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| **TABLE S-1.** Mortality Analyses for Canadian Petroleum Cohort (1964-2006): Period of Hire | | | | | | |
|  | **HIRED 1964-1974** | | | **HIRED 1975+** | | |
| **Cause of Death** | **Observed** | **Expected\*** | **SMR (95% CI)** | **Observed** | **Expected\*** | **SMR (95% CI)** |
| All Causes | 931 | 1331.7 | 0.70 (0.66-0.75)\*\* | 738 | 1086.8 | 0.68 (0.63-0.73)\*\* |
| Infective & Parasitic Disease (Dx) | 8 | 23.4 | 0.34 (0.15-0.67)\*\* | 19 | 36.0 | 0.53 (0.32-0.83)\*\* |
| Acquired Immune Deficiency Syndrome | x | 10.1 | - | 10 | 23.4 | 0.43 (0.21-0.79)\*\* |
| Malignant Neoplasms (MN) | 365 | 461.9 | 0.79 (0.71-0.88)\*\* | 268 | 346.1 | 0.77 (0.68-0.87)\*\* |
| MN Buccal Cavity and Pharynx | 5 | 11.5 | 0.44 (0.14-1.02) | 5 | 8.8 | 0.57 (0.18-1.33) |
| MN Esophagus | 9 | 12.5 | 0.72 (0.33-1.36) | 8 | 9.5 | 0.85 (0.37-1.66) |
| MN Stomach | 12 | 16.2 | 0.74 (0.38-1.30) | 12 | 11.8 | 1.02 (0.53-1.78) |
| MN Large Intestine except Rectum | 29 | 41.6 | 0.70 (0.47-1.00) | 26 | 29.7 | 0.88 (0.57-1.28) |
| MN Rectum & Rectosigmoid Junction | 9 | 11.9 | 0.76 (0.35-1.44) | 10 | 8.7 | 1.15 (0.55-2.12) |
| MN Liver | x | 7.4 | - | x | 6.3 | - |
| MN Gallbladder | x | 2.9 | - | x | 2.0 | - |
| MN Pancreas | 17 | 22.7 | 0.75 (0.44-1.20) | 16 | 16.4 | 0.98 (0.56-1.59) |
| MN Nose/Sinuses | 0 | 0.6 | - | x | 0.5 | - |
| MN Bronchus & Lung | 103 | 137.8 | 0.75 (0.61-0.91)\*\* | 65 | 96.1 | 0.68 (0.52-0.86)\*\* |
| MN Bone | 0 | 1.2 | - | 0 | 1.2 | - |
| Malignant Melanoma | 6 | 7.9 | 0.76 (0.28-1.64) | x | 7.5 | - |
| MN of Connective and Other Soft Tissue | x | 2.9 | - | x | 3.0 | - |
| Mesothelioma | x | 1.6 | - | 6 | 1.2 | 5.14 (1.89-11.18)\*\* |
| MN Breast | 24 | 27.7 | 0.87 (0.56-1.29) | 19 | 23.2 | 0.82 (0.49-1.28) |
| MN Cervix Uteri | x | 3.1 | - | x | 3.1 | - |
| MN Corpus Uteri | x | 1.2 | - | x | 0.9 | - |
| MN Ovary/Fallopian Tube/Broad Ligament | 5 | 7.2 | 0.69 (0.23-1.62) | 9 | 5.5 | 1.62 (0.74-3.08) |
| MN Prostate | 13 | 16.7 | 0.78 (0.42-1.33) | 11 | 10.2 | 1.07 (0.54-1.92) |
| MN Testis | x | 1.2 | - | x | 1.1 | - |
| MN Kidney | 12 | 11.9 | 1.01 (0.52-1.76) | x | 9.0 | - |
| MN Bladder | 10 | 7.9 | 1.27 (0.61-2.34) | x | 5.4 | - |
| Nervous System Malignant, Benign & Unspecified | 25 | 20.2 | 1.24 (0.80-1.83) | 11 | 18.6 | 0.59 (0.30-1.06) |
| All Brain Tumors | 25 | 19.0 | 1.32 (0.85-1.94) | 8 | 17.7 | 0.45 (0.20-0.89)ŧ |
| MN - Brain | 24 | 16.8 | 1.42 (0.91-2.12) | 7 | 15.8 | 0.44 (0.18-0.92)ŧ |
| MN CNS Tumors (excluding brain) | 0 | 0.5 | - | x | 0.3 | - |
| MN Site Unknown | 15 | 20.9 | 0.72 (0.40-1.19) | 13 | 15.9 | 0.82 (0.44-1.40) |
| Hodgkin Disease | x | 2.6 | - | x | 2.1 | - |
| Non-Hodgkin Lymphoma | 14 | 17.3 | 0.81 (0.44-1.36) | 13 | 14.3 | 0.91 (0.48-1.55) |
| Diffuse Non-Hodgkin Lymphoma | 9 | 9.0 | 1.00 (0.46-1.90) | 6 | 7.5 | 0.80 (0.29-1.74) |
| Follicular Non-Hodgkin Lymphoma | 11 | 8.6 | 1.27 (0.64-2.28) | 7 | 7.0 | 1.01 (0.41-2.08) |
| Leukemias | 14 | 15.9 | 0.88 (0.48-1.48) | 9 | 12.7 | 0.71 (0.33-1.35) |
