Background

On April 26, 1986, the Chernobyl nuclear power plant became the site of the world's worst nuclear reactor disaster. The force of the explosion emitted radiation over a broad area of the Northern Hemisphere, with a disporportionate share of fallout centered on the western half of the Soviet Union. Estimates of the affected population included the initial exposure of several million persons to abnormally high doses of radiation. Many were later determined to have been exposed to dangerously high levels of radiation contamination. Among this population, the prevalence of leukemia, thyroid cancer, and other radiation-related illnesses is expected to rise, particularly among the exposed children. The scientific, medical, and social ramifications of the Chernobyl disaster extend far beyond the exposed population, demanding worldwide attention to a unique, albeit potentially recurring, phenomenon.

In an initial attempt to address the needs of a segment of the affected population, "Children of Chernobyl" was begun in August, 1991, under the auspices of the Hadassah Medical Organization of Israel (HMO) and Lubavitch. The program intends to facilitate the transfer of children to Israel from the Chernobyl-affected regions and to provide appropriate medical evaluations, monitoring, and treatment for the children. Though an ambitious and praiseworthy endeavor, "Children of Chernobyl" lacks the resources necessary to provide an exhaustive remedy to the affected populations. Over 100,000 exposed persons have immigrated to Israel since 1989, with children comprising 20% of this population. The subpopulation which comprises the benficiaries of the program excludes many more Russian citizens, both children and adults, who remain at risk for medical complications and, as yet, untreated.

It is in the spirit of international cooperation and collaboration in the exercise of a humanitarian and scientifically-promising endeavor that the various groups represented in this consortium have agreed to participate.

Consortium Parties

The impetus for the cooperative effort was provided by Dr. Armin Weinberg of the Texas Hadassah Medical Research Foundation (THMRF) and The Methodist Hospital (TMH), Houston, TX. In view of the wealth of scientific and medical information to be extracted for the benefit of the affected populations and potential future victims of a related nuclear disaster, Dr. Weinberg entered into agreement with the Hadassah Medical Organization (HMO) of Israel to perform mutual research programs, exchange staff members, and create a registry of the Chernobyl victims. With the rapid immigration of former Soviet Jews from Chernobyl-affected regions to the Houston area since 1986, numbering at present over 200 families, the opportunity to investigate the problems both in the United States and abroad presented itself. Clearly, there exists a compelling need to address the social and physical manifestations of this new and ever-increasing population.

The relationship of the Fred Hutchinson Cancer Research Center (FHCRC) with the Chernobyl incident is inveterately rooted. Beginning with the treatment of Russian pilots exposed to the nucelar fallout, FHCRC had dispatched a team of scientific investigators to the former Soviet Union to aid local efforts. Plans to establish a collaborative exchange effort between FHCRC and the All-Union Scientific Center for Hematology in Moscow were interrupted by geopolitical changes in the former Soviet states. Thus the groundwork laid by FHCRC in the former Soviet Union nd the world-renown status of the Center in both the exercise of cancer research and the delivery of medical care to cancer patients make their involvement in this agreement of benefit to all.

The National Marrow Donor Foundation (NMDP) brings to this forum experience in the coordination of collaborative efforts and the centralized direction necessary for the project. NMDP possesses unparalleled data management and unrelated donor tracking capabilities. With the additional capacity to create and monitor an international cell repository, NMDP will serve as the planning and integrative component of the project.

One of the largest funding bodies in the area of transplantation, the C.W. "Bill" Young Marrow Donor and Research Center (U.S. Navy) also has a vested interest in the collaborative effort. Their interest in the prevention and treatment of radiation-induced injuries stems from the exposure of a significant portion of their employees

to such potentially hazardous materials. The U.S. Navy thus provides the forum with financial backing, clinical guidance, and practical considerations.

The National Heart, Lung, and Blood Institute (NHLBI), in addition to being a major financial backer of the NMDP, is interested in the hematological aspects of this research endeavor.

Justification

The central objectives of the joint research program are twofold: (1) to facilitate the free and open exchange of data, including the long-term tracking of radiation exposure in the affected cohorts and (2) to foster research among and between scientists in the United States, Israel, and Russia, including the establishment of a research center near Chernobyl staffed by an ongoing exchange of scientists.

Both of these objectives are in concert with the interest on the Department of Energy (DOE). The Working Group 7.2 policy guidelines on the health effects of the Chernobyl incident are consistent with our efforts. This international endeavor will complement the ongoing research efforts sponsored by DOE in several ways: (1) the proposed biological and physical dosimetry projects will expand both the research cohorts and the scientific personnel and data exchanges currently underway; (2) the proposed involvement of the NMDP in donor registries and data management will vastly expand the current efforts of John's Hopkins School of Public Health and create a U.S.-based registry and unrelated donor matching program; (3) the project will create the first multi-national collaborative research efforts to address and monitor the long-term health effects of the Chernobyl accident; (4) the project will effect an opportunity for the worldwide standardization of protocols, measures, approaches, and scientific review that will portend greater opportunities for cooperative research in the developing global economy; and (5) the U.S. has a worldwide responsibility to engender humanitarian efforts that is bolstered by the ever-increasing U.S. population of former Soviet citizens from affected regions.

The information gleaned from this effort will also aid DOE's Department of International Affairs and Energy Emergencies ongoing efforts "to coordinate cooperative international energy programs with foreign governments and international organizations." Similarly, the Environment, Safety, and Health Department will be aided in its efforts to provide epidemiological expertise relating to occupational and community health.

Most significantly, this proposal offers the DOE the opportunity to be the lead organization in developing and fostering international agreements between various scientific and medical groups that are striving for mutually-beneficial goals. This agreement will emphasize the ability of such groups to coordinate often disparate responsibilities during a time of intense fragmentation both within the former Soviet Union and among the various scientific organizations within the United States. The standardization of protocols and measures will not only serve the interest of this project, but will also lay the foundation for future cooperative endeavors between global agents. An additional opportunity for coordination and long-term followup is provided by the careful tracking of the affected cohorts in Israel, Russia, and the U.S. The infrastructure of the Jewish communities in these countries is sufficiently coordinated to facilitate the monitoring of the participants.