

WELCOME



September 3-6, 2023

RIDING THE WAVES OF
Excellence
in SCI Care

ASCIP SCI

Board Review Course

Rita G. Hamilton, D.O., FAAPMR



Baylor Scott & White
INSTITUTE FOR REHABILITATION



Academy of
Spinal Cord Injury
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DISCLOSURE

2nd MD consultant

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How did we get here ?

Incidence

- In the US estimated to be **54 cases per million**
- Approximately **17,810 new SCI cases per year**
 - Annual with those **0-19 yoa** is **10-25 new cases per million**
 - *
- **Prevalence**
 - **Approximately 288,000 cases**

Looking at Risk factors

- Age
- Gender
- Race/Ethnicity
- Other

Age

- Average age increased from 29 yoa during the 70's to **43** in 2015
- Varies by age group
 - Lowest for peds (younger than 16 yoa) → 4.5 % (3-5%)
 - Highest for late teens and 20's
 - Increases for those older than 65 yoa → >11% of SCI cases
 - Occurs most frequently in 16-30 yoa group
- Etiology by age
 - Violent acts decrease as you age
 - Falls and medical/ surgical complications increase as you age
 - Sports are more common in younger than 15 yoa
 - MC sport injury is diving

Gender:

- +/- 78% are male
- % of female has increased from 18.2% in 1970s to 22% 2015-17
- Approximately **4:1** male to female

Race/Ethnicity

- Non-Hispanic Whites have the highest incidence of SCI
 - Followed by non-Hispanic Blacks and Hispanics
- 24% of injuries occur in non-Hispanic blacks
- Increase incidence of SCI within Hispanic population going from 6->12.8%

Other factors:

- **Alcohol:** 22% and 50% had a + blood alcohol or were using
- **Time of week :** weekends (Saturday>Sunday)except for medical/surgical (Monday/Tuesday)
- **Time of year:** warm-weather months : July(10.9%) and less in February (6.3%)

Prevalence and Demographics

- About **240,000** persons range (250,000 to 368,000)
 - **Age**
 - 45 yoa
 - **Gender**
 - Male to female prevalence is lower than incidence :
 - 2.6 vs.4.0 as women live longer
 - **Race**
 - White to nonwhite prevalence is 1.5 -similar to incidence

Education

- % of those with college or higher degree has increased from 7.0% to 24.0% over last 50 years
- From 2015 approx. 24% of individuals with SCI have college degrees at time of injury compare this with **45%** who have that survive **40** years post injury

Occupational status

- Increase in working responders post injury (2015)
 - 12-18% are employed at year 1
 - 25.8% at 5 years
 - 35% at 10 years
 - 32 +% are employed at year 40
- Slight increase with paraplegia over tetraplegia

Marital Status

- This is relative consistent
 - Single never married decreasing
 - Divorced increasing
 - Marriage rate is lower in the SCI population
 - **Postinjury** marriages survive better than **preinjury** marriages
 - Better psychosocial outcomes with marriage in the SCI population

Injury Characteristics and Trends

- **MVC** has decreased but still the leading cause
- **Falls** has increased noted in those 45 yoa and older
- **Violence** peaked in the 90s has since decreased
- **Sports** injuries have declined since the 70s
 - Diving, football and trampoline has declined
 - Skiing , winter sports and surfing have increased

Levels of injury

- Incomplete tetraplegia 47.2 %
- Incomplete paraplegia 20.4%
- Complete paraplegia 20.2%
- Complete tetraplegia 11.5%
- Level of injury varies by COI:
 - **Firearms** = complete paraplegia
 - **Diving** = complete tetraplegia
 - **Falls (from high surface)** = complete paraplegia
 - **Falls GLF / steps** = incomplete tetraplegia

Levels of Injury

- High cervical injuries have **increased**
- Low cervical have **decreased**
- Thoracic, lumbar and sacral have stayed the same

- Incomplete injuries have increased
- Decreased in complete
- 1% or less have complete recovery by DC

Associate Injuries

- About 36% have something else going on with SCI injury
- TBI
- Vertebral injury

Length of Stay

- LOS in acute care has gone from 24 days (1970s) to 11 days (2015)
- IPR declined from 98 days to 31 days

Outcomes

- 90% DC back to community
- With decreased LOS more are NOT going home

Rehospitalization

- 30% at least 1 time
- LOS about 18 days for those readmitted
- Cause
 - GU issues
 - Skin
 - Respiratory
 - Digestive
 - Circulation
 - MSK

Mortality

- 5.7% to 8.0 % die **prior to DC from the** acute hospital
- Risk
 - Age >65
 - MVC
 - High cervical level
 - Polytrauma
 - Multiple comorbidities
 - Complications (DVT and TBI)

Mortality

- Life expectancy
 - Remains below those without SCI still
 - Mortality rates greater in the first year
 - Life expectancy decreases with age, LOI completeness, and ventilator use

Cause of Death

- **Respiratory** → PNA
- Infectious Disease and parasitic
usually cases of Septicemia
- Cancer
- Heart disease

Suicide has decreased form the 70s but still 3X as high as those with out SCI (highest in the first 6 years)

Last 45 years

declining in cancer, heart disease, stroke, arterial disease, PE, urinary disease, digestive issues and suicide

increasing for metabolic and nutritional diseases, accidents, nervous system disease, MSK d/o, and mental disorders

No real change in septicemia only slight decrease in respiratory

Cost

- Average yearly expenses (including health care and living expenses)
- This will vary based on LOI
 - **\$1,149,629- 375,196** for the first year and **\$199,637-45,572** subsequent years
- Indirect cost (lost wages, benefits, and productivity)

Thank you

- Rita.Hamilton@BSWHealth.org
- Cell: 214 536 4860



References

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