17 BUILT ENVIRONMENT SAFETY: EPIDEMIOLOGY OF HEAD AND BRAIN INJURY AND FRACTURES FROM STAIR FALLS IN CANADA

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Background Falls are overtaking traffic injuries as the leading cause of not only injury hospitalisation, but also death. Stairs are of special interest for prevention by design, being subject to building codes.

Objectives To assess importance and determinants of stair as causes of death and hospitalisation in Canada and a major rural-small urban region in the British Columbia interior.

Methods National and provincial mortality and hospitalisation databases were used to compare determinants and trends of external cause W10 with other falls, grouping nature of injury codes for W10 by head and brain trauma and limb fractures.

Results In Canada, stair-related deaths averaged 280/year and 0.9/100 000 person years in 32 000 000 population during 2000–2008, accounting for 63% of inter-level fall deaths, 25% of known and 13% of all fall causes. There were about 10 000 stair-related hospitalisations/year, 36 : 1 hospitalisations:deaths. The British Columbia Interior Health Region had 2586 hospitalisations, 3.5/1000 person

years in 750 000 population during 2002–2010; 54% were females, with 46% females and 54% males <65 years-old. Head injuries represented 12% of hospitalisations, extremity fractures most others. Males 5–64-years-old accounted for most severe head injuries, including subdural and epidural haematomas. Stairs were the leading specified cause of head injury, exceeding road crashes.

Significance Stairs are a key built-environment issue, especially for homes. With victims younger than for most falls, disability can be prolonged. Building codes should provide automatic passive protection for all ages by mandating step geometry including deeper treads and short uniform risers, graspable handrails, and high vertical barriers.