Issue Brief

EFFECTIVE TRANSPORTATION POLICIES REQUIRE INJURY PREVENTION STRATEGIES

COMMUNITIES COPE WITH THE CONSEQUENCES OF PREVENTABLE INJURIES EVERY DAY

In Nampa, Idaho, 85-year-old Maria Alvarez was walking across a busy street one evening, when she was hit and killed by a minivan. Nine people have been hit by cars while crossing the street in the same area over the last 12 years. The street has few lights and no crosswalk. "They said they were going to put one in and they never did. Now it took a life," Elizabeth Mora, a local resident, told KIVI-TV Today's 6 News.[1]

In Glendale, California, 11-year-old Meri Nalbandian was crossing the street on her way to school when she was struck and killed by an SUV. Her middle school, one of three schools in the area, is located along a road known for its high traffic volume. "We have to be careful dropping off our kid in the mornings because it is very busy," Edel Ramos told the Glendale News Press. "It seems like something might happen any time. You just don't know."[2]

In Chattanooga, Tennessee, Van Townsend was riding his bicycle with another cyclist, when a car suddenly came into their lane, hitting him and breaking his leg. The incident was not surprising to local cyclists, who have seen cyclist-vehicle collisions become more common in past months. "A lot of motorists feel as though cyclists shouldn't be on the road," Robert Bain, service manager at East Ridge Bicycle, told the Chattanooga Times Free Press.[3]

INJURY PREVENTION MUST BE A POLICY PRIORITY

Traditionally, transportation and public health agencies have been regarded as unrelated entities, managed by separate agencies with discrete, narrowly-defined responsibilities.[4,5] Over time, however, this conventional view has been challenged by a growing body of evidence that demonstrates a strong connection between transportation policies and the health of communities.

Increased rates of traffic crashes that injure and claim the lives of pedestrians, cyclists, and motorists of all ages have made it clear that transportation policies and planning decisions directly impact public health outcomes. The ability of Americans to live their lives to their full potential, free from injuries, is wholly dependent upon the existence of transportation systems that encourage and support safe and healthy lifestyles.

Research shows that Americans rank five expectations of their communities above all others.[6] They expect that their communities will:

1. Allow kids to walk to school;
2. Be safe for kids to play in their neighborhood;
3. Enable people to walk or bike to public transit;
4. Enable people to walk or bike to shop; and
5. Enable older adults to live independently.

Unfortunately, many American communities fall short of these simple expectations. Due to "sprawl" – uncontrolled, poorly planned, low-density, and single-use community growth[7] – people must travel longer distances to reach schools, workplaces, shopping districts, and recreational areas. This increase in distance from homes to other destinations has lead to a dependence on automobiles and has made it increasingly difficult for children and adults to travel by walking, biking, or accessing public transportation. In addition, longer commutes and higher numbers of vehicle miles traveled have increased the likelihood of crashes and subsequent traffic-related deaths, merely because more people are spending time on the road.[8]

The health and safety of communities must be considered paramount when making transportation planning decisions. Transportation policies can make all the difference between communities overwhelmed with preventable injuries and premature deaths and those that allow their residents to live to their fullest potential.

THE COSTS OF TRAFFIC-RELATED INJURIES & DEATHS ARE IMMENSE

Traffic crashes are the single greatest cause of death and disability for children age 1 to adults age 34, and are the leading cause of injury-related deaths among people of all ages.[9]

Each year for the last 20 years, traffic crashes have killed approximately 40,000 people and injured over two million. In 2007 alone, an average of 112 people died each day in motor vehicle crashes – one every 13 minutes.[10] Traffic crashes are also likely to involve pedestrians and cyclists. Nearly 114,000 pedestrians and cyclists were injured in traffic crashes in 2007, and over 5,000 were killed.[11,12]

Motor vehicle crashes are the leading cause of death for U.S. teens, accounting for more than one in three deaths of teens ages 16-19[13] and a substantial amount of injury-related costs. Additionally, many traffic crashes involve children and older adults – populations that are particularly vulnerable to injury. In 2007, nearly two-fifths of all pedestrians killed in traffic crashes were children ages 5–9 and older adults age 65 and older.[14]

These traffic-related injuries and deaths incur significant costs to American society, in both dollars and years of productive life lost. Traffic crashes ranked third overall in terms of the years of life lost (the number of remaining years that the person is expected to live had they not died), generally because they tend to severely injure and kill those of relatively young ages.[15] The nearly six million crashes in 2007 cost an estimated $230 billion in property and productivity losses, medical and emergency bills, and other related costs. These losses add up to a cost of nearly $792 for every American, every year.[16]

However, like nearly all injuries, traffic-related injuries and fatalities can be prevented by using a public health approach. By developing and enforcing sound policies and making necessary infrastructural changes, communities can reduce rates of injuries and deaths among pedestrians, cyclists, and motorists alike.

