

*INJURY
INJURY
DATA
COLLECTION
PROGRAM
1998-99
1998-99*

INJURY DATA COLLECTION PROGRAM

FACT SHEET

When a review of the Injury Data Collection Program (IDCP) is done, there are several factors that should be considered:

The total number of players, registered and non-registered in Ontario.

The total number of games played and therefore the exposure of each player to ice time over the entire hockey season.

Ontario Registration Figures for 1998-99

Registered Players 216,651

Non-Registered Players 213,000

429,651

The Hockey Development Centre would like to acknowledge the support of the Dr. Tom Pashby Sports Safety Fund for providing assistance in the areas of education and prevention of hockey-related injuries.

INTRODUCTION

In 1987, the Hockey Development Centre for Ontario (HDCO) and the Ministry of Tourism and Recreation committed themselves to the long-term planning and implementation of safety programs for hockey. Research of various types has been completed over the past nine years with many recommendations either implemented already or included in the HDCO's Safety Strategy. This Safety Strategy is the basic framework of planning for safety by the HDCO.

Over the past nine years it has become increasingly apparent that statistical information is essential for planning, monitoring and implementing programs for hockey in Ontario. Unless detailed injury data can be gathered, many misconceptions and opinions will enter into the decision making process. Therefore, it is the HDCO's mandate that hockey in Ontario requires an on-going, statistically sound Injury Data Collection Program (IDCP).

The HDCO Safety and Research and Trainers Committees developed an Injury Data Collection Program that has several advantages over previous studies:

The IDCP is administered on a yearly basis.

Involvement is province-wide, including all minor hockey associations.

Yearly reports are produced, which are meaningful and comprehensive for the grassroots hockey association and volunteers.

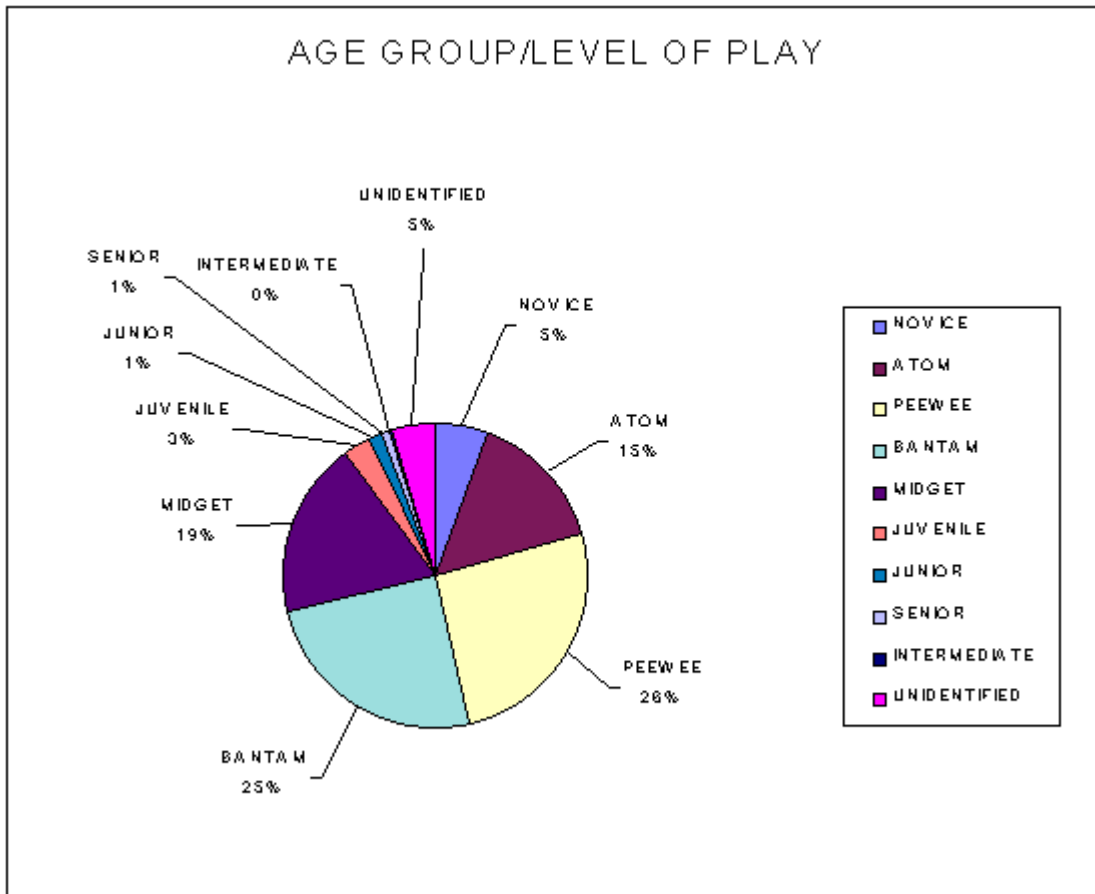
The IDCP will assist in verifying other hockey-related studies.