| Acute Non-Lymphocytic Leukemia | 8 | 7.6 | 1.05 (0.46-2.08) | x | 6.1 | - |
| Acute Myeloid Leukemia | 7 | 5.2 | 1.36 (0.55-2.79) | x | 4.3 | - |
| Chronic Myeloid Leukemia | 0 | 2.0 | - | x | 1.7 | - |
| Acute Lymphoid Leukemia | x | 1.2 | - | x | 1.3 | - |
| Chronic Lymphoid Leukemia | x | 2.6 | - | x | 1.7 | - |
| Other Leukemia | x | 2.6 | - | x | 2.0 | - |
| Multiple Myeloma & Immunoproliferative Dx | 8 | 7.0 | 1.14 (0.49-2.25) | x | 4.9 | - |
| Multiple Myeloma | 7 | 6.9 | 1.01 (0.41-2.09) | x | 4.9 | - |
| Myelodysplastic Syndrome | 0 | 1.0 | - | x | 0.7 | - |
| Chronic Myeloproliferative Disease | x | 0.9 | - | 0 | 0.7 | - |
| Benign Neoplasms | 0 | 1.2 | - | x | 0.9 | - |
| Disease of Blood & Blood Forming Organs | x | 3.3 | - | x | 2.9 | - |
| Aplastic Anemia | 0 | 0.6 | - | x | 0.5 | - |
| Endocrine/Nutritional/Metabolic Disease | 21 | 42.7 | 0.49 (0.31-0.75)\*\* | 19 | 33.9 | 0.56 (0.34-0.88)\*\* |
| Diabetes Mellitus | 19 | 32.8 | 0.58 (0.35-0.90) ŧ | 14 | 24.7 | 0.57 (0.31-0.95)ŧ |
| Amyotrophic Lateral Sclerosis | 9 | 4.9 | 1.83 (0.84-3.48) | 6 | 3.9 | 1.53 (0.56-3.33) |
| Circulatory Disease | 266 | 377.7 | 0.70 (0.62-0.79)\*\* | 160 | 260.2 | 0.62 (0.52-0.72)\*\* |
| Cerebrovascular Disease | 40 | 52.0 | 0.77 (0.55-1.05) | 16 | 36.1 | 0.44 (0.25.3-0.72)\*\* |
| Acute Myocardial Infarction | 93 | 146.1 | 0.64 (0.51-0.78)\*\* | 44 | 95.2 | 0.46 (0.34-0.62)\*\* |
| Diseases of Arteries, Arterioles & Capillaries | 11 | 17.6 | 0.63 (0.31-1.12) | 9 | 12.0 | 0.75 (0.34-1.43) |
| Aortic Aneurysm | 6 | 9.7 | 0.62 (0.23-1.34) | 8 | 6.8 | 1.18 (0.51-2.32) |
| Respiratory Disease | 39 | 64.3 | 0.61 (0.43-0.83)\*\* | 26 | 43.5 | 0.60 (0.39-0.88)\*\* |
| Chronic Obstructive Pulmonary Disease | 15 | 24.6 | 0.61 (0.34-1.00) | 9 | 15.4 | 0.59 (0.27-1.11) |
| Digestive Disease | 36 | 61.2 | 0.59 (0.41-0.81)\*\* | 32 | 46.8 | 0.68 (0.47-0.97)ŧ |
| Cirrhosis of Liver | 22 | 34.2 | 0.64 (0.40-0.97) ŧ | 17 | 26.3 | 0.65 (0.38-1.04) |
| Diseases of Pancreas | x | 3.0 | - | x | 2.3 | - |
| Genitourinary Disease | 10 | 13.9 | 0.72 (0.35-1.32) | x | 9.5 | - |
| Kidney Diseases | 9 | 12.1 | 0.75 (0.34-1.42) | x | 8.3 | - |
| Accidents/Poisonings/Violence | 112 | 195.7 | 0.57 (0.47-0.69)\*\* | 147 | 225.4 | 0.65 (0.55-0.77)\*\* |
| Motor Vehicle Traffic Accidents | 35 | 54.8 | 0.64 (0.45-0.89)\*\* | 50 | 54.9 | 0.91 (0.68-1.20) |
| Motor Vehicle Non-Traffic Accidents | 0 | 1.6 | - | x | 2.5 | - |
| Water Transport Accidents | x | 4.4 | - | x | 3.7 | - |
| Air and Space Transport Accidents | x | 3.2 | - | x | 2.6 | - |
| All Other Accidents | 27 | 53.7 | 0.50 (0.33-0.73)\*\* | 34 | 58.1 | 0.59 (0.41-0.82)\*\* |
| Suicide | 40 | 60.2 | 0.67 (0.48-0.91)\*\* | 42 | 81.7 | 0.51 (0.37-0.70)\*\* |

\*Expected deaths based on Canadian general population mortality rates

\*\*Statistically significant at P < 0.01

ŧ Statistically significant at P <0.05

SMR (95% CI): Standardized Mortality Ratio (95% Confidence Interval)

x Observations in the 1 to 4 observed range are not reported in accordance with disclosure rules of Statistics Canada