TRANSPORTATION POLICIES ARE PART OF SMART GROWTH

Smart Growth is development that revitalizes neighborhoods, protects farmland and open space, keeps housing affordable, and provides more transportation choices.[17] Smart Growth encompasses policies that integrate both transportation and land-use decisions to encourage the development of safe and walkable neighborhoods with a variety of transportation options.

Smart Growth has been linked to a variety of positive public health outcomes. When compared to regions with high degrees of urban sprawl, areas that have applied Smart Growth principles have exhibited significantly fewer traffic fatalities, increased rates of walking and biking, and increased levels of community interaction that often deters violence and crime.[18]

Smart Growth, however, does not involve one single change, but rather, a variety of integrated changes. An array of transportation and land-use policies must be implemented concurrently to encourage walking, bicycling, and use of public transit in a safe and supportive environment. Policies that facilitate a host of changes in a community – complete and connected streets with sidewalks, bike paths, traffic calming measures, and crosswalks; access to high-quality transit service; compact, walkable, and mixed-use neighborhoods; and programs that encourage adults and children to walk and bike to their destinations – best embody the integrated approach of Smart Growth.

ACTIVE TRANSPORTATION CAN PREVENT INJURIES & CHRONIC DISEASE

As rates of obesity have grown dramatically over the last two decades, devising ways to increase individuals' levels of physical activity have become ever more important. Making physical activity a regular part of one's daily routine through "active" transportation (e.g., walking and bicycling) is the most effective means of improving physical fitness. Consequently, programs intended to increase walking and biking in communities have made the need for new transportation policies ever more apparent.

The National Institute of Medicine has recommended that state and local governments help prevent childhood obesity by changing ordinances and planning practices to promote opportunities for physical activity.[19] Despite this, however, many communities still lack sufficient areas for residents to walk and exercise safely. The lack of these necessary structural components persist despite the fact that individuals are 65% more likely to walk in neighborhoods that have sidewalks[20] and pedestrian crashes are more than twice as likely to occur in places that lack sidewalks.[21]

Policies that provide a variety of transportation choices and encourage active transportation further goals for both injury and chronic disease prevention. In fact, as the number of people walking and bicycling in a community increases, deaths and injuries from motor vehicle collisions decrease.[22] Hence, increasing numbers of pedestrians and cyclists in communities simultaneously improves their overall safety. Policies that encourage individuals to increase their levels of active transportation also save lives by reducing traffic-related injuries and fatalities.

POLICIES MUST ADDRESS THE NEEDS OF AN AGING POPULATION

Older adults are one of the fastest growing segments of the U.S. population. As the substantial baby boomer generation continues to age, the number of older adults is estimated to double to over 71 million by 2030.[23] Given this trend, issues related to the mobility and safety of older adults has become a national concern. Declines in vision, cognitive function, and physical ability make older drivers more at risk of being involved in and subsequently dying from injuries sustained in motor vehicle crashes. In 2007, older adults accounted for 14% of all traffic fatalities.[24] By 2030, it is estimated that nearly one out of every four fatal vehicle crashes will involve older adults, who will make up more than a fifth of all licensed drivers.[25]

As older adults live longer and continue to engage in activities that require travel, the need for a wide variety of transportation choices has become evident. Comprehensive transportation policies and practices must be developed that allow older adults to travel safely, while also maintaining their sense of independence. Efforts such as engineering design changes to roadways, providing needed vehicle adaptations, and increasing the availability of alternative transportation services can make a substantial impact on enhancing the safety and mobility of older adults.[26]

PARTNERSHIPS BETWEEN DIVERSE PROFESSIONALS ARE KEY

Transportation policies have a substantial impact on the viability of communities. A lack of efficient alternatives to automobile travel disproportionately affects vulnerable populations such as the poor, elderly, and children by limiting their access to jobs, health care, social interaction, and healthy foods.[27] In order to address these issues, professionals from a range of areas must work collaboratively. *Health Impact Assessments* (HIAs) are useful tools that allow communities and professionals to determine the potential health effects a policy, program, or project may have on the health of a population before it is implemented.[28] By working together to conduct HIAs, professionals working in public health, transportation, and land-use planning can ensure that resources are utilized effectively and can provide a variety of long-term benefits to new and existing communities.