METHODOLOGY

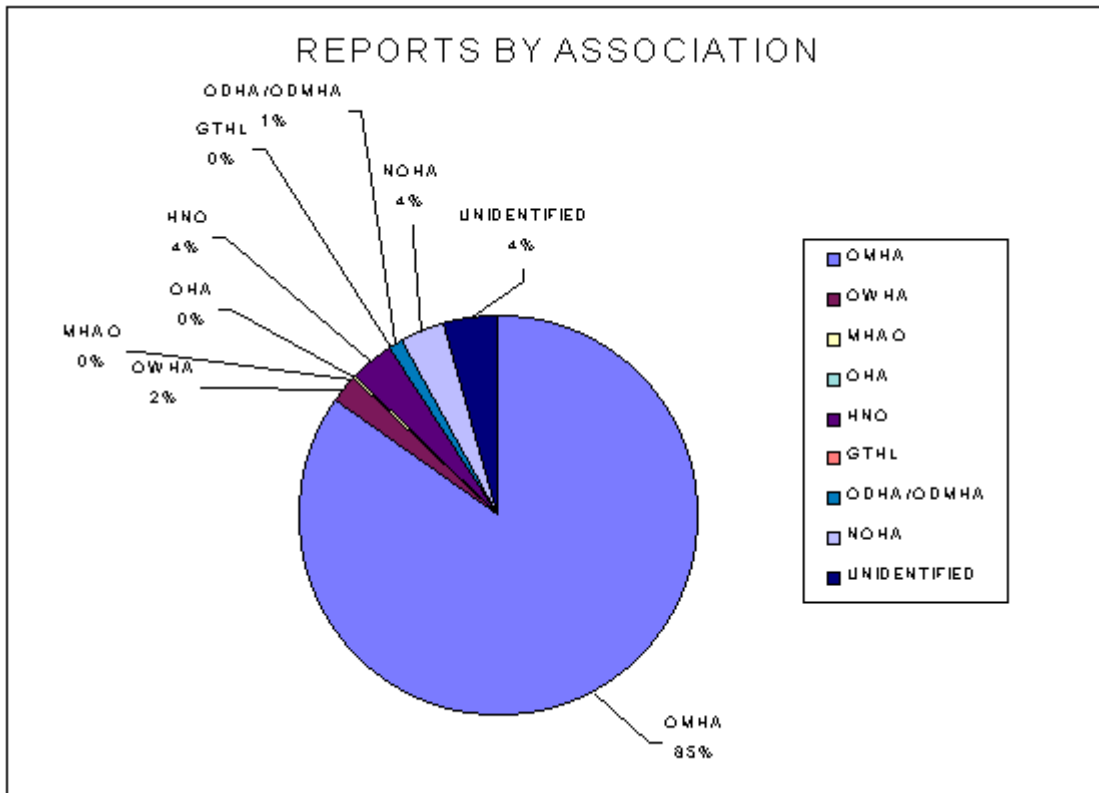
Through consultation with the HDCO Board of Directors, Safety Research Committee, Trainers Committee and the Ministry of Citizenship, Culture and Recreation, formerly the Ministry of Culture, Tourism and Recreation, a methodology was established. This methodology includes the mass distribution of injury data collection forms through the ten member association offices, development clinics specifically the Hockey Trainers Certification Program. Reporting periods are from September 1st to May 1st, with all reports being tabulated at the HDCO office.

