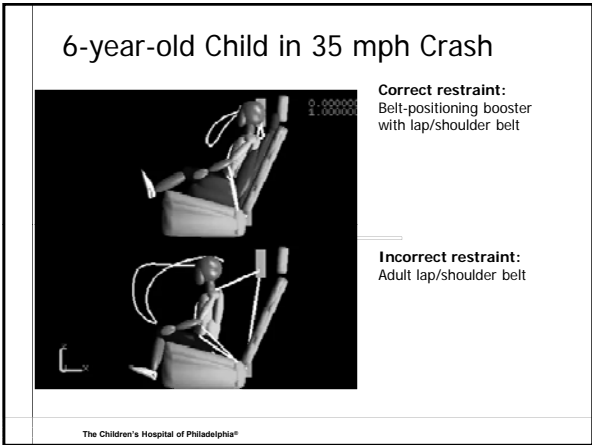


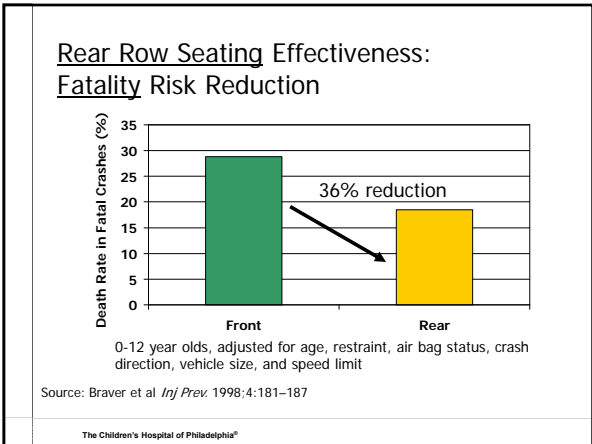




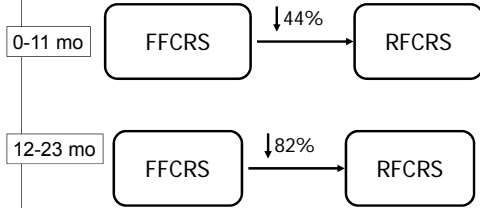








Rear-Facing CRS Effectiveness: Moderate/serious injury Risk Reduction



Source: Henary *Injury Prevention* 2007

The Children's Hospital of Philadelphia®

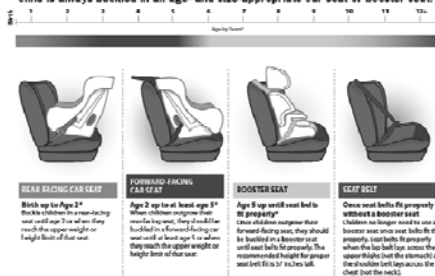
AAP, NHTSA, Car Seat Techs and more...



14 The Children's Hospital of Philadelphia®

CDC Best Practice Recommendations

Using the correct car seat or booster seat can be a lifesaver: make sure your child is always buckled in an age- and size-appropriate car seat or booster seat.



Keep children ages 12 and under in the back seat. Never place a rear-facing car seat in front of an active air bag.

www.cdc.gov/vitalsigns

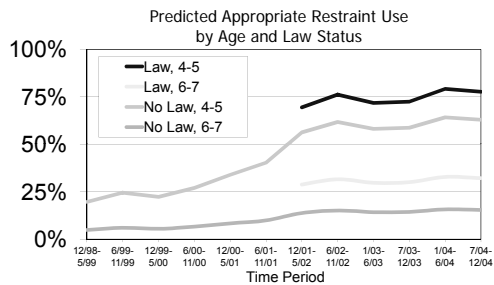
15 The Children's Hospital of Philadelphia®

Advocate for upgraded laws



The Children's Hospital of Philadelphia®

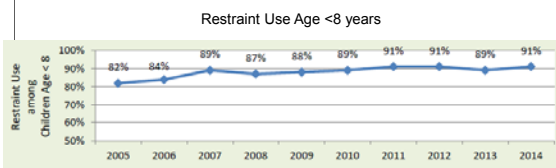
Laws change behavior



Winston et al. Arch Pediatr Adol Med, 2007

The Children's Hospital of Philadelphia®

This response has been sustained

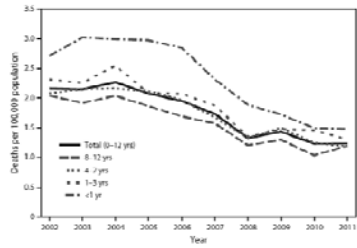


Source: NHTSA NOPUS 2014

18 | The Children's Hospital of Philadelphia®

US Motor Vehicle Deaths Among Children Age 12 And Under Decreased By 43% In The Past Decade

FIGURE 1. Motor vehicle occupant deaths per 100,000 population for children aged 0-12 years, by age group and year — United States, 2002-2011



