

MO-ACHE Student Essay Award

Infrastructure: It Does a Body Good

Saint Louis University Executive Master's in Health Administration; May, 2018

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September 10, 2017

The nation's chronic illness epidemic is growing at a catastrophic pace and there is one solution that continues to escape attention: infrastructure. A "Complete Street" is one that enables safe access for all users, including: pedestrians, bicyclists, motorists, etc. Complete Streets is a transportation policy and design approach that provides leading practices for infrastructure planning, which enables safety for alternative transportation modes. Enhancing roads to include bike lanes and wider sidewalks in urban areas increases the availability and safety of alternative forms of transportation, such as biking and running. This, in turn, increases the average activity level of a population, which reduces the risk of chronic illnesses like Diabetes and Heart Disease, ultimately improving the economy.

Missouri spends approximately \$1.6 billion on medical costs attributed to obesity. (Missouri Department of Health and Senior Services, 2014) Missouri, under the Department of Health and Senior Services, provides \$1.4 billion to protect and promote the health of Missourians. (Commissioner of Administration, 2017) As the 17<sup>th</sup> most obese state in the nation, more than half of Missourians (51%) fail to get the recommended physical activity of 150 minutes a week as prescribed by the U.S. Surgeon General. Furthermore, incident rates in Missouri for diabetes, obesity, hypertension, and asthma are 10%, 30%, 32% and 11% respectively (Alliance for Biking and Walking, 2016). Bike and pedestrian friendly communities help reduce the prevalence of these chronic illnesses, as well as decrease roadway fatalities (Alliance for Biking and Walking, 2016). A community's environment can affect whether and how its community members will engage in physical activity. The Centers for Disease Control and Prevention (CDC) states that adopting a Complete Streets policy will improve traffic safety as well as provide an important strategy in tackling the obesity epidemic. (Keener, 2009)

A sedentary lifestyle is a major underlying cause of the obesity epidemic in America. According to the Mayo Clinic, inactivity and a sedentary lifestyle are among the top causes of obesity and heart disease, which cost 76,488 and 614,348 individuals their lives in 2014 alone (CDC 2014). One way to increase the amount of physical activity in both youth and adults is through walking, running, and bicycling. Unfortunately, federal and state governments have not provided enough funding or adequate policies that provide for safe alternatives to driving or public transportation. This compounds the issue for obesity, as taking measures to increase one's activity is done so with considerable risks to their own safety. Organizations like the Complete Street Coalition have taken note. According to their research, over 46,000 people were struck and killed by cars while walking between the years 2005 and 2014. In this same time period, Americans were 7.2 times more likely to die as a pedestrian than from a natural disaster. Even worse is that this problem is escalating, as pedestrian deaths increased by over 2% between 2013 and 2014 (Complete Street, 2016). Moreover, according to the National Highway Traffic Safety Administration (NHTSA), less than 10% of pedestrian fatalities occurred when the victim was using a sidewalk (NHTSA, 2014). Given this, were sidewalks and bicycle lanes more readily available for pedestrians, senseless traffic fatalities such as these may decline. These tragedies are preventable, but the primary barriers to reducing these deaths, which are lack of funding and ineffective policies meant to address these issues, do not provide the solutions needed to solve the problem. Evidence suggests that by working to align legislation and policy at the state level with the efforts and implementation policy standards of Complete Street, there will be a notable decline in the rate of pedestrian deaths.

It is commonly accepted that an increase in exercise leads to a corresponding reduction in the risk of chronic disease. In a 2013 study published in BMC Public Health, researchers found that even with a 5% increase in individuals exercising regularly, healthcare costs would decrease nationally by \$1.2 Billion (BMC Public Health, 2013). In addition, increase physical activity levels is one of the most cost effective means to reduce the risk of chronic diseases. In a study by PubMed, the cost effectiveness ratios for increasing physical activity ranged from \$14,000-\$65,000 per QALY gained, relative to no increase in activity (Roux, et. al, 2009). Providing broader availability for alternative and/or leisure transportation increases the likelihood of elevated levels of physical activity in a community's population. This indirectly benefits the local economy by reducing the cost of healthcare related to chronic diseases such as diabetes and heart disease, given the rise in physical activity.

