## 0403 INJURY AND SPATIAL EPIDEMIOLOGY OF SEVERE ADULT TRAUMA: IMPLICATIONS FOR PREVENTION

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**Background** Identifying who is injured within a geographic region, by what mechanism, is essential for injury prevention (IP). Our objective was to define the injury and spatial epidemiology of severe adult traumas to prioritise and target initiatives.

**Methods** Epidemiologic profiles were generated for severely injured (ISS>12) adult (≥18 years) patients treated at Lead Trauma Hospitals (LTH) in Southwestern Ontario, 2004–2009. Sub-analysis was undertaken by age groups (18–24; 25–64; 65+ years). Injury cases were mapped by patient residence and place of injury to examine spatial relationships.

**Results** LTHs resuscitated 2804 severely injured adults (15% young adult, 55% adult, 30% senior; 72% male). Patient residences were dispersed throughout SWO, with clusters in cities and lower-income areas. MVCs accounted for 61% and 46% of injuries among young adults and adults, respectively. Only 60% of injured-occupants wore a seatbelt; 24% of drivers had a BAC above the legal limit. MVCs were overly concentrated on high-density urban areas with highly mixed land uses. Alcohol was involved with nearly one-third of non-senior severe injury (48% of assaults; 34% of crashes). Falls were the leading injury mechanism for seniors (68%); 67% occurred at home. Only 6% of patients were injured at work, half involved falls. Mortality was 15%, with 42% fall-related deaths.

**Conclusion** Integrating injury epidemiology with geographic data on patients daily surroundings allowed for the identification of socio-spatial variations in injury patterns among vulnerable groups. This approach identified MVCs, falls and alcohol use as IP priorities to be targeted to the populations and regions of greatest need.