Building a Set of Common Measures

Frank J. Chaloupka

Overview

• Largely draws on measures/sources used in the RWJF-funded Bridging the Gap program

• Initial thoughts on domains

• Examples of potential measures, data sources

• Complication and limitations
Bridging the Gap is …

• A collaborative effort to assess the impacts of policies, programs & other environmental factors on a variety of adolescent health-related behaviors

• An RWJF initiative begun in 1997 with focus on adolescent alcohol, tobacco, and other drug use and related outcomes

• More recently expanded to include youth eating practices, physical activity, and weight outcomes

• Linked to the ongoing, NIDA-funded, Monitoring the Future study
Bridging the Gap data include …

- Monitoring the Future Surveys of adolescents
- Household food purchases
- Surveys of primary and secondary school administrators
- School district wellness policies
- Community-level observations
- Community key informant surveys
- Community-level ordinances and regulations
- Market and national level television advertising exposure
- State-level policies and regulations
- Variety of archival data
Potential Domains for GIS Application
Potential Domains

• Healthy Eating
  – Access to healthier/less healthy foods
    • Availability, pricing
  – Marketing
    • Advertising, promotion
  – Policy
    • Statutory, regulatory, voluntary, guidelines
    • Implementation and enforcement
Potential Domains

• Active Living
  – Land use/Community design
    • Parks, green space, mixed-use, recreation opportunities
  – Transportation
    • Public transportation, street connectivity, bike lanes
  – Policy
    • Zoning laws, statutes, regulations, voluntary policies, community plans
Potential Domains

• Schools
  – Food environment
  – Physical Education & other physical activity
    • Recess, intramural/extramural sports
  – Policy
    • Wellness policies, voluntary guidelines, safe routes to school
Potential Domains

• Social Issues
  – Crime and violence
  – Safety
  – Social capital
  – Family, community economics
    • Income, poverty
  – Community demographics
Potential Domains

• Outcomes
  – Diet
  – Activity
  – Weight outcomes
    • *BMI, indicators for obesity*
Potential Measures for GIS Application: Healthy Eating
Potential Measures

Healthy Eating
• Availability measures
  – from business list data
    • *Dun & Bradstreet Marketplace data*
    • *Info USA business lists*
    • *Other business lists*
  – collected observationally
Potential Measures

Healthy Eating

• Availability measures
  – limitations/complications
    • Expensive to obtain
    • High business turnover
    • Misclassification of businesses
    • Less than perfect indicator of what’s available
Potential Measures

Healthy Eating

• Pricing measures
  – from archival sources
    • ACCRA Quarterly reports
    • AC Nielsen and IRI scanner-based data systems (market-level, household)
  – collected observationally
    • e.g. Karen Glantz’ NEMS
Potential Measures

Healthy Eating

• Pricing measures
  – limitations/complications
    • Limited set of products
    • Limited representation of stores (store-based scanner systems)
    • Limited geographic representation (ACCRA, HomeScan)
    • “regular” vs. “special” prices
Potential Measures

Healthy Eating

• Food marketing
  – Advertising
    • television, radio
    • print, billboard, outdoor
    • point-of-sale
    • Internet, cell phone, viral and other emerging forms
Potential Measures

Healthy Eating

• Food marketing
  – Promotions
    • Coupons, cents off specials, quantity discounts, other price reducing
  – Others
    • Sponsorship, entertainment tie-ins, product placement
Potential Measures

Healthy Eating

• Food marketing measures
  – from archival sources
    • *Nielsen Media Research and other measures of average market-level exposure for some types (e.g. TV ads)*
  – collected observationally
    • *Prevalence, frequency, content*
Potential Measures

Healthy Eating

• Marketing measures
  – limitations/complications
    • *Existing systems capture only some measures of marketing*
    • *Expensive*
    • *Limited geographic representation (large market areas, national)*
    • *Changing rapidly*
Potential Measures

