



Alberta Centre for

INJURY
Control & Research

Medication, Co-morbidity and
Injury in Older Farmers

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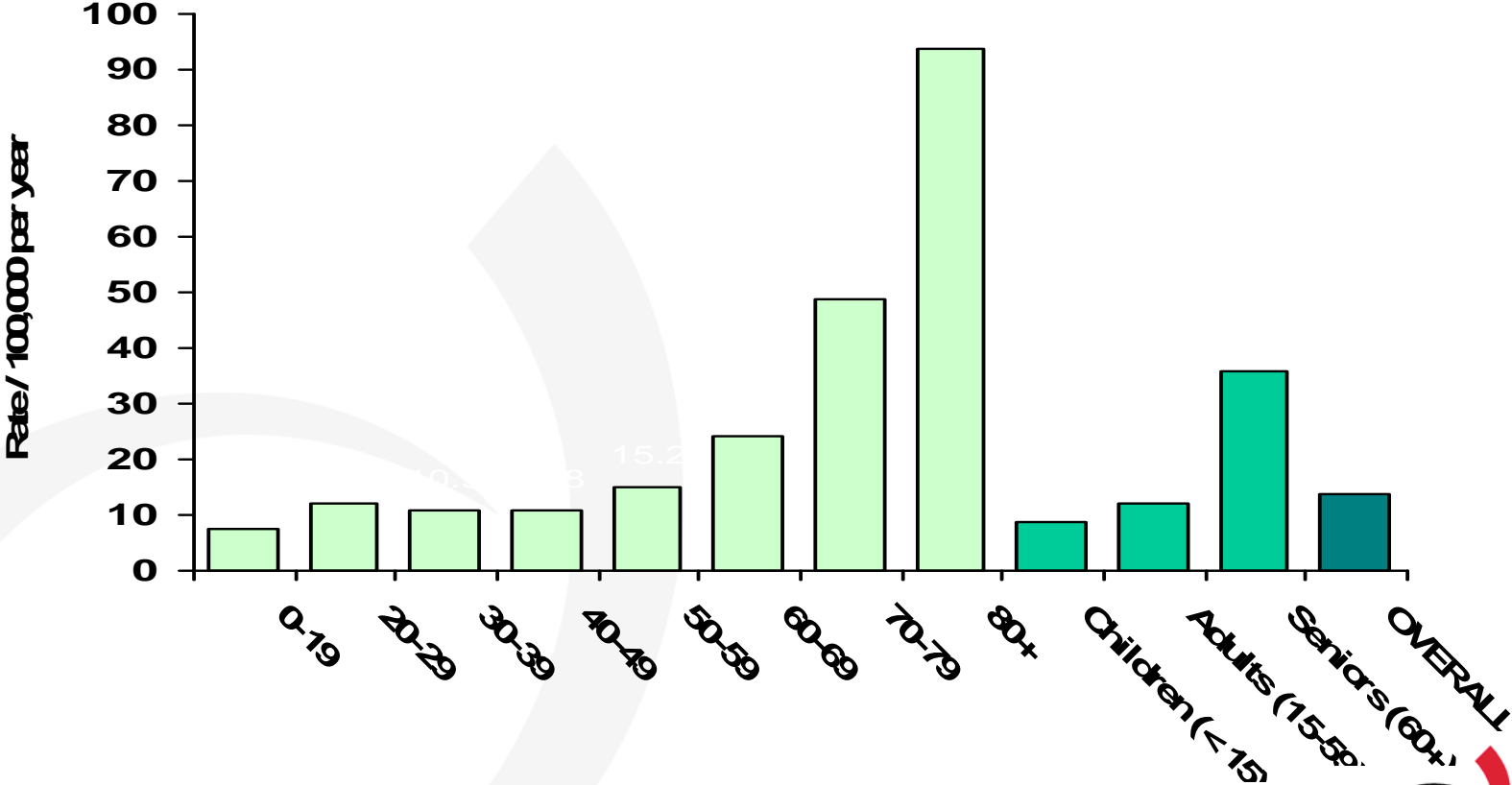
Today's Talk