All completed forms are date entered using a specific data entry screen developed in Microsoft Access and Excel database applications.

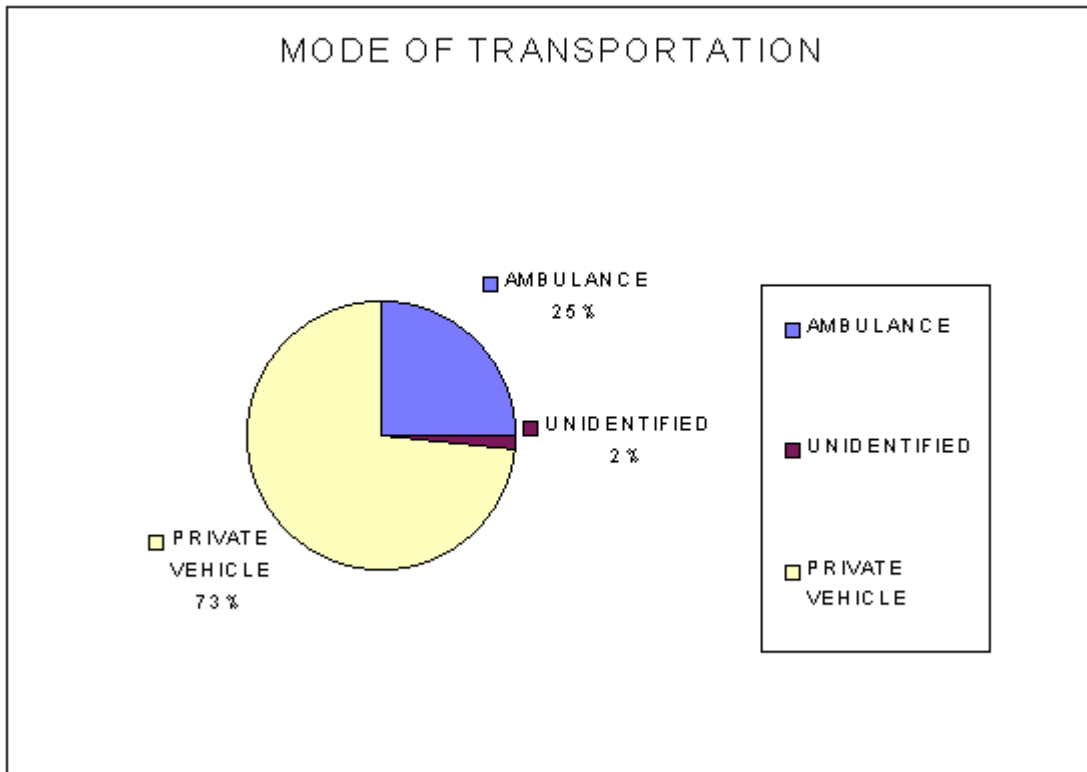
| CATEGORY | NUMBER | PERCENTAGE |
|--------------|--------|------------|
| Age Group | | |
| NOVICE | 86 | 5.43% |
| ATOM | 241 | 15.21% |
| PEEWEE | 409 | 25.80% |
| BANTAM | 390 | 24.61% |
| MIDGET | 302 | 19.05% |
| JUVENILE | 42 | 2.65% |
| JUNIOR | 22 | 1.39% |
| SENIOR | 15 | 0.95% |
| INTERMEDIATE | 2 | 0.13% |
| UNIDENTIFIED | 76 | 4.79% |
| TOTAL | 1585 | |



