(20.3%). The incidence of MSDs in upper back, finger, elbow, ankle and hip were 8.4%, 7.94%, 7.94%, 4.34%, 4.14%, respectively. Thirty-six variables were found significantly associated with MSDs. Eight out of 36 were identified as risk factors, including female (*OR* = 1.63), age older than 50 years (*OR* = 1.64), working on greenhouse long than 20 years (*OR* = 2.24), daily work over 10 hours (*OR* = 1.32), frequent push or pull with power ranged from 5 to 20 kg (*OR* = 1.56), elevating heavy objects in uncomfortable position (*OR* = 1.57), bending down in work (*OR* = 1.84), neck at layback for long time in work (*OR* = 1.31). While, use of vibrating tools in work was a protective factor (*OR* = 0.58).

Conclusions The incidence of MSDs is high in the farmers working on greenhouse vegetable. The findings of this study on the correlates of MSDs could inform future development of more specific and efficacious interventions.

768 MOTHERS AND FATHERS PERCEPTIONS OF INJURY RISKS TO YOUTH WORKING ON FAMILY FARMS

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Background Youth live in the agricultural workplace and are at risk of injury and death on the family farm. Fathers usually oversee the most dangerous youth farm work, namely work around large equipment. Less is known about the safety roles and beliefs of mothers. This study examined differences between mothers and fathers in their work and family roles on the family farm, as well as differences in risk-taking, safety perceptions and knowledge, and perceptions of youth injury risk.

Methods Participants were 248 farm parents (124 married couples) with a youth aged 9–19 yrs. Families lived on farms growing row crops in the Southeastern U.S. Mothers and fathers completed study questionnaires.

Results Mothers were less likely than fathers to operate tractors and large equipment, had lower safety self-efficacy, less confidence and perceptions of control related to keeping their youth safe, less safety training, and less knowledge about farm safety. As compared to fathers, mothers believed that youth should be older before being allowed to work with and operate farm equipment. Unexpectedly, mothers perceived less injury risk to youth than did fathers. Fathers were greater risk-takers than were mothers. For both mothers and fathers, higher risk-taking was associated with less perceived youth injury risk. When asked about decision-making related to youth's use of farm equipment, mothers often deferred to fathers.

Conclusions Study findings suggest that on family farms growing row crops in the Southeastern U.S., mothers perceive less injury risk to their youth than do fathers. Gendered labour patterns and limited access to agricultural networks and training constrain women's knowledge about farm safety, especially related to large equipment. These factors may compromise the ability of some women to work jointly with their husbands to keep their youth safe. There is a need for communities to provide farm safety education designed for women, as well as men.

769 INDENTIFYING DEFICIENCIES IN STABILITY, DYNAMIC HANDLING AND ROLLOVER CRASHWORTHINESS OF QUAD BIKES

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Background Currently, in Australia there are around 270,000 quad bikes (ATVs) and Side by Side Vehicles (SSVs) in use, an estimated 80,000 Quad bikes and SSVs in New Zealand, and an estimated 10 million Quad bikes and SSVs in the USA. Analysis of Australian Coronial data from 2001 to 2012 identified around 141 fatalities involving quad-bikes and SSVs. In comparison 2,718 quad-bike fatalities occurred in the US in the years 2000 to 2010. Fatality data indicates that rollover, pinned entrapment and asphyxiation are the major casual factors in farm place deaths related to quad-bikes. As a result, the authors critically evaluated quad bike static stability, dynamic handling and rollover crashworthiness to identify engineering design deficiencies and possible countermeasures to reduce rollover injury risk.

Methods A major three year project comprised of over 1000 tests on a selection of 17 vehicles consisting of 8 quad bikes, 3 recreational quad bikes, 5 SSVs and a modified prototype quad bike. Testing was carried out at the NSW state government's Crashlab testing facility, consisting of ststic stability, dynamic handling and rollover crashworthiness tests.

Results Results from all the test program are presented, with links provided to the extensive project and Crashlab test reports.

Conclusions Deficiencies in the stability and handling of quad bikes which significantly increased the rollover risk with consequent increased risk of severe injury and death in the farming environment were identified and quantified. For the first time, the comparison of quad bikes with SSVs identified the superior static stability, dynamic handling, minimal disturbance of steering when traversing a bump, and rollover crashworthiness of SSVs. Quad bikes are not the best choice for workplace and farm vehicles but rather well designed SSVs, in general, are the more appropriate 'fit for purpose' vehicle choice.

770 AN EVALUATION OF THE UTILITY OF VARIOUS DATA SOURCES FOR OCCUPATIONAL INJURY SURVEILLANCE

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Background Work-related injuries (WRIs) have been identified as a public health priority in Qatar. At present data on WRIs is collected by diverse governmental and non-governmental agencies. This study evaluates the utility of various data sources for occupational injury surveillance based on international reporting standards of the International Labour Organisation [ILO], Occupational Safety and Health Administration [OSHA] and International Classification of Diseases 10 [ICD-10].

