Methods: The Ohio Bureau of Workers' Compensation (OBWC) prepared a data extract of all claims filed by workers employed by firms classified as trucking firms by the NCCI Rating Manual. The OBWC administrative files do not include data on the truck firm characteristics or truck operations. However, the Motor Carrier Management Information System (MCMIS) file contains several data elements that describe such characteristics for all interstate trucking firms. For factors such as the type of truck operated and the cargo carried, aggregate data on truck type, truck configuration, and cargo carried could be acceptable surrogates if truck firms are sufficiently homogenous. Linkage was performed using company name and geographic location.

Results: Carriers are relatively homogeneous with respect to type of truck and type of cargo hauled. Truck type can be predicted accurately for about 83% of the drivers by using the predominant truck type for the driver's firm. Carriers focus on a relatively narrow range of cargo types. Over 47% of carriers haul only one type of cargo (typically general freight). Only 7.3% of carriers recorded more than three types of cargo. Many of the cargo types are closely allied. To date, over 70% of worker's compensation claims of trucking firms were linked to MCMIS carrier file, using company name and address. The linking algorithm employed a strategy of incremental normalization of match strings. All matches were reviewed manually.

Conclusion: In industries with relatively homogenous firms, such as trucking, aggregate data can provide adequate surrogates in developing covariates for estimating models. Administrative files can be linked to provide reasonably comprehensive analysis files, even without common unique identifiers.

D3.4

Title: Truck Crash Experiences of For-hire Motor Carriers in the United States: 2000-2001

Authors: Chen GX, Husting EL, Jenkins EL

The truck crash experience of for-hire motor carriers in the United States from 2000 to 2001 was studied to identify risk factors by using the Motor Carrier Information System (MCMIS). MCMIS is a computerized system whereby the Federal Motor Carrier Safety Administration (FMCSA) maintains a comprehensive record of the motor carriers and shippers who are subject to the Federal Motor Carrier Safety Regulations or Hazardous Materials Regulations. MCMIS data includes a Crash file containing data from State police crash reports electronically transmitted to FMCSA.

From 2000 to 2001, there were a total of 82,261 police-reported crashes (3,528 fatal, 37,980 injury, and 39,972 tow-away crashes) involving 19,918 for-hire motor carriers with a total of 1,078,610 trucks. The fatal crash rate was 0.42 crashes/100 trucks for carriers with 1-30 trucks, 0.17 for carriers with 31-200 trucks, 0.15 for carriers with 1,001-4,000 trucks, 0.14 for carriers with 201 to 1,000 trucks, and 0.06 for carriers of more than 4,000 trucks. The rate was 0.6 for individual operated carriers, 0.24 for partnership carriers, and 0.15 for cooperation carriers. The rate varied by carrier's geographic location from 0.22 per 100 trucks for the Region 8 (CO, MT, ND, SD, UT, and WY) to 0.07 for the Region 1 (CT, ME, MA, NH, NY, NJ, RI, PR, and VI). Intrastate carriers had a higher rate than interstate carriers (0.28 vs. 0.16). The rate was 0.24 for coal and coke carriers, 0.23 for produce carriers, 0.22 for cold food carriers, 0.21 for dry bulk and building material carriers, and 0.20 for general freight and metal/sheet/coils/rolls carriers, compared to 0.16 for for-hire carriers overall.

This study suggests some high risk factors related to for-hire motor carrier truck crashes which may warrant further study. Strengths and limitations of using MCMIS data for research are also discussed.

D3.5

Title: Driver Distraction/Inattention and Driver Fatigue as Risk Factors for a Fatal Commercial Vehicle Collision in Kentucky

Authors: Bunn TL, Kurpad A, Struttmann TW, Browning SR, Caldwell GG

In a previous study examining occupational vs. nonoccupational fatal motor vehicle collisions (MVCs) in Kentucky, the percentage of fatal occupational MVCs involving driver fatigue and/or driver distraction and inattention was increased relative to fatal nonoccupational MVCs (15% vs. 3% for driver fatigue and 25% vs. 13% for driver inattention/ distraction).

This study was undertaken to determine if driver fatigue and inattention may be increased risk factors for fatal commercial vehicle collisions (CVCs) when compared to nonfatal CVCs in Kentucky. Case and control data were obtained from the Kentucky Collision Report Analysis for Safer Highways (CRASH) electronic files for 1998-2001 from the Kentucky State Police Records section. CVCs were selected from all 560,497 MVCs. Cases (n= 51) were drivers who died (fatal) and controls (n= 31,629) were drivers who survived (nonfatal) a CVC. Cases were matched to Fatality Assessment and Control Evaluation (FACE) cases to confirm working status at time of death. Selection variables for cases and controls included vehicle type, position in vehicle, and injury classification.

In descriptive analyses, driver distraction/inattention (31% cases vs. 26% controls), fatigue (10% cases vs. 1% controls), and the vehicle not under proper control (10% cases vs. 2% controls) were factors more frequently involved in fatal CVCs compared to nonfatal CVCs. Additionally, more deceased CVC drivers were not using their seatbelts (47% cases vs. 6% controls), were trapped (55% cases vs. 1% controls) and were totally ejected (24% cases vs. 0% controls) from their vehicles compared to

NOIRS 2003 ABSTRACTS

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DAY ONE —TUESDAY, OCTOBER 28, 2003

CONCURRENT SESSION: A
10:30am - 12:00pm