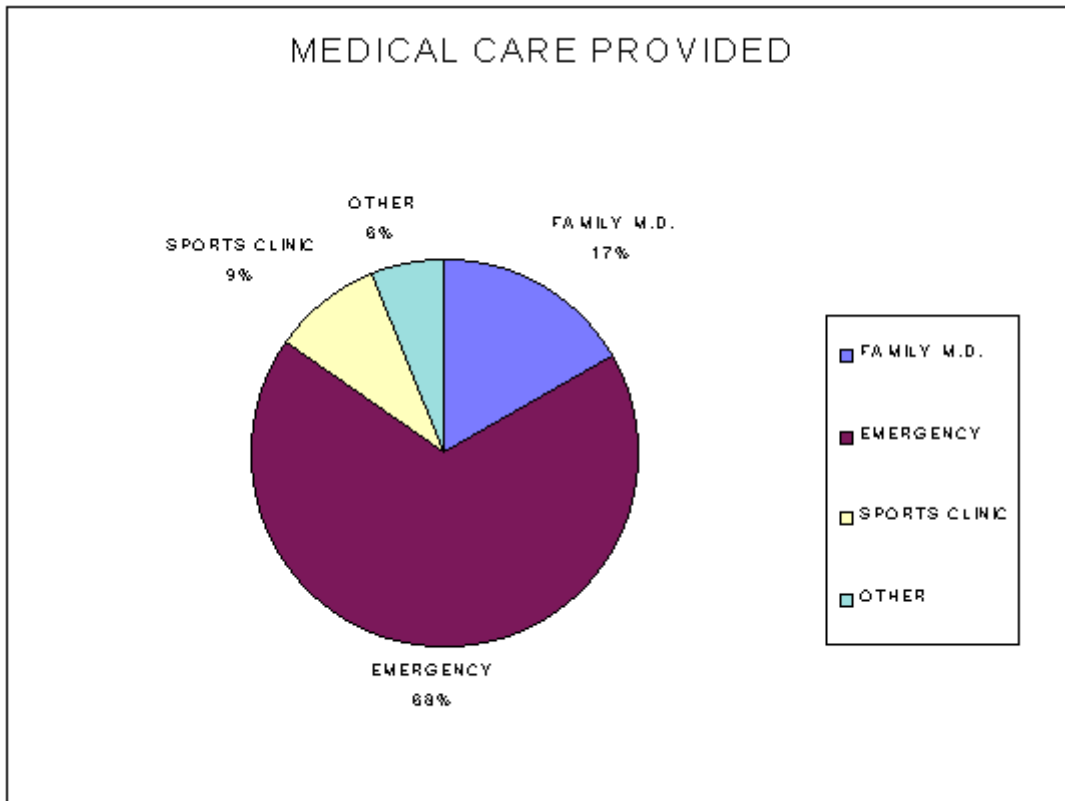
| CATEGORY | NUMBER | PERCENTAGE |
|--------------|--------|------------|
| Association | | |
| OMHA | 1275 | 84.77% |
| OWHA | 34 | 2.26% |
| MHAO | 2 | 0.13% |
| OHA | 0 | 0.00% |
| HNO | 54 | 3.59% |
| GTHL | 2 | 0.13% |
| ODHA/ODMHA | 15 | 1.00% |
| NOHA | 55 | 3.66% |
| UNIDENTIFIED | 67 | 4.45% |
| TOTAL | 1504 | |



