

in the eight years since Chernobyl, yet it is unclear when the problems related to living on contaminated soil will be alleviated. Post-disaster medical and public health planning must evaluate specific disease outcomes and the impact of alterations of the physical environment on human health, and must assess the deleterious effects of societal and economic changes on the well-being of populations.

This report focused on the current weaknesses in medical planning and

response to nuclear disasters in the period after an acute emergency (i.e., the mid- and long-term health consequences). These are critical times in dealing with many problems related to chemical, biological, and other human-made disasters, as well as natural disasters. The medical and social sciences are least developed in dealing with post-disaster health concerns in the mid- and long-term. Major deficiencies include the need for adequate testing methods that can be applied to large groups for

monitoring their physical and psychological health.

The creation of mobile units to evaluate mid- and long-term health risks among populations exposed to releases of nuclear radiation at Chernobyl, in the Ural mountains, and following other disasters is described. The findings indicate substantial, long-term physical and psychological health effects, and illustrate the importance of regular screening in assessing disaster impacts on health.

MONITORING AND ASSESSMENT: DIFFERENT PERSPECTIVES

Medical Monitoring

The Health of the Chernobyl Patients During the Late Consequences Period of the Acute Radiation Syndrome

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The Clinical Department of the Institute of Biophysics admitted 129 victims who were acutely exposed during the Chernobyl radiation accident in April 1986. Acute radiation syndrome (ARS) of different degrees of severity were diagnosed in 108 patients. Of this group, 27 patients died during the acute period (26 in Moscow and one in Kiev). The ARS diagnosis was verified in a total of 134 persons (including patients in Kiev). The number of patients under the dynamic observation of the Clinic gradually decreased during

the 8 years following the accident. In 1993–1994, the number patients being observed was 14.

During the later period, other serious problems occurred in some individuals who had sustained severe local radiation injuries (third degree); these included the development of radiation ulcers on the background of the severe scarring and trophic changes in the skin which required repeated plastic surgery. Nine patients developed radiation cataracts; eight patients from this group had *beta* radiation burns of the eyelids during the acute period, which documents the contribution of high-penetrative *beta* radiation to the etiology of radiation cataracts in the Chernobyl patients.

The oncological consequences in patients continuing to be followed in our Clinic are hypernephroma that developed in the seventh year in a

patient who survived ARS of a moderate degree of severity.

The most frequently observed consequences of ARS during the latent period include: 1) astheno-neurotic syndrome; 2) vegetative vascular dystonia; and 3) transient moderate leukopenia and thrombocytopenia.

Somatic diseases frequently observed during the late period in ARS survivors include: 1) Gastrointestinal disease; 2) Different neurological diseases and syndromes; and 3) Upper pulmonary tract diseases.

Thus, the similarity of the morbidity structure for nosological forms of somatic disease at the pre-accident time (anamnesis data) and at the late consequences of ARS (without dependence from the severity, i.e., from the dose of exposure) testifies to the absence of radiation factors contributing to the development of chronic somatic diseases.

Immunobiology and Psychosocial Aspects of the Health of Children After the Chernobyl Disaster

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Immunobiology

Various population groups who have suffered after the Chernobyl accident showed marked differences in irradiation levels that were combinations of external irradiation and radionuclide incorporation. Acute radiation syn-

drome patients, clean-up workers who were exposed to doses under the 1 Gy limit in 1986 and in subsequent years, those evacuated to Prypjat and those within a 30 km zone, and those who are still living in the territories contaminated with radionuclides comprise the