Injury Prevention and Smart Growth

Since the 1950's, community design has favored automobile- and sprawl-oriented development, defined as low density land use, few if any alternatives to automobiles for transportation, segregation of land uses, and inaccessibility to some groups, especially those in inner cities. These design features are increasingly recognized as significant contributors to a number of major public health problems, including chronic disease, obesity and physical inactivity, environmental toxins, intentional and unintentional injuries, and health disparities. Recent urban planning movements, particularly Smart Growth and Livable/ Sustainable Communities, provide alternatives to sprawl development and the potential to create safer, more active and healthier communities. Smart Growth development blends housing with business and services, provides ready access to public transit, protects open space and rural areas, favors neighborhoods that are safe and convenient for walking, and has a range of housing options for people of different incomes.

In the past year or so, researchers and the media have highlighted the positive impact of Smart Growth (pedestrian-oriented) development on physical activity, with its related health benefits. Less attention has been paid to the relationship between community design and injury prevention. STIPDA can play a key role in more fully bringing injury prevention professionals into the discussion about the built environment, Smart Growth and public health.

Relationship between sprawl and injuries

Traffic injury

- Sprawl is a risk factor for motor vehicle occupant, pedestrian and bike-related injury and death.[1] Researchers created a "sprawl index" for the 101 largest metropolitan areas in the US and found increased sprawl correlated with increased pedestrian and motor vehicle related fatalities. The 10 most sprawling cities had traffic death rates 50% higher than the 10 least sprawling.[2]
- Environments that encourage biking and walking (traffic calming, sidewalks, narrow streets and pedestrian refuge islands), found in Germany and Holland, contribute to lower injury rates. Per kilometer or per trip walked, American pedestrians are 3 times more likely to get killed than Germans, and 6 times more than Dutch. Bicyclists are 2 times more likely to get killed in the US than in Germany and 3 times more likely than in Holland.[3]
- The hostile environment for bikers and pedestrians contributes to the problem of lack of physical activity. Residents who view bicycling and walking within their communities as unsafe are less likely to engage in this form of activity.[4] And, they do not want their children to walk or bike to school or other places in the community.[5]

Violence

- A recent study showed increased neighborhood safety to be significantly associated with increased physical activity, even controlling for demographics.[6]
- Crime Prevention Theory of Environmental Design (CPTED) was developed several decades ago to reduce community violence. Its principles—increasing the visibility of peoples' activity through residential design and mixing commercial and residential areas ("eyes on the street"), deliberately creating public spaces, and maintaining order and cleanliness—have proven effective in reducing violence and crime in many cities.[7]
- The Local Government Commission's Center for Livable Communities makes the following zoning recommendations to increase community safety: create community space such as parks and communal gardens; promote mixed use and a variety of housing types; revive downtowns with increased housing; promote narrow streets and traffic-calming measures.[8]

Disabilities

- Lack of sidewalks, access to public transportation, and residential isolation become critical health issues for people with disabilities, limiting their ability to establish connections to their community, get to or use health care facilities, and remain physically active.[9] These limitations are particularly acute in suburban and rural settings with no mass transit and long distances between housing, shopping, and services.
- Communities that are compact and walkable and have user-friendly transportation systems are more accessible to persons with disabilities, enabling them to shop and work where they reside. Elderly residents will derive the same benefits.

The role of state injury prevention staff

The following list is intended to serve as a starting point for discussion among STIPDA members. It suggests possible ways injury prevention staff can become involved in Smart Growth initiatives and other land use and transportation planning efforts.

- Partner with others in the state health department who have an interest in the health benefits of modifying the built environment, e.g., mental health, environmental health, health promotion/ chronic disease, epidemiology, older adult health.
- Assist in data collection efforts to document the effects of modifying the built environment on rates of injury due to traffic, walking, biking, and violence. These efforts could be guided by CDC's research agenda, "The impact of community design and land-use choices on public health: A scientific research agenda," which includes questions related to injury and violence.[10]
- Coordinate bike and pedestrian safety initiatives (related to the built environment vs. education) with other health department projects promoting physical activity (e.g., Safe Routes to School).
- Work with state transportation offices to integrate safety into transportation planning and traffic engineering practices.
- Participate in state Smart Growth networks, bringing to the table data on the impact of modern community design and the potential benefits of Smart Growth initiatives as well as access to local public health coalitions and professionals.
- Provide research and program ideas related to safety and the built environment to local health departments and local public health advocacy groups.
- Advocate for/participate in the development of model zoning codes that use health-promoting community design. Several states have produced these for consideration by their local governments.[11]
- Build the capacity of local programs through seed grants, training and education/access to resources.

The role of STIPDA

The following suggestions are intended as a starting point for discussions about the role of STIPDA in efforts to promote health and safety through land use and transportation planning.

At the national level

- Join national initiatives seeking to integrate public health concerns into community design and to advocate for Smart Growth and other health-promoting community design strategies. Some of the key partners addressing public health and community design are listed on the following page.
- Build awareness and involvement on these issues among the country's injury control community. Sponsor sessions on the connection between injury prevention, community design and Smart Growth at: APHA, Smart Growth conferences, NACCHO and ASTHO conferences, health promotion/physical activity conferences, national injury control conferences.
- Begin to define a role for the injury control community on issues of health, community design and the movement for Smart Growth/pedestrian-oriented design.