Less commonly discussed with respect to investing in pedestrian infrastructure is the impact that these enhancements make on the economy. The cost of designing roadways compliant with Complete Streets leading practices is generally estimated as a 1-4% increase in the overall road construction project cost. The benefits to these projects are immediately seen through increased home values. Studies show that homes located near bike and/or walking trails typically sell faster and at higher prices (Shinkle & Teigen, 2008). In addition to improving home values, studies show that investments in infrastructure for bicycle and pedestrians create more jobs per \$1 Million spent than do highway projects (Safe Routes Partnership). These investments that improve infrastructure have direct benefits to the local economies for the communities in which they're added.

The limited access for safe and reliable means for pedestrians and bicyclists to share the roads with motorists is not only directly endangering those that choose to ride a bike or walk today, but

they're indirectly costing the local economy billions of dollars by way of increased healthcare costs, as well as threatening the very health of communities across the country. Increasing the level of physical activity in a community is not a solution that occurs through government mandates or rule of law, but by providing the resources and availability for those in the community to take advantage of the opportunity to improve their health. In turn, communities will be healthier, their economies will be stronger, and the costly burdens and health risks from chronic diseases like diabetes and heart disease will no longer suppress their ability to thrive.

## References

Commissioner of Administration. (2017). *Division of Budget and Planning*. Retrieved from Office of

Administration:

[https://oa.mo.gov/sites/default/files/FY\\_2017\\_Health%20and%20Senior%20Services\\_EB.pdf](https://oa.mo.gov/sites/default/files/FY_2017_Health%20and%20Senior%20Services_EB.pdf)

Roux, Larissa & Pratt, Michael & O Tengs, Tammy & M Yore, Michelle & L Yanagawa, Teri & Van Den Bos,

Jill & Rutt, Candace & C Brownson, Ross & E Powell, Kenneth & Heath, Gregory & W Kohl, Harold

& Teutsch, Steven & Cawley, John & Lee, I-Min & West, Linda & M Buchner, David. (2009). Cost

Effectiveness of Community-Based Physical Activity Interventions. *American journal of*

preventive medicine.

Missouri Department of Transportation. (2017, April 27). *Missouri Department of Transportation*.

Retrieved from www.modot.org: <http://www.modot.org/safety/index.htm>

Shinkle, D., & Teigen, A. (2008). *Encouraging Bicycling and Walking: The State Legislative Role*. Denver:

National Conference of State Legislatures.

Keener, D. G. (2009, Keener, D., Goodman, K., Lowry, A., Zaro, S., & Kettel Khan, L. (2009).

Recommended community strategies). *Recommended community strategies and measurements*

*to prevent obesity in the United States: Implementation and measurement guide*. Atlanta, GA:

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

Alliance for Biking and Walking. (2016, March). *The Alliance Benchmarking Report*. Retrieved from

Alliance for Biking and Walking: <http://www.bikewalkalliance.org/>

Goodman, A. S. (2014). New Walking and Cycling Routes and Increased Physical Activity: One- and 2-

Year Findings From the UK iConnect Study. *Goodman, A., Sahlqvist, S., & Ogilvie, D. (2014). New*

*Walking and Cycling Routes and Increased Physical Activity* American Journal Of Public Health, e38-e46.

Hugh, B. (2010, February 14). *The Cost of Obesity in Missouri*. Retrieved from Missouri Bicycle and Pedestrian Federation: <http://mobikefed.org/content/cost-obesity-missouri-19-billion-now-82-billion-2018>

Hugh, B. (2011, 03 31). *Bicyclists Represent 11% of all On-Road Injuries in Missouri*. Retrieved from Missouri Bicycle and Pedestrian Federation: <http://mobikefed.org/2011/03/bicyclists-represent-11-all-road-injuries-missouri>.

Kim, D. D., & Basu, A. (2016). Estimating the Medical Care Costs of Obesity in the United States: Systematic Review, Meta-Analysis, and Empirical Analysis. *Value in Health*, 602-613.

Missouri Department of Health and Senior Services. (2014). *Obesity State*. Retrieved from Missouri Department of Health and Senior Services:  
<http://health.mo.gov/living/healthcondiseases/obesity/pdf/ObesityState.pdf>

Missouri Department of Health and Senior Services. (2014). *Obesity State*. Retrieved from Missouri Department of Health and Senior Services:  
<http://health.mo.gov/living/healthcondiseases/obesity/pdf/ObesityState.pdf>

Missouri Department of Health and Senior Services. (2016, March 17). *Community Data Profiles*. Retrieved from Missouri Department of Health and Senior Services:  
<http://health.mo.gov/data//CommunityDataProfiles/>