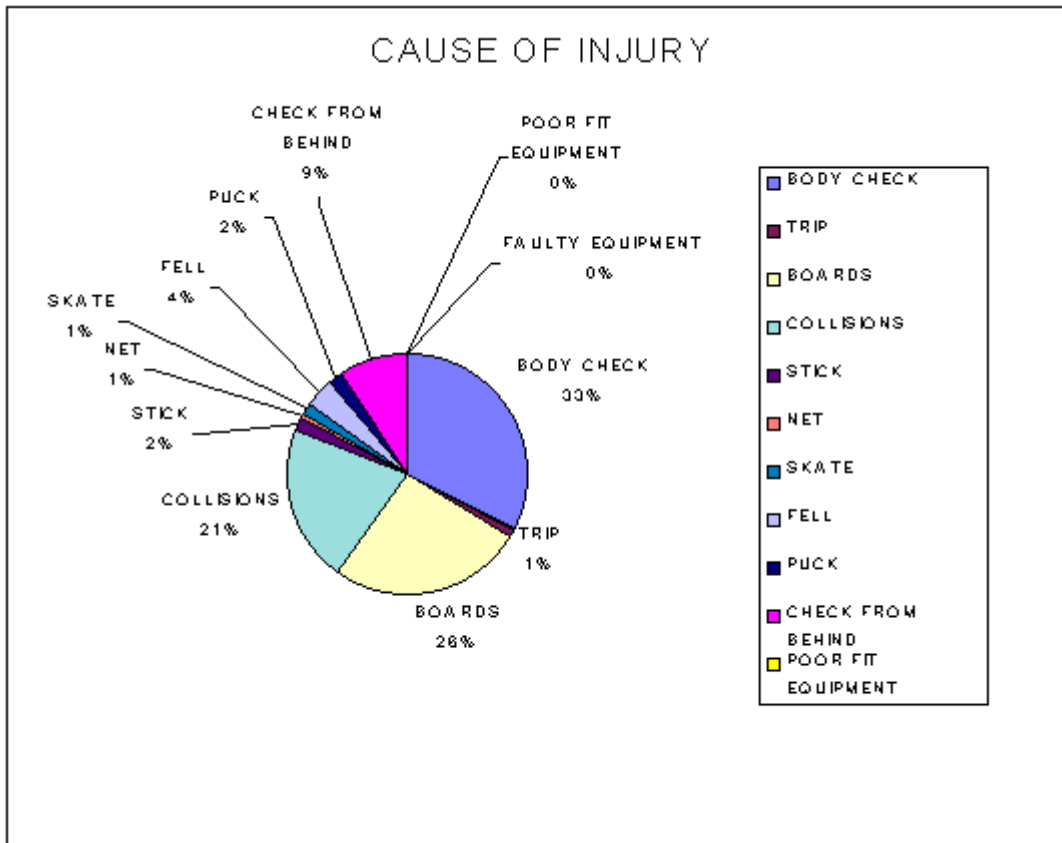
| CATEGORY | NUMBER | PERCENTAGE |
|-------------------------|--------|------------|
| TRANSPORTED TO HOSPITAL | 945 | |
| Mode of Transportation | | |
| AMBULANCE | 236 | 24.97% |
| UNIDENTIFIED | 15 | 1.59% |
| PRIVATE VEHICLE | 694 | 73.44% |
| TOTAL | 945 | |



| CATEGORY | NUMBER | PERCENTAGE |
|-----------------------|--------|------------|
| Medical Care Provided | | |
| FAMILY M.D. | 22 | 16.67% |
| EMERGENCY | 90 | 68.18% |
| SPORTS CLINIC | 12 | 9.09% |
| OTHER | 8 | 6.06% |
| TOTAL | 132 | |

