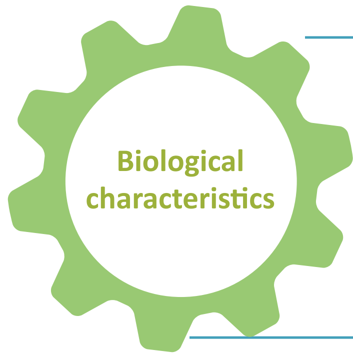
Place. Area. Neighborhood. Latitude. Longitude. Distance. These geographic terms are increasingly finding their way into the population health and quality improvement arenas. Advances in mapping technology and a trend towards utilizing spatial statistics makes it easier to connect these geographic constructs and social phenomena to population patterns of health, disease, and utilization. Publically available data traditionally designed to support the analysis of very compartmental issues are now being recognized as rich and complementary information that may benefit cross platform problem solving processes. Integrating and mapping any of the following unlikely data partners may reveal surprising relationships and valuable insight into local and federal health initiatives.

The U.S. has a wealth of high quality data collection systems providing ongoing national and state data on the structure, processes, and use of health services. These include, among others, the National Health Care Survey, the Annual Survey of Hospitals, the Healthcare Cost and Utilization Project, the National Medical Expenditure Survey, and the National Immunization Survey, which collect data through population, provider, client, and institutional surveys and ongoing administrative data systems. Studies by the National Association of County and City Health Officials, the Association of State and Territorial Health Officials, CDC, and others periodically assess the status of the public health infrastructure and the preparedness of state and local public health organizations. Ongoing data on health practices are collected by such national surveys as the National Health Interview Survey, while at the state level, the Behavioral Risk Factor Surveillance System and the Youth Risk Behavior Survey collect health practices data in each state.

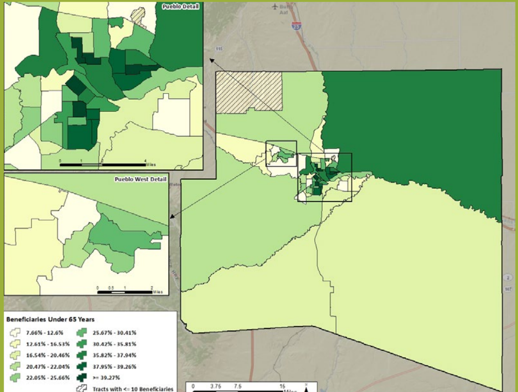
Data are available from Federal and state agencies. Of note, continuously collected data on land use, housing, air quality, and urbanization from the U.S. Department of Housing and Urban Development, the Census Bureau, and the U.S. Environmental Protection Agency. Ongoing national, state, and local data are generated through monitoring efforts of the natural environment, especially through systems maintained by the National Oceanographic and Atmospheric Administration, the National Weather Service, the U.S. Geological Survey, and the U.S. Environmental Protection Agency. These systems provide data on such influences on health as climate, topography, and air and water quality.



Since 1790, the U.S. has collected decennial census data describing the age and sex distribution of the population at all geopolitical levels. Since the early 20th century, states have collected and reported data on births and deaths; again, these data are available at all geopolitical levels. The National Health and Nutrition Examination Survey, conducted by NCHS, continuously collect detailed biological data pertaining to the health status of Americans.

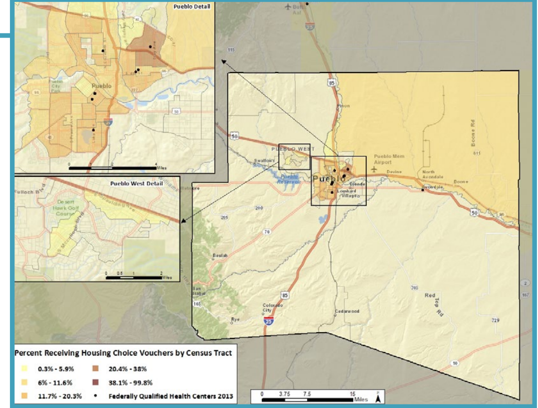
Ongoing and periodic data on employment, individual and household income, income inequality, and educational attainment are collected by the decennial Census of Population, the ongoing American Community Survey, and the Current Population Survey.

At the national level, the General Social Survey, a personal interview survey of U.S. households conducted since 1972 by the National Opinion Research Center, provides data on various cultural, political, and economic aspects of society, such as political viewpoints, sociopolitical participation, and social trends.



