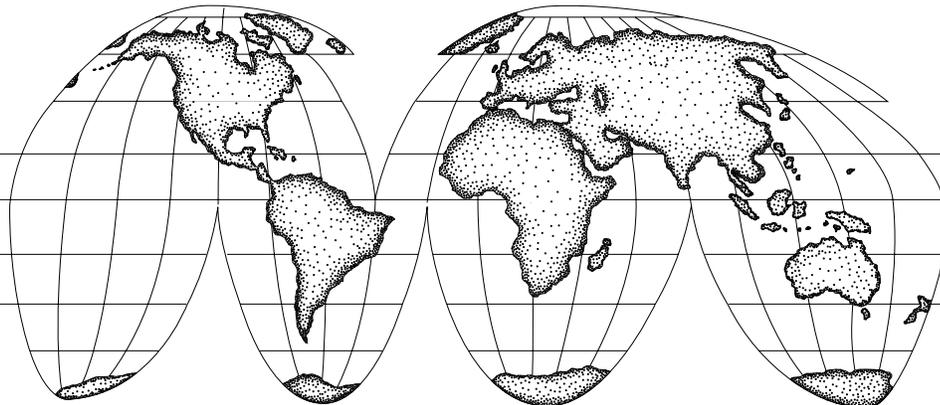

Proceedings of the International Collaborative Effort on Automating Mortality Statistics, Volume I

From the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics



Kimberley Peters, Editor

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Factographic Automated Information Reference System (FAIRS-"Potential")

Sergei P. Ermakov, D.Sc.; Vladimir V. Antonyuk, Ph.D.; Natalia S. Gavrilova, Ph.D.; and Galina N. Evdokushkina, Russian Institute of Public Health

The family of IBM PC-oriented information systems was developed for medico-demographic comparative analyses, for developing trends, and for the quantitative estimation of health priorities. This system is based on our methodological approach for constructing new demographic indices—the life potential and the working potential that link together some ideas from potential demography and a cohort consideration of the population (1).

The factographic automated information reference system (FAIRS-"Potential") can provide user-friendly population and mortality data input in compliance with Russian state statistic forms. It also calculates and compares many medico-demographic indices such as standard mortality ratios, age-adjusted mortality rates, the average age of death, and many other indices calculated for classes of diseases, and for individual categories of diseases, used in international statistical practice. This system also calculates integral complex indices of potential person-years lost due to premature mortality. These indices may be used for establishing priorities in regional health care planning processes and as specialized measures for estimating public health service development projects.

The system FAIRS2-"Potential" provides for: user-friendly input of primary death certificates in compliance with the Russian state registered system and user-friendly input of disability primary certificates. It also provides analyses of mortality data by classes of causes, individual causes within a class, by region and place of death, and accounting for sex, age, education, ethnicity, and social status, etc. Analyses of disability data by disability groups, disability causes, and regions are available as well.

Fairs-"Rayon" makes use of a new and original method of decomposing age-specific mortality patterns into endogenous and exogenous components and a specially-developed interaction algorithm using a "bootstrap - procedure" of assessing confidence intervals of obtained components by a simulation method. The system allows for a quantitative assessment of all external factors affecting mortality without measuring these factors by population size. This feature of the system creates a new opportunity for ecological monitoring.

System and decomposition methods allow the calculation of all the mortality indices mentioned above (see the first system, FAIRS-"Potential") and provide the opportunity for calculating the health potential for small areas.

This system was successfully used for preparing many articles and maps in the *Environmental and Health Atlas of Russia* (2).

The data presented below have already been calculated in the Department of Medical Demography of NPO "MEDSOCECONINFORM" and are ready for further distribution and dissemination.

Data Created by FAIRS-"Potential"

Description of Data—Age-specific mortality rates, 11 mortality indices, 8 indices of absolute losses of health potential.

Years—1980, 1981, 1989-96.

Regions—173 regions including 16 republics and the former USSR (1989-90 only), 72 regions for Russia (1980, 1981, 1989-96), 26 for Ukraine (1989-90 only), 18 for Kazakhstan (1989-91 only), 12 for Uzbekistan, 7 for Belorussia (1989-91 only), 5 for both Tadzhikistan (1989-91 only), and Turkmenistan (1989-90 only), 5 for Georgia (1989-90 only), and 4 for Kirgizstan (1989-91 only).

Causes of Death—195 individual causes of death (coded by ICD-9) and 18 classes of diseases.

Types of Settlement—Urban, rural, and both.

Data created by FAIRS2-"Potential" and FAIRS-"Rayon"

(Owned by the Sverdlovsk region medical information computer center.)

Description of Data—Death certificates, age-specific mortality rates, 11 mortality indices, and 4 indices of absolute losses of health and working potential.

Years—1990-95.

Regions—53 small areas in the Sverdlovsk region.

Causes of Death—195 individual causes of death (ICD-9) and 18 classes of diseases.

References

1. Ermakov, SP, Kiselev, AA. 1992. "Economical Aspects of Health," *World Health Statistical Quarterly*, vol. 45, no. 1, pp. 50-60.
2. *Environmental and Health Atlas of Russia*. 1995. Ed. by M. Feshbach Moscow, "PAIMS" Publisher House.