Methods Stakeholder meetings with agencies working for the welfare and health of workers in Qatar were held to assess the existence and availability of data sources and develop consensus on the definition of essential elements related to WRIs

surveillance. These. The status of the data sources with respect to these data elements was recorded and compared to reporting standards of the ILO, OSHA and ICD10.
Results 8 data sources were included. 4 from the Hamad Medical Corporation [HMC], the national health service provider: trauma registry, ambulance service, emergency department [3 hospitals] and mortuary. Other data sources were: Qatar Red Crescent Clinics, Public Works Authority, the Ministry of Labour and Ministry of Interior. The following data elements were collected by all sources: age, sex and nationality. External causes of injury, circumstances and nature of injury were collected by 6 or more sources, occupation by 4 sources, while the documentation of work-relatedness, and injury severity score calculation was only done by 1, the HMC Trauma registry.
Conclusions Data collection for the estimation of WRIs in Qatar is not systematic and thus important aspects of injury prevention and safety promotion are overlooked. A mechanism to generate data in compliance with international standards is needed. In the interim, linking these data sources, through ongoing multi-sectoral collaboration will improve the quality of WRI data and inform occupational injury prevention efforts.

771 QUAD-RELATED FATAL INJURIES 2007–2012: A COMPARISON BETWEEN AUSTRALIA AND NEW ZEALAND

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Background Serious concerns have been raised over the safety of quad bikes in Australia and New Zealand (NZ). Previous studies have sought to describe quad fatalities within each country. Given the economic similarities between Australia and NZ, cross-country comparisons could untease geographical and policy influences to inform injury prevention initiatives in both countries. This presentation describes and compares the personal, injury and environmental factors associated with quad fatalities for the period 2007–2012 using Coronial case files for Australia and NZ.
Methods Coronial case files for the period 2007 to 2012 held by the National Coronial Information System, Australia were used to identify fatalities involving a quad for both Australia and NZ using key word and mechanism searches. Information on the decedent was extracted from coronial case files. The circumstances surrounding the fatal incident was coded using the Australian Farm Injury Optimal Dataset coding framework. Comparison of the distribution of decedent, injury characteristics and event circumstances were undertaken.
Results A total of 101 quad-related fatalities were identified: 69 in Australia and 32 in NZ. The pattern of decedent characteristics was similar between both countries. Month of incident differed with 63% of Australian fatalities occurring January-June, while 66% of NZ fatalities occurred July-December. Differences where observed for primary mechanism of injury with Australian fatalities mainly involving collisions with stationary objects while NZ fatalities mainly involved quad roll-over. The presence of a slope was more commonly observed in NZ quad-related fatalities.
Conclusions Given patterns of quad-related fatalities are similar between Australia and NZ consolidation of injury prevention initiatives, particularly around quad manufacturing standards and controls, could be undertaken to develop effective prevention interventions to address commonly held quad safety concerns.

772 GAP ANALYSIS ON PESTICIDES CONTROL AND OCCUPATIONAL HEALTH LEGISLATION IN THE UNITED ARAB EMIRATES

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Background The United Arab Emirates (UAE) is one of the leading agricultural producers in the Middle East, particularly for date fruit cultivation. Federal and local agencies are responsible for governing occupational health and safety regulations across the seven emirates. A gap analysis was performed on specific UAE legislation related to the safe use of pesticides compared to a compliance checklist developed from international best practice. Interviews with municipalities, authorities, and industry representatives were used to collect the data required in the checklist.
Description of the problem The UAE Ministry of Environment and Water reported that the average amount of pesticides used in the UAE in 2013 was five to ten times higher than in India, Europe, and the United States. Sixty-percent of UAE expatriate workers (~5.5 million) are unskilled migrants from less-developed countries with low education and literacy rates (39% educated only to primary level or less). Agricultural workers lack any job-specific training and may not understand instructions on handling chemicals or pesticides safely which places them at a high risk of occupational exposure.
Results The UAE Ministry of Labour only stipulates broad federal occupational health regulations for worker protection and residency visa screening obligations for employers. There are no specific articles related to the control of hazardous chemicals such as pesticides. At the local level, only Abu Dhabi and Dubai emirates provide guidelines related to occupational specific chemical exposures; however, there is currently limited evidence of application and enforcement.
Conclusions Currently, there is inter-emirate fragmentation in the scope and enforcement of regulations related to the use and control of chemicals such as pesticides. Future legislation should include job-specific training, implementation of effective chemical hazard control methods, and health surveillance of workers exposed to pesticides.

Client and Patient Safety

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773 INDIAN EXPERIENCE WITH PATIENT SAFETY IN PUBLIC HEALTH

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