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# Keeping Kids Safe: Bicycle Safety

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UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, CLASS OF 2018

NEWPORT, VT

ROTATION 3: JULY-AUGUST 2016

PROJECT MENTOR: BETH BARNES, COMMUNITY OUTREACH SPECIALIST

# Problem Identification:

- ▶ In 2013 in the US, over 900 bicyclists were killed and there were an estimated 494,000 emergency department visits due to bicycle-related injuries <sup>(4)</sup>
- ▶ Adolescents and young adults (15-19) make up a large proportion of bicycle related deaths and injuries <sup>(4)</sup>
- ▶ Children (5-14 years), adolescents, and young adults (15-24 years) have the highest rates of nonfatal bicycle-related injuries, accounting for more than one-third of all bicycle-related injuries seen in U.S. emergency departments <sup>(4)</sup>
- ▶ More children are seen in the emergency department for bicycle related injuries than any other sport <sup>(1,2,5)</sup>
- ▶ Approximately 55% of children report not always wearing a helmet while bicycling <sup>(6)</sup>

# Public Health Costs:

## ▶ US Data:

- Data from 2010 show fatal and non-fatal crash-related injuries to bicyclists resulted in lifetime medical costs and productivity losses of \$10 billion <sup>(4)</sup>
- The total cost of bicyclist injury and death is over \$4 billion per year <sup>(7)</sup>
- Estimated indirect costs for injuries to unhelmeted cyclists are \$2.3 billion yearly <sup>(7)</sup>
- A helmet on the head of one child can save society \$580.00 in medical costs and reduce injury and fatality rates at least by 30% and as much as 85% <sup>(6,9)</sup>

## ▶ Vermont Specific Data:

- 63% of Vermont Youth who ride bicycles report rarely or never using a helmet <sup>(11)</sup>
- Riders in Franklin and Orleans county were more likely to report rarely or never wearing a helmet compared to other counties in VT <sup>(11)</sup>
- Between 2012 and 2016 there were 7 bicycle accidents requiring ambulance transfer in Newport, VT <sup>(8)</sup>
- There is no Vermont Specific data on the cost of bicycle related injuries, but it likely is similar to US reported data, due to a similar number of people reporting rarely or never using a helmet in VT and the rest of the country

# Community Perspective Interview 1:

► Interview with Dr. Peter Harris, retired pediatrician from North Country Hospital

1. What are the problems or barriers you see in the Northeast Kingdom community in terms of children biking safely?

“Poverty is number one. Many families do not feel that they can afford helmets or safety equipment, even though there are programs that provide helmets in many cases. Ignorance of the danger of bicycles is something that I frequently was working against. There is also a tough rural ethic that makes families feel that they do not need to adhere to safety guidelines.”

2. What are future ways childhood bicycle safety could be addressed?

“The community outreach programs that are being created are a great alternative way to address this issue. Many things are covered in well child checks and frequently safety issues may not receive enough emphasis. Videos on childhood safety should be readily available to show parents and kids...kids particularly are best approached in this manner.”

# Community Perspective Interview 2:

▶ Interview with Beth Barnes, Community Outreach Specialist at North Country Hospital

1. Specifically in terms of bike safety, what are the things you are trying to do to educate children to stay safe?

“Our primary outreach is actually two-fold. I have a program called ‘Classroom Cruisin’ where I bring a stationary bicycle to Kingdom schools, primarily elementary schools and teach basic bike safety skills while kids sit and pedal the bike. They learn hand signals, they learn the right way to dress safely, the importance of tying shoes, wearing a helmet and following the rules of the road. They also learn that roads are made for all users, cars, pedestrians and bikes (with the exception of highways). We also have state-of-the-art helmets available for a \$10.00 donation, this is our cost.”

2. What are the problems or barriers you see in the Northeast Kingdom community in terms of children biking safely?

“We have no safe infrastructure and many parents, even adults, will not use the bikes on the roads for transportation or recreation. Without safe infrastructure people are not willing to take the risk.”



# Intervention and Methodology:

- ▶ Developed a child bicycle safety pamphlet to be handed out at 3 community events with Green Mountain Farm to School and to be distributed to the North Country Hospital Pediatric Practice
  - Information for the pamphlet was gathered from the CDC, Safe Kids Vermont, and Journal of Safety Research (3,6,10)
- ▶ Attended an afternoon event at the Green Mountain Farm to School Lunchbox program, a nonprofit organization that provides free healthy food for children during summer break
  - Had helmets available for discounted price (\$10.00)
  - Taught bicycle safety to children and parents
  - Answered questions about bicycle safety



# Results: Pamphlet

**Who** plays baseball, football or hockey and what do all these sports have in common? You **MUST** wear a helmet to play. Bicycling is the same. Why? In all these sports kids are at risk of severe head or brain injury without proper protection. If a coach won't let you play without a helmet, you should **NEVER** ride your bike without one either.