CDC Feb 2014

The Children's Hospital of Philadelphia®

What we learned regarding evidence-based advocacy

- Keep eye on the goal – protecting children
 - Align research priorities with potential impact
- Provide rational, unbiased analysis
 - “Voice of reason”
- Conduct research with pragmatic rigor
 - Excellent science but applied - to achieve a goal
 - Science is the starting point for action
- Include partners & rely on them
 - Include them from the beginning
 - But make their action easy - translate research

The Children's Hospital of Philadelphia®

Our Approach



The Children's Hospital of Philadelphia®

Action

Inform Safety Products & Regulations

Create Educational Resources

Advocate for Evidence-based Laws

Provide Recommendations

The Children's Hospital of Philadelphia®

Need to Partner with those that can "ACT"

The Children's Hospital of Philadelphia®

Wor / Med
2001:175:225-226

The unhealthy alliance between academia and corporate America

Public

Academy of the United States is to discontinue policy that encourages research and innovation.

The New England Journal of Medicine

Editorials

The ties between clinical researchers and industry

But... We need each other to make a difference!

February 09, 2008 | Richard C. Paddock | Times Staff Writer

Here's a recipe for academic endowments:

Five 600,000-dollar endowments. Several, fund-raise consultants help. Then, accept 50 million from to protect an unusual research.

Big Beverage gives \$10 million to CHOP

Big Beverage gives \$10 million to CHOP

Big Beverage gives \$10 million to CHOP

The Children's Hospital of Philadelphia®

To save lives and prevent injuries, collaboration is essential

Collaborate in all phases:
From project definition to project conduct, analysis and dissemination

Partners – leverage & buy-in

- Influencers of the target population
- Government – laws and policies
- Industry – makes the products families buy
- Advocacy orgs – deliver messages to families
- Medical community – source of respected info
- Communities and families

The Children's Hospital of Philadelphia®

Center for Child Injury Prevention Studies (CChIPS)

- Part of CIRP
- National Science Foundation Industry University Cooperative Research Center
- Conduct research to support industrial R & D
- Composed of Faculty from
 - CHOP/Penn – founding site in 2005
 - Ohio State University – second site brought on in 2009
- Cchips.research.chop.edu

Center for Child Injury Prevention Studies
 The Children's Hospital of Philadelphia® phil^a RESEARCH INSTITUTE
 THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER

CChIPS Mission

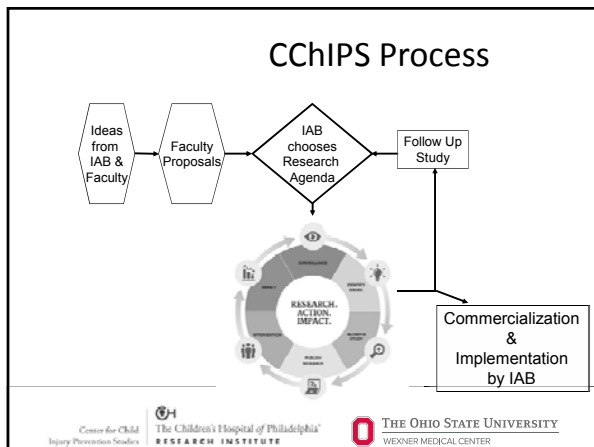
"To advance the safety of children by facilitating the conduct of scientific inquiry into childhood injuries and to translate these findings into commercial applications and public education programs for prevention."

...In brief: *Science + Impact*

Center for Child Injury Prevention Studies
 The Children's Hospital of Philadelphia® phil^a RESEARCH INSTITUTE
 THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER 4

Our Members

Center for Child Injury Prevention Studies | The Children's Hospital of Philadelphia[®] RESEARCH INSTITUTE | THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER



CChIPS | Center for Child Injury Prevention Studies

Celebrating 10 Years of Discovery & Innovation!
Driving Industry and Academia Forward

THE CHILDREN'S HOSPITAL OF PHILADELPHIA[®] RESEARCH INSTITUTE | THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER

A Decade of Child Injury Research

Since 2005, CCHIPS has conducted over 106 research projects. The following are a sampling of the innovation that could only be fostered by CCHIPS.

Data Linkage: Catalyzing Advancements in Teen Driver Safety

Human Volunteer Testing

Giving the Podium to Student Researchers

A Risk-free Environment to Observe Teen Drivers

PREPARING
the Next Generation of Scientists

Partners for Child Passenger Safety

Industry Perspective

“People that aren’t in the industry just see that the child goes to the child seat which goes in the car, and you hope they’re safer if there’s a crash. But at CCHIPS, we are identifying all those pieces. The child seat has to be designed correctly. You need a decent dummy to be able to design it... All the research that has been done over ten years has shipped away as those individual pieces. And then over ten years, you move the bar.”