Public health professionals – particularly those working in injury and violence prevention – must utilize opportunities to share information, resources, and technical knowledge with other professionals that work outside of "traditional" public health arenas, but make decisions that can have long-lasting effects on community health. These professionals can work in a variety of organizations that include, but are not limited to: departments of transportation (DOTs), metropolitan planning organizations (MPOs), city councils, boards of education, chambers of commerce, departments of housing and community development, transit authorities, and law enforcement agencies. By working with professionals from all areas, cost-effective transportation policies can be developed to promote the health, safety, and self-sufficiency of communities.

MODEL POLICIES & PROGRAMS THAT WORK

There are a host of transportation policies and programs that, when implemented concurrently and collaboratively, can provide communities with numerous dividends. These policies and programs have the capacity to reduce financial and societal costs associated with traffic crashes, injuries, and fatalities, as well as provide transportation options that promote physical activity, reduce the incidence of chronic disease, and allow individuals to live to their full potential.

Complete Streets

Complete Streets policies require that streets are designed and operated to enable safe access for all users. A "complete" street is one which pedestrians, cyclists, motorists, and transit riders of all ages and abilities can cross and move along safely.[29] Complete Streets reduce traffic crashes by requiring comprehensive safety improvements that encourage active travel, and thereby increase the number of people walking and bicycling. Complete Streets can include a variety of characteristics, including sidewalks; raised medians; bike lanes; accessible transit stops; frequent, well-marked street crossings; and pedestrian signs and signals.

From San Francisco to Chicago, and from Hawaii to Connecticut, cities and states across the U.S. have successfully passed Complete Streets policies. Oregon's 1971 state law, for instance, requires that "footpaths and bicycle trails…shall be provided wherever a highway, road or street is being constructed, reconstructed or relocated." Subsequently, due in part to their Complete Streets approach, Portland, Oregon substantially increased bicycle commuting in the 1990s and reduced crash risk by nearly 70%.[30,31]

Complete Streets policies also help ensure that accommodations for pedestrians, cyclists, and transit riders are considered necessary features that are included early in the transportation planning process. To the benefit of transportation planners, Complete Streets policies minimize design revisions, time delays, and costs associated with retrofitting roads after they have already been built.

Safe Routes to School Program & School Siting Policies

Children often incur the greatest impact of transportation policies, both positive and negative. As such, policies that maximize both safety and physical activity for children are ideal. The federal Safe Routes to School (SRTS) program was authorized by Congress in August 2005 through Section 1404 of the transportation bill entitled, the "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" (SAFETEA-LU). This bill included funds for Safe Routes to School (SRTS) programs in all 50 states and the District of Columbia.

SRTS is an example of a successful public health and transportation collaboration that has been integral in ensuring that children have access to safe neighborhoods in which they can walk or bike to school. For instance, Miami-Dade County – an area that has one of the highest rates of pedestrian injuries and fatalities in Florida – has used SRTS program funds to implement a variety of initiatives to get more children to walk and bicycle in safer neighborhoods. *WalkSafe*™ – an educational program that increases children's knowledge of traffic safety – was implemented in high-risk school districts. In addition, SRTS funded engineering modifications at schools to make sidewalks and streets safer for children. As a result of this multifaceted approach, there has been a 41% decrease in the number of child pedestrians injured in Miami-Dade County since 2001, and crash rates have declined faster than in neighboring areas.[32,33]

The feasibility of SRTS programs, however, is in many ways dependent on school location. Decisions about school siting, design, and construction have a substantial impact on how students are able to travel to school. Children are only able to walk or bike to schools that are relatively near their homes. Nevertheless, many states and localities maintain policies that favor the construction of new schools that are large distances from students' homes, rather than renovating or expanding existing schools in local communities.[34] "Minimum acreage standards" – policies that require schools to be built on land of a certain size in order to receive state funding – often force new schools to be built on the outskirts of communities, miles from residential areas. Such policies continue to be part of school siting practices, despite the fact that the U.S. Environmental Protection Agency (EPA) and Council of Educational Facility Planners International (CEFPI) do not recommend minimum acreage standards. Instead, the EPA and CEFPI encourage communities to select school sites that are appropriate for their community and educational goals.[35]