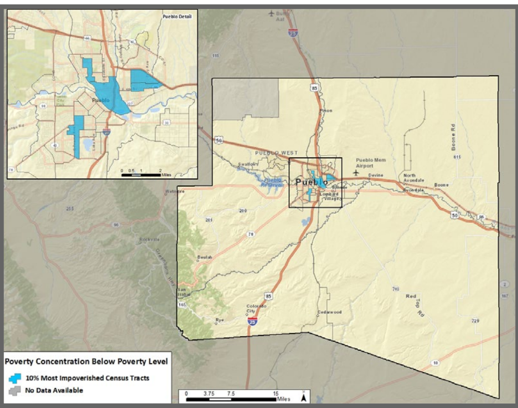
Percent Beneficiaries Under 65 Years by Census Tract

Medicare is most popularly known as a program for people over age 65, many of its beneficiaries are under age 65 and qualify because they have a disability or End Stage Renal Disease (ESRD). Younger beneficiaries represent a substantially different population from aged beneficiaries; they tend to be more ethnically diverse, have lower levels of education attainment, have greater SES challenges, are more likely to report fair to poor health, and are considered more clinically diverse. Overall, the under 65 beneficiary is more likely to have conditions that make health care priority. Because they are less independent in their daily lives, many needs require the fusing of medical and support services; help with household chores, transportation, or personal care.



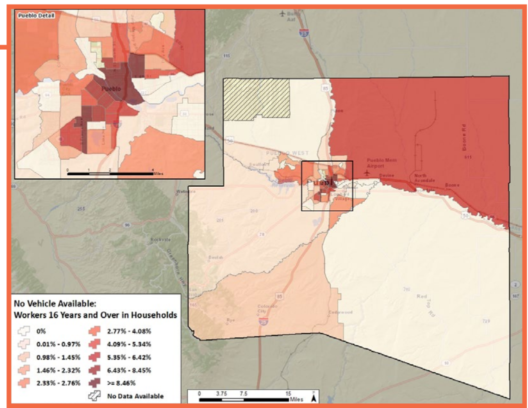
Housing Choice Voucher Programs by Census Tract and Federally Qualified Health Center Locations

Some housing types for low-income individuals or families may adversely affect their health outcomes. Poor-quality housing has a direct relationship to poor mental health, developmental delay, heart disease, and post-operative recovery. Housing Choice Voucher Programs (Section 8) may play a significant role in mitigating poor health outcomes. Section 8 has been shown to improve the socio-economic diversity of a neighborhood and may contribute to decreasing youth and adult risk taking behaviors. Federally Qualified Health Centers (FQHC) are non-profit comprehensive primary care providers charged with caring for low income working families and individuals. 17 FQHCs operate more than 130 community, migrant, homeless and school based clinics across Colorado; providing a wide variety of medical services. The FQHC benefit under Medicare became effective 10/1991.



Most Impoverished Census Tracts Among all Tracts with Income in the Last 12 Months Below Poverty Level

The mechanisms by which poverty affects health are complex, adverse health outcomes can be due to limited access to health care, greater exposure to environmental hazards and less favorable neighborhood characteristics. A large majority of older Americans report a preference for remaining as long as possible in their current home and community, known as "aging in place". Because of this desire, neighborhood risks and amenities become increasingly important. Access to public transportation, well-maintained and accessible sidewalks, easy access to grocery and drug stores contribute to the ability of older people to successfully age in place. Although urban settings, where most low-income older adults in subsidized or unsubsidized housing reside, may be more likely to offer many of these attributes in principle, that often is not the case in impoverished or low-income areas where public and other low-cost housing is located.



Percent Households with No Vehicle by Census Tract

Accessibility and the ability to reach a variety of destinations is critical to many dimensions of a healthy community. Particularly for the elderly, the young, people with disabilities or the financially disadvantaged, public transit is the mode of transportation that provides such access (where walking or cycling is too burdensome). Providing for transit accessibility requires that it's available from critical access points, of reasonably high quality and financially attainable. It also requires thinking about the design of these modes so that they are usable by as many people as possible, regardless of age, ability or circumstance, following the principles of universal design. Density is a critical dimension, though certainly not the only dimension to consider, for establishing service frequency and location.

CFMC ISO 9001 Certified

This material was prepared by CFMC (the Medicare Quality Improvement Organization for Colorado), the Data Liberacion project, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. PM-4070-088 CO 2014