At the state and regional level

- Provide STIPDA members with case studies that demonstrate the role state injury prevention professionals can play in promoting safety through land use and transportation planning.
- Encourage regional injury prevention networks to discuss the issue.
- Support state and regional training: provide information and ideas about the link between injury and community design that STIPDA members can present at state injury prevention, traffic safety, public health, and Smart Growth conferences.
- Provide STIPDA members with contacts in their state Smart Growth and bike/pedestrian advocacy organizations and their state transportation and planning offices.
- Encourage Federal funding to address CDC's Research Agenda to examine the link between community design and injuries related to traffic, violence, senior injuries, etc.
- Provide STIPDA members with tools and information on health and land use and transportation planning that they can share with local public health agencies and advocates.

Resources

Key partners

Centers for Disease Control and Prevention
Active Community Environments Initiative
www.cdc.gov/nccdphp/dnpa/aces.htm

Environmental Protection Agency
Development, Community, and
Environment Division (MC 1807T)
US Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-566-2878
smartgrowth@epa.gov

Federal Highway Administration
Smart Growth Initiatives
400 7th Street, S.W.
Washington, D.C. 20590
http://www.fhwa.dot.gov/planning/sgindex.htm

Funder's Network for Smart Growth and
Livable Communities
150 SE 2nd Ave
Miami, FL 33131
305-377-4484 ext 15
www.fundersnetwork.org

Local Government Commission Center for
Livable Communities
1414 K St.
Sacramento, CA 95814
916-448-1198
www.lgc.org

National Association of County and City Health Officials
Land Use Planning Project
1100 17th Street, Second Floor
Washington, DC 20036
Ph: (202) 783-5550
www.naccho.org

National Center for Bicycling and Walking
1506 21st St. NW
Washington DC 20036
http://www.bikewalk.org/index.htm

Pedestrian and Bicycle Information Center
730 Airport Rd. Suite 300
Chapel Hill, NC 27599-3430
www.walkinginfo.org www.bicyclinginfo.org

Robert Wood Johnson Foundation
Active Living Program
PO Box 2316
Princeton, NJ 08543-2316
www.rwjf.org

Smart Growth America
1200 18th Street NW
Suite 801
Washington, DC 20036
202-207-3349
www.smartgrowthamerica.org

Useful background reading

American Journal of Public Health, September 2003
Special issue on the Built Environment and Health

American Journal of Health Promotion,
September/ October 2003
Special issue on Health Promoting Community Design

Creating a healthy environment: The impact of the built environment on public health. Jackson R. and Kochtitzky C. Sprawl Watch Clearinghouse Monograph Series.
http://www.cdc.gov/healthyplaces/articles/Creating%20A%20Healthy%20Environment.pdf

Health and Smart Growth: Building Health, Promoting Active Communities. Funder's Network for Smart Growth and Livable Communities, 2003
www.fundersnetwork.org

Traffic Safety and Community Design
NACCHO Fact Sheet No. 12
http://archive.naccho.org/Documents/Traffic-Safety-and-Community-Design-Fact-Sheet.pdf

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[2] Ewing R, Pendall R, Chen D. Measuring sprawl and its impact. Smart Growth America. 2002. Available at: http://www.smartgrowthamerica.org/sprawlindex/sprawlindex.html

[3] Pucher J and Dijkstra L. Promoting safe walking and cycling to improve public health: Lessons from the Netherlands and Germany. American Journal of Public Health. September 2003: 93(9): 1509-1516.

[4] Saelens BE, Sallis JF, Black JB, Chen D. Neighborhood-based differences in physical activity: An environment scale evaluation. American Journal of Public Health. September 2003: 93(9): 1552-8.

[5] Timperio A, Crawford D, Telford A, Salmon J. Perceptions about the local neighborhood and walking and cycling among children. Preventive Medicine. January 2004: 38(1): 39-47.

[6] Molnar B, Gortmaker S, Bull F, Buka S. Unsafe to play? Neighborhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. American Journal of Health Promotion. May/June 2004: 18(5): 378-385.

[7] Carter SP, Carter SL, Dannenberg AL. Zoning out crime and improving community health in Sarasota Florida: "Crime Prevention through Environmental Design." American Journal of Public Health. September 2003: 93(9): 1442-1445.

[8] Local Government Commission Center for Livable Communities. Land Use Planning for Safe, Crime-free Neighborhoods. http://www.lgc.org/freepub/PDF/Land_Use/focus/plan_safe_neighborhoods.pdf

[9] Jackson R and Kochtitzky C. Creating a healthy environment: The impact of the built environment on public health. Sprawl Watch Clearinghouse Monograph Series. http://www.cdc.gov/healthyplaces/articles/Creating%20A%20Healthy%20Environment.pdf

[10] Dannenberg A, Jackson R, et al. The impact of community design and land-use choices on public health: A scientific research agenda. The American Journal of Public Health. September 2003: 93(9): 1500-1508.

[11] Hirschhorn J. Zoning should promote public health. American Journal of Health Promotion. January/February 2004: 18(3): 258-260.

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