CONCLUSION

Occupational health is an important public health issue in Colorado. A strong occupational health surveillance program is needed to collect baseline data, monitor trends, respond to occupational health threats, and prioritize occupational health issues that are specific to Colorado. Collecting and analyzing data on workplace injuries and illnesses can guide the development of new and safer technologies, educational activities, and policy changes that make workplaces healthier. This Occupational Health Indicators report describes the status of worker health in Colorado for both the initial project years (2001-2005) and the supplemental years (2006-2007 and 2008 if the data are available).

Between 2001 and 2008, an average of 2.4 million individuals were employed in Colorado. On average, 120 workers died per year, accounting for approximately 5.0 worker deaths for every 100,000 in the workforce. (U.S. rate = 3.9/100,000 workers). The most common fatal work-related event or exposure in Colorado was transportation incidents, accounting for over 48% of occupational fatalities. This was followed by assaults and violent acts (18%), contact with object (15%), and slips trips and falls (11%). Black, non-Hispanic workers had the highest work-related fatality rate at 5.9 fatalities per 100,000 black workers, followed by Hispanic workers at 5.5/100,000, White, non-Hispanic workers at 4.1/100,000, and other races at 0.9 per 100,000 workers.

Consistent with the high fatality rate in Colorado, the percent of workers employed in industries at high risk for occupational mortality was higher in Colorado than the United States (15% in Colorado and 14% in the United States from 2003-2007). Although the percent of workers employed in industries at high risk for occupational mortality was higher than United States rate and may contribute to the high fatality rate, this does not completely explain why the Colorado fatality rates remain high when the national rate has decreased over time. Priorities and future directions to enhance surveillance, prevention and intervention in Colorado should focus on industries and occupations in Colorado experiencing a high rate of fatal work-related injuries and illnesses. Occupational related fatalities create a significant burden, and further tracking and characterizing of the fatalities and the risks associated with the deaths is a first step in planning interventions for prevention.

Based on data from the OHIs, the rate of acute occupational pesticide poisonings reported to poison control centers was higher in Colorado than the overall United States rate**.** On average, between 2001-2008, 2.5 out of every 100,000 Colorado workers reported a work related pesticide poisoning to the RMPDC. When limiting the data to the Council for State and Territorial's case definition of work-related pesticide poisonings, between 2001-2005, Colorado had a slightly higher rate of reported work-related pesticide poisonings (2.1/100,000 workers) in comparison to United States rates, which have remained stable at 1.8 from 2001-2005 (US data is only available through 2005). Although these data have not been analyzed by demographic variables, such as industry and occupation, it is anticipated that many of the poisonings may be occurring in high risk industries, such as agriculture, where workers can be exposed to fungicides, herbicides and insecticides.

Between 2001 and 2007, based on Colorado workers' compensation data, an average of 30,000 Colorado workers, filed a non-fatal work-related injury or illness claim annually, and approximately 54% of these claims resulted in greater than 10 days of temporary disability benefits. These claims account for over $788 million dollars paid out per year in workers' compensation claims. Since 2003, the percent of claims filed involving more than 10 days of temporary disability benefits have gradually decreased from 61.7% to 48.0%. Additionally, based on Colorado Hospital Association Data, the rate of hospitalizations with workers' compensation as the primary payor also declined after 2002, peaking at 134 per 100,000 workers in 2002 and declining to 102 per 100,000 workers in 2007. It is not clear why some injury and illness rates are declining or are lower in Colorado then the rest of the United States. The data systems available for estimating the data may systematically bias the results due to utilization of other payer sources rather than workers' compensation (Out of Pocket or patient's private insurance), underreporting of injuries and illnesses, lack of employee awareness and/or data coding errors. Employment patterns toward less hazardous occupations in Colorado may also provide a rationale for the lower rates. This is an area for further surveillance, research and consideration. Additional information is needed, including industry, occupation, age, gender, race/ethnicity and type of injury/illness, to adequately characterize each of the OHIs.

Recommendations and Future Directions

- Apply to become a NIOSH funded state-based occupational health surveillance state. By becoming a state-bases surveillance state, Colorado will enhance its ability to collect data, monitor trends and identify and respond to occupational health threats and issues in the state.
- If funding becomes available through NIOSH, Colorado should become an ABLES state to improve the adult blood lead testing and follow-up program.
- Research possible funding sources, in conjunction with the Colorado Department of Labor and Employment that would allow for Colorado's participation in the Survey of Occupational Injuries and Illnesses in future years.
- Expand the OHI data to include demographic and occupational characteristics, including age, gender, race/ethnicity, type of injury/illness, industry and occupation. Include rates for racial and ethnic minority populations in Colorado, if data are available.
- Improve and tailor surveillance datasets to capture the demographic and occupational characteristics of vulnerable and hard to reach populations to allow occupational health researchers and practitioners to better identify health disparities and work towards their elimination.
- In upcoming years, to develop a better understanding of injuries and illnesses in Colorado, continue to explore opportunities to partner with agencies that may collect additional work-related data, such as the Colorado Workers Compensation Systems and Colorado Hospital Discharge Data (pesticide poisonings, amputations, burns, musculoskeletal disorders), Colorado Department of Agriculture (pesticide poisonings), Migrant Health Clinics (pesticide poisonings, migrant worker injuries and illnesses, musculoskeletal injuries) and the Colorado Violent Death Reporting System (fatalities and workplace violence). These partnerships will assist with developing an accurate picture of occupational injuries and illnesses in Colorado to help characterize the problem and guide intervention and prevention measures.

- Work with internal and external partners to include occupation and industry coding in available local, state and national datasets.
- Extend years of analysis for this OHI report and conduct trend analyses.
- Examine key indicators in greater depth to target future state-specific surveillance and intervention in occupations and industries of greatest concern.
- Develop and implement policy and intervention plans to reduce occupational illnesses and injuries in Colorado. This includes justifying to the Colorado State Board of Health the need for occupational health injuries, illnesses and conditions to be added to the reportable conditions in Colorado.