

STRENGTHENING LABORATORY SURGE CAPACITY OF THE WHO MEMBER
STATES THROUGH DEVELOPMENT OF GLOBAL RADIATION BIODOSIMETRY
LABORATORIES NETWORK

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The World Health Organization (WHO) held a consultation meeting at WHO Headquarters, Geneva Switzerland, December 17-18, 2007 to develop the framework for a global biodosimetry network (BioDoseNet). This meeting resulted in a series of recommendations for the creation of a world wide, multi-laboratory network providing a capability to provide dose data for radiation disasters.

The revised International Health Regulations (IHR) came to force in June 2007. A legally binding framework for international cooperation for preparedness and efficient response to public health emergency of any nature, the IHR places the responsibility for adequate resource mobilization on both Member States and the World Health Organization (WHO). In order to fulfill its duty under the IHR implementation plan, the WHO has established the Global Laboratory Services Directory Network. A biodosimetry branch of this network is being developed to address the threat-specific laboratory needs in case of radiation emergencies.

A WHO network, consisting of participating laboratories throughout the world, is envisioned to provide a dose assessment capability by multiple methods (i.e., cytogenetics, electron paramagnetic resonance (EPR), radionuclide bioassays, etc.), however, the initial discussion focused on the cytogenetic bioassay (i.e., metaphase-spread dicentric). In addition, these laboratories will have a common and standardized protocol for both assessment, and collaboration and reporting during an emergency.

Few regional cytogenetic biodosimetry networks have been established so far. However, the roles and resources available from United Nations (UN) agencies that provide international cooperation in biological dosimetry response to radiation emergencies were reviewed. In addition, extensive reliance on the use of the relevant International Standards Organization (ISO) standards was emphasized (principally ISO 21243).

The results of a WHO survey of global cytogenetic biological dosimetry capability were reported and, while it indicates robust global capability, there was a clear lack of present global leadership and coordination. The expert group, focused on cytogenetic biodosimetry, formulated the general scope and concept-of-operations framework for the development of the WHO global biodosimetry laboratory network for radiation emergencies.