The National Institutes of Health:
Investing in Population Sciences to Improve Health

What is demographic, or population, research?
Demography is the study of populations and how or why they change. Population scientists, including demographers, sociologists, economists, and statisticians, collect and analyze data on trends in births, deaths, family formation and separation; patterns of migration; health and disability; and racial, ethnic, and socioeconomic diversity in populations. Major policy issues that researchers from the field focus on include:

» Population Aging  
Understanding the consequences of population aging is essential to monitoring and maintaining the health and productivity of our population.

» Fertility, Marriage, and Children’s Health  
Studying fertility and family trends provides key insights into the long-term health and development of children.

» Immigration and Migration  
Analyzing the causes of population movements and their impact on the diversity, health and well being of our population informs policy-making about both immigration and settlement patterns within the U.S.

» Population Health  
Understanding how health and disease are distributed among demographic groups and regions of the country and the factors that contribute to health disparities provides critical information for improving health for all citizens.

Why does NIH support demographic or population research?
A central component of the NIH mission is “to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability.”

The health of our population is fundamentally intertwined with the demography of our population. Recognizing the connection between health and demography, the NIH supports population research programs primarily though the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the National Institute on Aging (NIA).

Demographic or population research provides the scientific tools for understanding the relationships between “macro” factors, such as family dynamics, population diversity, marriage, community, migration, and economic resources, and the health and well being of people. Research has found that the single greatest opportunity to improve health and reduce premature deaths lies in personal behavior. The methods, experience, and empirical rigor of demographic research are necessary to identify and understand the complex and interdependent causal processes affecting health behaviors and the health status of our population. This basic research mission belongs at the NIH because the NIH is the federal agency with the statutory mission for funding basic health research.
Examples of major NIH-funded demographic research advances

» In 1994, NICHD launched the National Longitudinal Study of Adolescent Health (Add Health), a survey of over 20,000 adolescents who have been followed for 15 years into adulthood. Add Health provides the evidence needed to reduce the prevalence and costs of chronic disease in America by understanding how adolescent environments and behaviors are linked to adult health. Scientists have used the Add Health data to track the obesity epidemic and its consequences for young people, which include lower educational attainment, wages, and socioeconomic status and higher risks of hypertension, diabetes, and severe obesity. These findings have profound public health implications for future cardiovascular disease burden in the U.S.

» In 1992, NIA began supporting the Health and Retirement Study (HRS), a longitudinal survey of 27,000 people 50 and older that monitors economic transitions in work, income, and wealth, allowing researchers to investigate how the domains of family, economic resources, and health interact. In 2011, researchers using the HRS found that voluntary use of Advance Directives specifying preferences for end-of-life care, known from previous work to improve family satisfaction, significantly lower levels of Medicare spending in regions with higher end-of-life spending. Qualified researchers are currently using HRS data in conjunction with genotype data from consenting participants to investigate the genetics of age-related changes in health.

» The Fragile Families and Child Wellbeing Study, a study following nearly 5,000 children born to, mostly, unmarried parents in large U.S. cities between 1998 and 2000, has demonstrated the role that family stability and parental involvement play in the long-term health and development of children. In 2011, researchers using both genetic and survey data from the study, found that post-partum depression was most likely among women with both at-risk genetic profiles and low educational levels.

» Drawing on NIH-funded research, population scientists working under the auspices of the National Research Council and the Institute of Medicine have issued two groundbreaking reports on the health of the US population compared with that of other high-income countries. The 2013 report (U.S. Health in International Perspective: Shorter Lives, Poorer Health) summarized the results: “this health disadvantage exists at all ages from birth to age 75 … even advantaged Americans - those who have health insurance, college educations, higher incomes, and healthy behaviors - appear to be sicker than their peers in other rich nations.” This conclusion reflects in part a 2006 article in the Journal of American Medical Association by population scientists who concluded that white middle-aged Americans are not as healthy as their English counterparts, and lower income and education levels are associated with poorer health in both countries.

Future research

Population sciences are poised uniquely to research the underlying causes and consequences of disease and disability. Some of the unanswered research questions population scientists are pursuing include:

» What effects will changing family patterns have on the health of children and adults?

» How do population movements caused by migration, immigration, and natural disasters, impact the social and natural environments and health of communities, families and individuals?

» What are the effects of social and economic policy on population health?

» What accounts for the strong connection between education, income, and health?

» Why are racial and ethnic disparities in health large and persistent?

» How will population aging and trends in health and disability affect pensions, Social Security, and health and long-term care systems as the Baby Boomers retire?

» How will programmatic changes in the U.S. health care system affect population health and health disparities?

Continued NIH investment in demographic, or population, research ensures these important health-related issues will be addressed, employing the highest standards of peer-reviewed scientific research.