

## MOBILE SPORTS MEDICINE SYSTEMS 25 YEAR INJURY STUDY

Mobile Sports Medicine Systems (MSMS) began its association with the Professional Rodeo Cowboys Association (PRCA) in January of 1981 by covering ten (10) sanctioned rodeos. During the 25 years ending in December of 2005 Mobile Sports Medicine Systems increased its involvement with the PRCA from 10 to 135 events and from 110 performances in 1981 to 575 performances in 2005. Medical Report Forms were completed for every contestant injury at each of the rodeos covered by MSMS over this 25 year period. These forms have been reviewed and the data compiled to create the Mobile Sports Medicine Systems 25 Year Rodeo Injury Study.

Mobile Sports Medicine Systems Rodeo Injury Report data was collected under the direction of J. Pat Evans, M.D., Medical Director and assembled by Don Andrews, Executive Director at the MSMS office in Flower Mound, Texas. The report was analyzed by Robert Vaughan, Ph.D., Exercise Physiologist in Dallas, Texas who has extensive experience in research and rodeo programs.

Mobile Sports Medicine Systems would like to express their appreciation to the Professional Rodeo Cowboys Association for their support of the most dedicated group of extreme sport athletes in the world, the rodeo cowboy, for the past 25 years.

### TABLE 1: NUMBER OF RODEOS SANCTIONED BY THE PRCA COMPARED WITH RODEOS INVOLVING MOBILE SPORTS MEDICINE SYSTEMS

There has been a steady increase in the number and percent of rodeos covered by Mobile Sports Medicine Systems since its inception in 1981. In 1981 MSMS covered 10 of 641 (.016%) rodeos and during 2005, MSMS covered 135 of 662 (20.4%). The numbers of rodeos covered steadily increased for the first 15 years of the MSMS Program, but have more than tripled in the last ten years, from 7% of all rodeos from 1981-1995 to almost 20% (19.16%) in the 1996-2005 period.

### TABLE 2: RODEO EVENTS IN WHICH ATHLETES WERE INJURED

Bull riding has been the event in which most athletes were injured every year since MSMS began covering rodeos in 1981. Since 1990, there have been only three years (1991, 1994 & 2002) in which bull riding injuries accounted for less than 50% of the total injuries for all events. Bareback riding has maintained its position as the event with the second largest number of injuries and has also maintained its percentage of athletes injured (23.26%). Saddle bronc riding has consistently been third on the injury list although the percent of injuries in relation to the total has fluctuated from 18.7% in 1981-85 to a low of 13.8% during the 1996-2000 period, to 15.6% during the current 2001-2005 period.

Figure 1 - Bull riding, bareback bronc riding and saddle bronc riding clearly dominated the events in which contestants were likely to be injured from 1981-2005.

Figure 2 - Some 87.6% of all rodeo injuries occurred in the events of bull riding, bareback bronc riding and saddle bronc riding during the period 1981-2005.

### TABLE 3: NON-CONTESTANTS INJURED IN RODEO

Bullfighters and clowns account for nearly  $\frac{3}{4}$  (70.61%) of all injuries to non-contestants in rodeo, for the 25 years records have been kept by MSMS. Labor related injuries increased from 0.83% in 1981-85 to 20.47% for the 1996-2000 reporting period to 14% during the most recent (2001-2005) period. Stock contractors, at 12.4% have moved into third place as the most injured non-contestants, replacing specialty and miscellaneous acts, possibly as the result of the increase in stand alone bull riding events with the corresponding increase in “rank” stock and exposure.

Figure 3 - Bullfighters/clowns accounted for three times as many injuries as all other non-contestants put together from 1981-2005.

### TABLE 4: TOTAL RODEO INJURIES BY ANATOMICAL LOCATION

The head and face have, in the last 10 years, replaced the spine and knee as the area of the body most likely to be injured during competition. The increase is dramatic in that the head and face accounted for between 3% and 5% of the total injuries in the 1981-1990 time frames. Injuries to the face and head jumped to 15% of all injuries in the five years between 1991 and 1995 and increased further, to over 21.21% of total injuries in the most recent (2001-2005) reporting period. The increased incidence and quantity of head and face injuries in bull riding may be due to the number of stand-alone bull riding events that did not exist prior to 2000. In addition, livestock breeding programs have produced high quality animals that result in fewer “easy draws.”

Figure 4 - The head/face, knee and shoulder dominate the anatomical sites for all rodeo injuries from 1981-2005.

### TABLE 5. MAJOR INJURIES IN RODEO

The incidence of concussion increased dramatically to 55.8% of all major injuries during the 2001-2005 rodeo seasons. As a comparison, during the first five years of the MSMS Program, although concussion was the most common major injury, it accounted for 21.1% of all major injuries. Shoulder fractures and shoulder dislocations are the second most frequent major injury at 7.34% of the total. Chest and rib injuries were the third most common major injury reported and accounted for 5.89% of all major injuries for the 25 years that Mobile Sports Medicine Systems has been covering rodeo.

Figure 5 - The head/face and upper body (shoulder/chest) were most vulnerable to major injury from 1981-2005.

### TABLE 6: ANATOMICAL LOCATION OF INJURIES BY RODEO EVENT

The knee was the most often injured anatomical site in calf roping, steer wrestling, saddle bronc riding and among bullfighters/clowns. The majority of those injuries involve running, planting the foot, or landing on the ground. During the last ten years (1996-2005) bull riders were more likely to sustain injuries to their head, or face, commonly from colliding with the head, or horns, of the bull. Thigh and groin injuries, once the most common injury in bull riding (1981-1990) have disappeared from the top-five list of injury sites, possibly as the result of improved pre-event preparation. Bareback bronc riders injured their shoulders, hands and elbows, in that order, due, in the vast majority of cases, to the tremendous stresses on the riding arm. The shoulder ranked no lower than third as an injury site in every category other than non-contestants.