Public Transportation Systems

As more people ride public transit – ranging from buses to railways – traffic fatalities tend to decline. This is due to the fact that when individuals use public transportation systems, it reduces the number of vehicles on the road and decreases the likelihood of traffic crashes by reducing per capita vehicle miles traveled. Cities that operate large rail transit systems in particular have significantly lower per capita traffic death rates than cities that lack rail transit.[36] In fact, compared to riding in a car, use of public transportation reduces a passenger's risk of fatality tenfold.[37]

Public transportation is not only a safer alternative for travelers, but it also increases the amount of daily physical activity transit users obtain. Research has shown that walking and biking are often part of a daily routine for riders of public transit. In Atlanta, Georgia, for example, walking and cycling account for over 70% of trips to and from transit stations.[38] Nationally, transit users walk a median of 19 minutes to and from transit and 29% achieve the more than 30 minutes of daily physical activity recommended by the Surgeon General.[39]

Traffic Safety Laws

Over the years, traffic safety laws have been integral to protecting motorists, cyclists, and pedestrians in communities throughout the United States. While many states have made an effort to adopt these critical laws, still others have been found lacking. As of September 2009, 20 states lacked an optimal primary enforcement seat belt law, 30 states did not have a universal, all-rider helmet law, and 23 states had not passed an optimal booster seat law that covers children ages 4-7.[40]

The health and financial benefits of traffic safety laws are well-documented. When ten states and the District of Columbia upgraded from secondary to primary enforcement seat belt laws, 3,553 lives were saved between 1993 and 2002[41] and billions of dollars were saved in medical and lost productivity costs. Also, comprehensive graduated drivers licensing (GDL) programs have been shown to reduce to fatal crashes of teen drivers by nearly 20%,[42] while also saving money associated with injury-related costs.

Additionally, the development and enforcement of speed reduction laws are necessary to reduce the number and severity of traffic crashes – particularly those involving pedestrians and cyclists. Research shows that 80% of pedestrians struck by a car going 40 miles per hour will die; however, if a pedestrian is struck at 30 miles per hour, the likelihood of death is reduced by half. At 20 miles per hour, the fatality rate drops to just 5%.[43]

POLICY RECOMMENDATIONS & OPPORTUNITIES

Given the link between transportation planning decisions and health, it is essential that public health professionals – particularly those in injury and violence prevention – inform the development of future transportation policies. State and local governments can improve the overall health and wellness of their communities by:

1. ***Adopting "Complete Streets" policies that require the implementation of engineering enhancements, traffic calming strategies, and design characteristics to make new and existing roadways safer for pedestrians and cyclists.***

2. ***Increasing funding for programs that encourage walking and biking (e.g., Safe Routes to School) to increase the safety of pedestrians and cyclists, promote physical activity, and reduce motor vehicle use.***

3. ***Revising school siting policies to support the construction and renovation of community-based schools that are accessible by walking or biking.***

4. ***Increasing investments in public transportation systems to reduce traffic fatalities and provide communities with enhanced transit options.***

5. ***Requiring the use of Health Impact Assessments (HIAs) during transportation and land-use planning processes to accurately assess the impact of proposed projects on the health of surrounding communities.***

6. ***Developing transportation and land-use practices that result in the construction and revitalization of mixed-use communities to encourage active transportation and make the utilization of public transit feasible.***

7. ***Adopting traffic safety laws that have been proven effective in preventing injuries and fatalities associated with motor vehicles (e.g., primary enforcement seat belt laws, helmet laws, child booster seats, GDL programs, etc.).***

8. ***Providing training opportunities for public health practitioners, transportation/land-use planners, and other professionals to better understand the overall impact of planning decisions on communities.***

By applying an integrated, public health approach to transportation policies, children and adults can enjoy a host of benefits within their neighborhoods, including reductions in injuries, increases in physical activity, and the ability to travel safely to any destination by a variety of means.

Transportation policies are public health policies – they can transform desolate, sprawled, and dangerous areas into thriving communities where people can travel, play, exercise, and interact freely. By sharing their knowledge, experiences, and expertise, professionals from all areas can support and implement policies that will improve and protect the health of our cities, states, and ultimately, our nation.

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