Oral Presentation

Exposure Assessment

0216 OCCUPATIONAL RADIATION DOSES IN NUCLEAR MEDICINE: A US MULTI-CENTRE STUDY

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Nuclear medicine techniques developed in the second half of the 20th century have become very sophisticated and have been used extensively in the diagnosis and treatment of disease. A surge of new dedicated radiopharmaceuticals and increased demand has led to a growing interest regarding increasing radiation exposure and possible associated health risks to the nuclear medicine technologists who perform these procedures. However, to date, very limited information has been provided on radiation doses received by nuclear medicine technologists.

In this study, we collected annual and lifetime badge dose information for United States technologists certified in nuclear medicine between 1979 and 2015. Nine large US medical institutions from several geographical locations contributed information on 208 nuclear medicine technologists, linked to historical badge dose records maintained by a major commercial dosimetry company, yielding 2618 total dose records.

The mean and median annual badge doses per technologist were 2.7 and 2.2 mSv, respectively, and more than 3% of the annual doses exceeded 10 mSv. The mean annual doses substantially increased around the year 2000, consistent with the expanded use of Positron Emission Tomography (PET). Mean and median lifetime doses of 51.4 and 32.9 mSv could be established for 45 technologists.

Doses in this sample of nuclear medicine technologists were higher than expected, compared with previously published values for nuclear workers or radiologic technologists. These results suggest that nuclear medicine technologists may be one of the most highly-exposed radiation worker populations currently.

Poster Presentation

Methodology

0217 MESOTHELIOMA AND CANCER OF THE PLEURA DEATHS – RECOVERING MISSING CASES FROM HOSPITAL RECORDS

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Background Mesothelioma is a rare cancer of high lethality associated with asbestos exposure. In several studies mesothelioma and cancer of the pleura (MCP) are analysed together because misdiagnoses or coding errors between them are common. Undercounting and underreporting of these diseases have been demonstrated, particularly where access to diagnostic resources is poor as for developing countries.

Objective To examine the performance of a probabilistic linkage used to match data from death certificates (Mortality Information System) to deaths reported in hospital records (Authorisation of Hospital Admissions of the National Health System).

Methods Cases with diagnosis coded as C45.0 - C45.9 and C38.4 (International Classification of Diseases 10th Revision) were selected from each anonymous database from 2002 to 2012, Brazil. After probabilistic linkage, matched and unmatched cases were combined in a single individual database. Linkage performance was examined by confirming matched cases based on similar datasets which includes full names, available only for the São Paulo state.

Results A total of 1059 MPC cases were found, 718 (71.7%) with records only in the Mortality Information System, 277 (23.6%) registered exclusively in the hospital database, and 57 (5.7%) matched with data in both databases. The majority of hospital unmatched cases had other cancer diagnosis as the underlying cause of death (87.4%). Linkage failed to match only five cases due to inconsistencies in birth dates or gender records.

Conclusions Probabilistic linkage can be a tool to recover missing cases of MCP in death certificates using hospital admissions records in Brazil.

Oral Presentation

Developing Countries

0218 WORK-RELATED INJURY MORTALITY AMONG CHILDREN AND ADOLESCENTS IN BRAZIL, 2000 – 2014

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Objective Fatal work-related injuries among children and adolescents cause outrage and reveal the failure in the protection of these vulnerable groups. This study estimates the work-related injuries mortality rate among Brazilian workers aged 10 to 24 years between 2000 and 2014.

Methods This is a mortality study carried out with data from the Mortality Information System, SIM, and census data from the Brazilian Institute of Geography and Statistics, IBGE. Cases were identified using data on the work-related nature of the injury, compulsory in death certificates for external causes. Estimates are separated by age ranges for which distinct protective norms are applicable.

Results In total, there were 7484 fatal work-related injuries during the study time. Of these, 2.8% (n=208) among children from 10 to 14 years old, 9.2% (n=691) in the group