

[njhome](#) | [my new jersey](#) | [people](#) | [business](#) | [government](#) | [departments](#)

[search](#)



new jersey
department of health and senior services

dhss

dhss home ◀

[CHS Home](#) | [Data](#) | [Reports](#) | [Subject Index](#) | [CHS A-Z](#) | [Links](#) | [FAQs](#) | [CHS Search](#)



Age Standardization of Death Rates in New Jersey Implications of a Change in the Standard Population

By: Rose Marie Martin, M.P.H.

Abstract

Beginning with data year 1999, the U.S. Department of Health and Human Services is using a new standard population based on the year 2000 population for age standardization (age-adjustment). The year 2000 standard population has replaced the standard population based on the 1940 population, which had been used by the National Center for Health Statistics and state Centers for Health Statistics for more than 50 years. Use of the year 2000 standard will narrow race differentials in age-adjusted rates, will affect rankings of leading causes of death and will have an impact on trends in age-adjusted rates for certain causes of death. This report examines the rationale for the change to a new standard population and the effect of the change on the age-adjusted rates for all causes and selected leading causes of death in New Jersey. Major implications of the change on data users are also explored. One of the major benefits from the change to a uniform standard will be the ability to compare age-adjusted rates from all state and federal agencies. The change to a new standard population will, however, require re-computation of age-adjusted rates for past years using the new standard population, for purposes of examining trends. The need to incorporate an examination of age-specific rates into any analysis of death rates is also addressed.

INTRODUCTION

Beginning with data year 1999, there was a change in the standard population used by federal and many state government and other health agencies for age adjustment of rates. The change in population standard has had an effect on the magnitude of death rates, on the ranking of the leading causes of death and on the relative disparities in these rates by race. In this report, these effects on New Jersey's death rates will be explored by examining relative rankings of leading causes of death, differences in crude and age-adjusted rates, and changes in racial differences in death rates using the two different age standards.

Death rates are greatly affected by the socioeconomic/demographic composition of the population at risk. Specifically, death rates have been shown to vary by age, race, gender, occupation, education and income levels of the population. However, death rates are most greatly impacted by the age distribution of the population.¹ The overall death rate and the death rates from most causes will be higher in populations with a greater proportion of persons in the older age groups than in populations with relatively large proportions of younger people. Thus, comparisons of crude or unadjusted death rates among groups or over time may be misleading if the age distributions of the populations at risk are different. For this reason, death rates intended for use as trend data or for comparisons among groups are usually adjusted or standardized, to remove the effect of the differences in age distribution over time or by place.

Age adjustment, using the direct method, requires the selection of a standard population. Since 1943, the National Center for Health Statistics (NCHS) and the state Centers for Health Statistics have used a standard population derived from the 1940 Census count. Population demographics have changed considerably since 1940 in this country. Fertility has declined resulting in a smaller proportion of the population in the youngest age groups at the same time that life expectancy has increased, leading to growth in the number and percentage of persons in the older age groups. This disparity between the actual and standard population distributions has led to a substantial discrepancy between the crude and age-adjusted death rates (Figure 1). Additionally, there is an overall lack of consistency in the use of standard populations. At present, there are at least three other standard populations in use by various governmental and private health agencies.² For example, the National Cancer Institute (NCI) uses the 1970 U.S. census count as the population standard for age adjustment and the New Jersey cancer registry has followed NCI's lead in using the 1970 population standard for age-adjusted rates.

To examine the major issues related to selection of a standard population, NCHS sponsored two workshops during the 1990s which included a wide range of governmental and private health professionals as well as academicians as participants. The outcome of the second workshop was a recommendation that a new standard for age adjustment of rates be adopted based on the projected year 2000 U.S. population. The recommendation has been approved by the Secretary of the Department of Health and Human Services and was implemented beginning with data year 1999.³

contact us | privacy notice | legal statement



department: [njdhss home](#) | [index by topic](#) | [programs/services](#)

statewide: [njhome](#) | [my new jersey](#) | [people](#) | [business](#) | [government](#) | [departments](#) | [search](#)

Copyright © State of New Jersey, 1996-2003

Department of Health and Senior Services

P. O. Box 360

Trenton, NJ 08625-0360

Last Updated: 07/14/2003 14:13:09