- Introduction
- Co-morbidity
- Medication Use

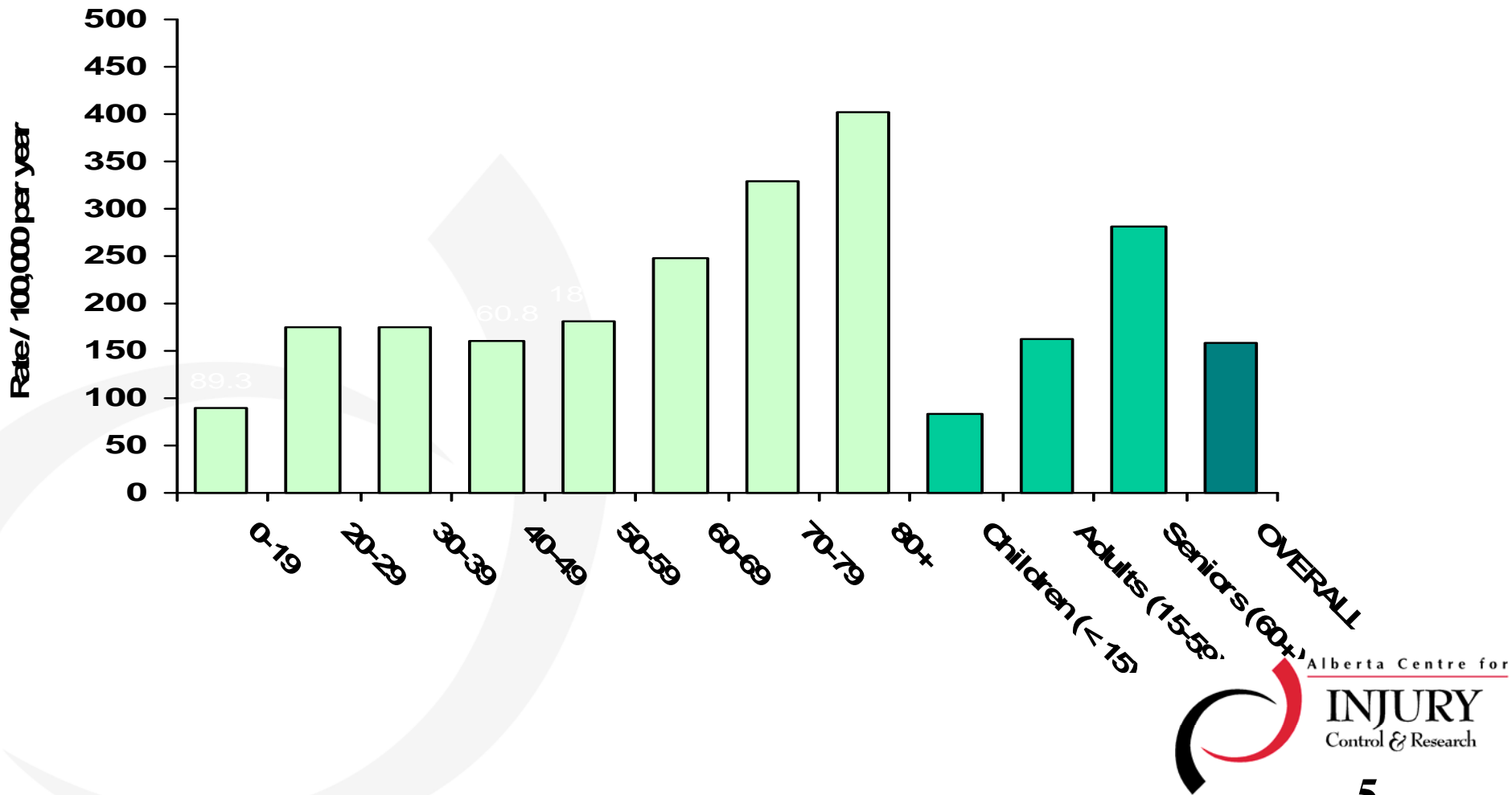
Introduction

- Agriculture is one of the most dangerous occupations in Canada
- Within the farm population, the older farmer has been identified to be at greater risk
 - Unlike other occupations, farmers continue to contribute to farm operations well beyond the “normative” retirement age

