Contribution ID: **118** Type: **poster preferred**

Evolution of the Canadian Biological Dosimetry Network

Tuesday, 16 October 2012 16:17 (1 minute)

In the event of a large scale radiological/nuclear emergency, biological dosimetry is essential for providing timely assessments of radiation exposure for the general population and to identify first responders who must be restricted from further exposure. The dicentric chromosome assay (DCA) is currently the accepted biodosimetry method for radiation dose assessment, however in a mass casualty scenario this assay is not well suited for providing timely dose estimates due to its time- and expertise-intensive nature. Over the past ten years, Canada has developed a program to increase biological dosimetry throughput using the DCA.
As a first step, Canada developed a National Biological Dosimetry Response Plan (NBDRP) which is comprised of a network of four core reference laboratories and multiple clinical cytogenetic laboratories. The core laboratories participate in annual exercises to demonstrate their ability to provide accurate and timely triage quality dose estimates. In addition, the clinical cytogenetics students are being trained to expand our current DCA scoring capacity. Recently, two biological dosimetry laboratories from the United States have joined our network by taking part in our annual intercomparisons.
To further increase the throughput of biological dose estimates, triage DCA scoring of 50 cells per sample had been adopted. This has now evolved into a "QuickScan"technique which has been evaluated and validated within the NBDRP, as an alternative rapid scoring approach. It has been shown that the DCA QuickScan can provide critical dose information at a much faster rate than the conventional DCA without sacrificing accuracy.
The evolution of this network over the past 10 years will be reviewed with focus on how to maintain a functional network through annual exercises and intercomparisons and how Canada is prepared to assist on the international level through participation in networks such as the World Health Organization lead BioDoseNet.
(Funded by the Chemical, Biological, Radiological and Nuclear Research and Technology Initiative)

Primary author: Dr WILKINS, Ruth (Health Canada)

Co-authors: Ms FLEGAL, Farrah (, Atomic Energy of Canada Limited, Chalk River Laboratories); Ms BOULAY GREENE, Hillary (Defence Research and Development Canada-Ottawa)

Presenter: Dr WILKINS, Ruth (Health Canada)

Session Classification: Poster Session 1

Track Classification: Biological and Physical Dosimetry