Healthy Eating

• Policy measures
  – menu labeling statutes
  – limits on food/beverage marketing
  – bans on fast food restaurants
  – tax breaks for full-service supermarkets to locate in food deserts

• Require original legal research
Potential Measures

Healthy Eating

• Policy measures
  – limitations/complications
  • Comprehensive databases on state legislation underway
  • No comprehensive source of local policies
  • No sources of information on policy implementation and enforcement
Potential Measures for GIS Application: Active Living
Potential Measures

Active Living

• Land use/community design
  – access to parks/green space
  – access to recreation opportunities
  – mixed land use
  – sprawl
Potential Measures

Active Living

• Land use/community design – data sources
  – business list data (for some recreation opportunities)
  – NavTeq, TeleAtlas (for proximity to parks, some recreation)

• Could also be collected observationally
  – aerial photographs
Potential Measures

Active Living

• Land use/community design measures
  – limitations/complications
    • Expensive to obtain
    • Misclassification
    • Incomplete
    • Amenities, features likely to be important
Potential Measures

Active Living

• Transportation measures
  – street connectivity
  – street classification
  – access to public transportation (physical and economic access)
  – availability, quality of bike lanes
Potential Measures

Active Living

• Transportation data sources
  – Census Tiger files, NavTeq, TeleAtlas

• Could also be collected observationally
  – aerial photographs
Potential Measures

Active Living

• Transportation measures
  – limitations/complications
    • Misclassification
    • Need to be frequently updated
    • Amenities, features likely to be important
Potential Measures

Active Living

• Policy measures
  – zoning laws
  – community plans
  – regional plans
  – smart growth policies

• Require original legal research
Potential Measures

Active Living

• Policy measures
  – limitations/complications

  • Comprehensive databases on state legislation underway; limited in this area
  • No comprehensive source of local policies
  • Complexity of zoning laws
  • No sources of information on policy implementation and enforcement
Potential Measures for GIS Application:
Schools
Potential Measures

Schools – possible measures

– school district wellness policies, voluntary policies/guidelines, etc.
– school food environment
– PE and other activity for students
– school facilities
– shared use agreements
– safe routes to school
Potential Measures

Schools – data options
  – school administrator surveys
  – school observations
  – collection/coding of school district wellness policies
  – legal research
  – archival sources (QED, NCES)
Potential Measures

Schools

– limitations/complications

• *Expensive to obtain comprehensive data*

• *Limitations of survey data*

• *Archival sources limited on measures of interest*
Potential Measures for GIS Application: Community Issues
Potential Measures

Community Issues – possible measures

– crime
– traffic safety
– social capital
– community demographics
– population density
– economics
Potential Measures

Community issues – data sources
  – census data on socioeconomic and demographic factors
  – crime reports
  – motor vehicle accident reports
  – property values
  – news reports
Potential Measures

Community issues
  – limitations/complications
    • Standardization of sources
    • Frequency of updates
Potential Measures for GIS Application: Outcomes
Potential Measures

Outcomes – possible measures

– healthy eating
  • *Fruit and vegetable consumption*
  • *Fast food consumption*
  • *Caloric intake*

– active living
  • *Frequency & intensity*
  • *Caloric expenditure*

– weight outcomes
  • *BMI, overweight, obese*
Potential Measures

Outcomes – data sources

– Behavioral Risk Factor Surveillance System
  • *State, sub-state, county level*

– Additions to other national surveys
  • *Current Population Survey, National Survey of Drug Use in Households*

– Expansion of other surveys
  • *NHANES, NHIS*
Potential Measures

Outcomes

– limitations/complications

• *Very costly*
• *Self-report data*
• *Cross-sectional data*
• *Representativity of data below large geographic areas*
Next Steps

• Define key domains
• Identify priority concepts
• Identify key measures
  – practical, cost-effective, readily available or feasible to collect
• Define potential sources