Rates of Work-Related Fatalities by Age (per 100,000 farm population)



Work Related Injury Rates by Age (per 100,000)



Why Medication Use and/or Co-morbidity Management

- Intervention points with older farmers are difficult
 - Work is self paced
 - Work is part of the farmer's identity
 - Work styles and habits may be very hard to change or influence
- Medication monitoring and management may be a plausible intervention point
- Care of significant co-morbidity may help prevent injury

Disease Factors Related Farm Injury

- Muscular-skeletal problems, back pain, previous injury
 - Inability to react to a dynamic environment
 - Guarding pain –
 - Decreased mobility
 - Balance issues
 - Insufficient strength
 - Insufficient rehabilitation and conditioning
 - Premature return to work

Disease Factors Related to Farm Injury

- Hearing deficit and tinnitus
 - Can prevent awareness of hazardous situations
 - Machinery – extraneous maintenance or blockage problems
 - Avoidance of hazards
 - Sensory awareness of environment
 - Communication of hazards between workers and bystanders

Disease Factors Related to Farm Injury

- Sleep Deprivation
 - Lack of quality sleep
 - Daytime sleepiness
 - Inattention to tasks
 - Inability to respond to the active environment
 - Frequently caused by
 - Arthritis pain, movement disorders, urinary tract disorders

Disease Factors Related to Farm Injury

- Arthritis
 - Inability to react to a dynamic environment
 - Guarding pain –
 - Decreased mobility
 - Balance issues
 - Chronic mobility problems
 - Inability to avoid animals or other hazards

Disease Factors Related to Farm Injury

- Depression
 - Inattention or dissatisfaction with farm-related job tasks
- Stress
 - High levels of cognitive activity devoted to the stressors
 - Inability to attend to tasks safely
 - Physiologic activity and elevate hormone levels
 - May lead to excessive fatigue

Disease Factors Related Farm Injury

- Other Factors
 - Asthma
 - Hypersensitivity and other allergic reactions may lead to altered reaction to mechanical stressors
 - Also related to depression/injury in other labour sectors
 - Neurotoxic exposures
 - Long term peripheral nerve damage
 - Confusion, drowsiness or poor concentration
 - Urinary tract disorders
 - Distraction
 - Lack of sleep

Medication Use and Older Persons

- Medication reaction with older persons is poorly understood
 - Pharmacokinetics
 - Process of what the body does to the drug
 - Pharmacodynamics
 - Process of what the drug does in the body
 - Polypharmacy
 - Multiple medication use
 - Prescription and over-the-counter

Pharmacokinetics

- Four Components

- Absorption

- Virtually the same for young and old

- Distribution

- Changes in body composition in older persons alter drug distribution

- Metabolism

- Slower in older persons

- Excretion

- Decreased renal blood flow leads to delayed elimination

Pharmacodynamics

- Little research has been done in this area
 - Few drug trials are conducted with older persons
 - However, there is some evidence that older persons are more sensitive to medications of the same dose when compared to younger persons
 - May be related to altered pharmacokinetics
 - Distribution, metabolism, excretion

Polypharmacy

- New or improved drug treatments are regularly added to a physicians available treatments
- Multiple diseases in older individuals predispose them to multiple treatments
 - Can be as high as 12-15 prescription and OTC medications at once
- On there own, drug side-effects are often predictable but in combination can cause unexpected:
 - Disorientation
 - Confusion
 - Altered balance abilities
 - Hypotension
 - Sedation

Medication and Injury in Farmers

- Use of any prescription medication
- Stomach medication
 - Farm stress
- Heart Medication
 - Altered blood flow/hypotension
- Anti-depressants
- Pain killers
 - Recent use related to injury
- Sleep medication/Benzodiazepines
 - Long lasting sedation
 - Lack of inhibition

THANK YOU