“One great project is the digitalization of car seats. Not only would it have been very difficult for the auto and car seat manufacturers to do without CCHIPS, the researchers would not have thought of doing it without the influence of the companies. So it worked from both directions; you’ve responded to the needs of the industry, which are doesn’t necessarily have done it if it wasn’t for this group.”

“Being involved in the IAB has had multiple benefits for our company. Not just from the value of the research that we’ve brought back to our company and how that’s changed our products, but also, being involved in the IAB has helped us generate other ideas and forge partnerships with other car manufacturers and child restraint manufacturers so that ultimately, we can put together a better product and a safer product for kids.”

“The scientists are able to evolve with an evolving industry instead of just being frozen academically on a scientific problem. Because they collaborate with manufacturers who face real-life consequences of technology — because of that relationship, their research is forever relevant.”

“I want people to be alive after a crash because of what we did.”

The Challenge Ahead Worldwide Magnitude of the Problem

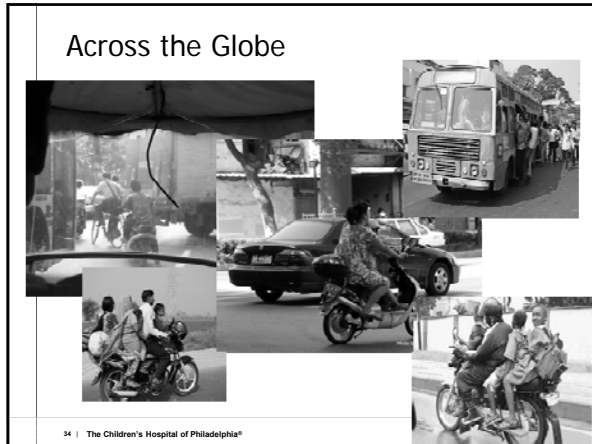
Change in rank order of DALYs for the 10 leading causes of the global burden of disease

1990		2020	
Rank	Disease or injury	Rank	Disease or injury
1	Lower respiratory infections	1	Ischaemic heart disease
2	Diarrhoeal diseases	2	Unipolar major depression
3	Perinatal conditions	3	Road traffic injuries
4	Ischaemic heart disease	4	Perinatal conditions
5	Stroke	5	Chronic obstructive pulmonary disease
6	Cardiovascular diseases	6	Lower respiratory infections
7	Tuberculosis	7	Tuberculosis
8	Musculoskeletal	8	War
9	Road traffic injuries	9	Diarrhoeal diseases
10	Congenital abnormalities	10	HIV

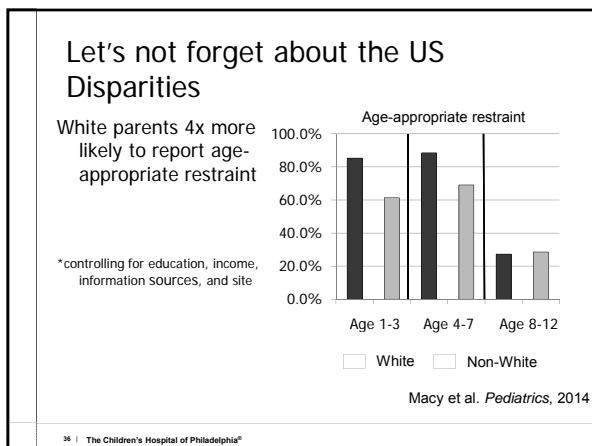
Source:

DALY: Disability-adjusted life year. A health-cap measure that combines information on the number of years lost from premature death with the loss of health from disability.

The Children’s Hospital of Philadelphia®







Where do we go from here?
Future priorities

Increase restraint use among harder-to-reach populations

Increase age-appropriate restraint use

- Simplify child restraint use
- Make typical behavior safe

Optimizing the rear seat

Partnerships are necessary to make this happen

Resources

WWW.CHOP.EDU/CARSEAT

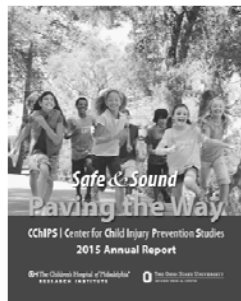
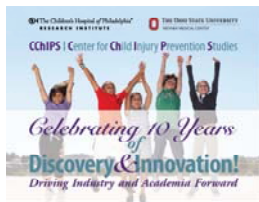
DOWNLOADABLE RESOURCES



WWW.CHOP.EDU/INJURY



More information on CCHIPS

CCHIPS.RESEARCH.CHOP.EDU



 <p>The Children's Hospital of Philadelphia® RESEARCH INSTITUTE</p>	
<p>Child Passenger Safety Then & Now: Data & Partnerships Fueled Advances</p>	
<p>Kristy B. Arbogast, PhD Center for Injury Research and Prevention Children's Hospital of Philadelphia</p> <p>2016 Lifesavers Conference Long Beach, CA</p>	
<p>The Children's Hospital of Philadelphia®</p>	