112 children ages 19 and under died while riding a bike in 2010 (CDC)

## WHY IS BIKE SAFETY IMPORTANT FOR KIDS?

- ☑ Apart from automobiles, bicycles are tied to more childhood injuries than any other product
- ☑ Children often fall when learning to ride a bicycle and proper head protection can prevent serious injury
- ☑ They do not know the rules of the road and young children cannot judge speed and distance of traffic

## When they are fitted properly:

Helmets reduce the risk of head injury by at least 45% and sometimes as much as 85%.

Helmets can reduce brain injury by at least 33% and as much as 88%

Helmets can reduce facial injury by 27 %

Helmets can reduce fatal injury by 29 %

(Bicycle helmet use among children in the United States: the effects of legislation, personal and household factors. J Safe Res. 2010)



## HOW CAN PARENTS HELP?

- ☑ Wear helmets and sneakers when riding bicycles with your children. Try to avoid shoes with laces or tuck them in
- ☑ Teach kids to wear a helmet at a young age
- ☑ Teach kids to stay close to the side of the road when biking, bike in the direction of traffic, or on a designated bicycle path or bicycle lane
- ☑ Children under the age of 10 should always bike with an adult

- ☑ Teach kids to be extra alert when it's dark outside so they are visible to drivers. Have kids wear light or brightly-colored clothing reflective gear, and to use front and rear bike lights
- ☑ Teach kids to use hand signals for right, left and stop

## How to Fit a Helmet

A helmet should sit on top of the head in a level position, and should not rock forward, backward or side to side. The helmet straps must always be buckled, but not too tightly. Safe Kids and North Country Hospital recommend that kids take the [Helmet Fit Test](#):



**EYES check:** Position the helmet on your head. Look up and you should see the bottom rim of the helmet. The rim should be one to two finger-widths above the eyebrows.



**EARS check:** Make sure the straps of the helmet form a "V" under your ears when buckled. The strap should be snug but comfortable.



**MOUTH check:** Open your mouth as wide as you can. Do you feel the helmet hug your head? If not, tighten those straps and make sure the buckle is flat against your skin.



# Results: Pamphlet

For more information about  
childhood injury prevention and  
how you can help create a safe  
home for your kids, please visit:

## Keeping Kids Safe

at

[www.northcountryhospital.org](http://www.northcountryhospital.org)

or contact:

Beth Barnes, Community Outreach Specialist

[bbarnes@nchsi.org](mailto:bbarnes@nchsi.org)

We are working together to  
make sure Northeast  
Kingdom kids are safe kids!

## Bicycle Safety



## Keeping Kids Safe



SAFE  
KIDS  
VERMONT

August 2016



# Results: Quantitative and Qualitative

- ▶ Sold 15 helmets to protect 15 more children and adults
- ▶ Spoke to approximately 30 parents and children about bicycle safety
- ▶ Statements from the event:
  - My nephew just had a bike accident a couple of weeks ago that cost us \$10,000 and he is lucky he did not get hurt worse than he did. I am very happy to be able to buy him a helmet at discounted price to bike at my house safely
  - I am very happy to be able to properly fit my child with a bike helmet and keep her safe while she learns to ride her bike
  - Beth Barnes puts on great programs for our children throughout the summer and the school year. We are happy to have her come speak at our schools and teach the kids hand signals and the importance of wearing a helmet and biking safely. She is known as the Bike Safety Lady at all of our schools

# Effectiveness and Limitations:

## ▶ Effectiveness:

- Parents appreciated having a pamphlet available to them, especially the section on how to properly fit a helmet
- Many parents praised us for the price of our helmets and told us how grateful they were that they could keep their children safe for a reasonable price
- After the 3 community events, 15 more heads were protected

## ▶ Limitations:

- Even though the helmets were available at a discounted price, some people could still not afford them
- Having the event during the summer instead of during the school year made it more difficult to teach children about bicycle safety and we spent most of our time talking to parents
- Not enough time to address the concern of road infrastructure on bike safety

# Future Projects:

- ▶ Apply for a grant to provide bicycle helmets to children for free
- ▶ Speak with state or city legislators to develop better infrastructure for safe bicycling in the North East Kingdom
- ▶ Make a video to show children at school or in the doctors office emphasizing the importance of bicycle safety
- ▶ Go to the elementary schools in the North East Kingdom and teach sessions on bicycle safety

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