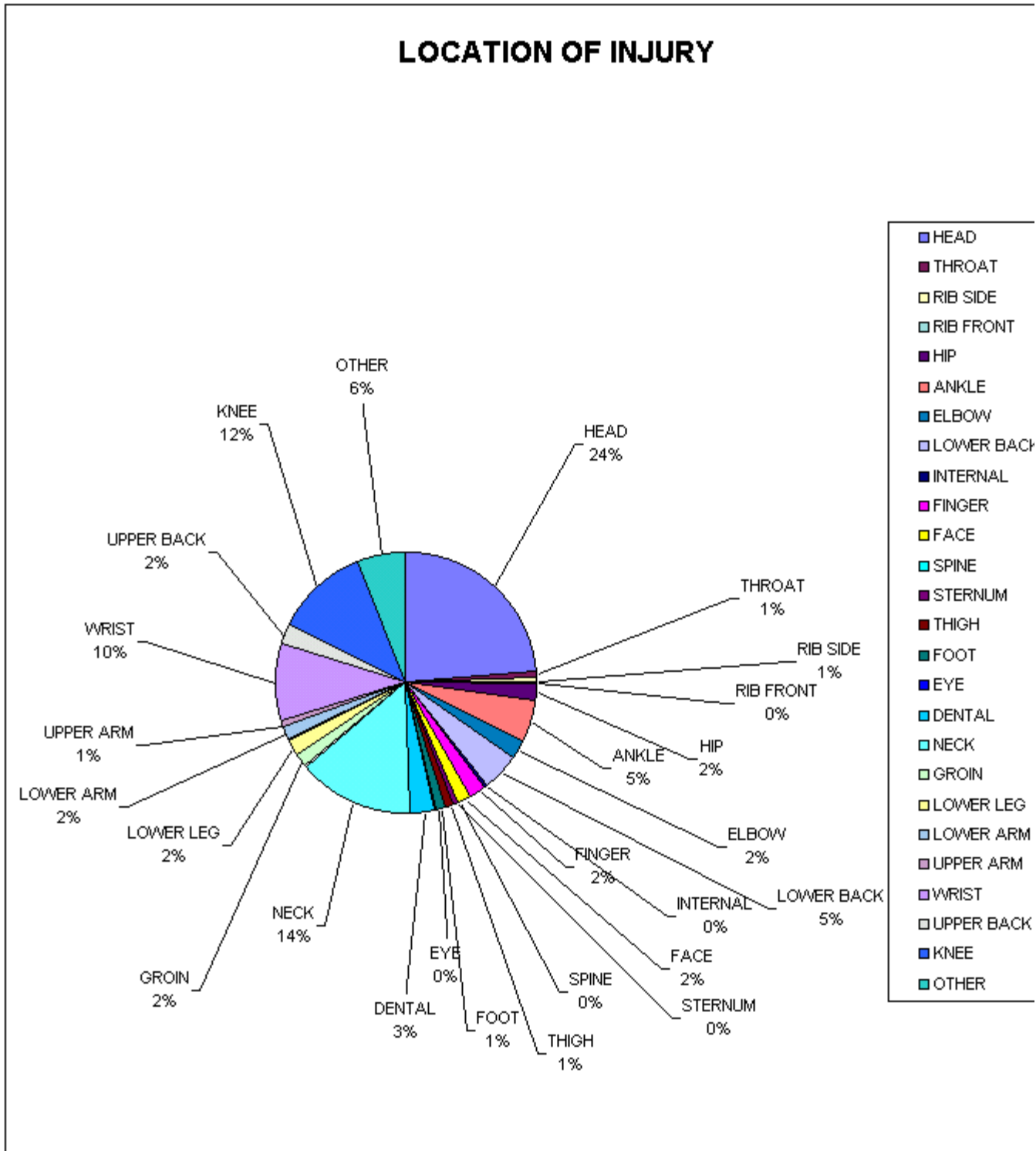


| Cause of Injury | Count | Percentage |
|--------------------|-------------|------------|
| BODY CHECK | 525 | 32.55% |
| TRIP | 18 | 1.12% |
| BOARDS | 423 | 26.22% |
| COLLISIONS | 341 | 21.14% |
| STICK | 26 | 1.61% |
| NET | 13 | 0.81% |
| SKATE | 24 | 1.49% |
| FELL | 66 | 4.09% |
| PUCK | 27 | 1.67% |
| CHECK FROM BEHIND | 148 | 9.18% |
| POOR FIT EQUIPMENT | 1 | 0.06% |
| FAULTY EQUIPMENT | 1 | 0.06% |
| TOTAL | 1613 | |



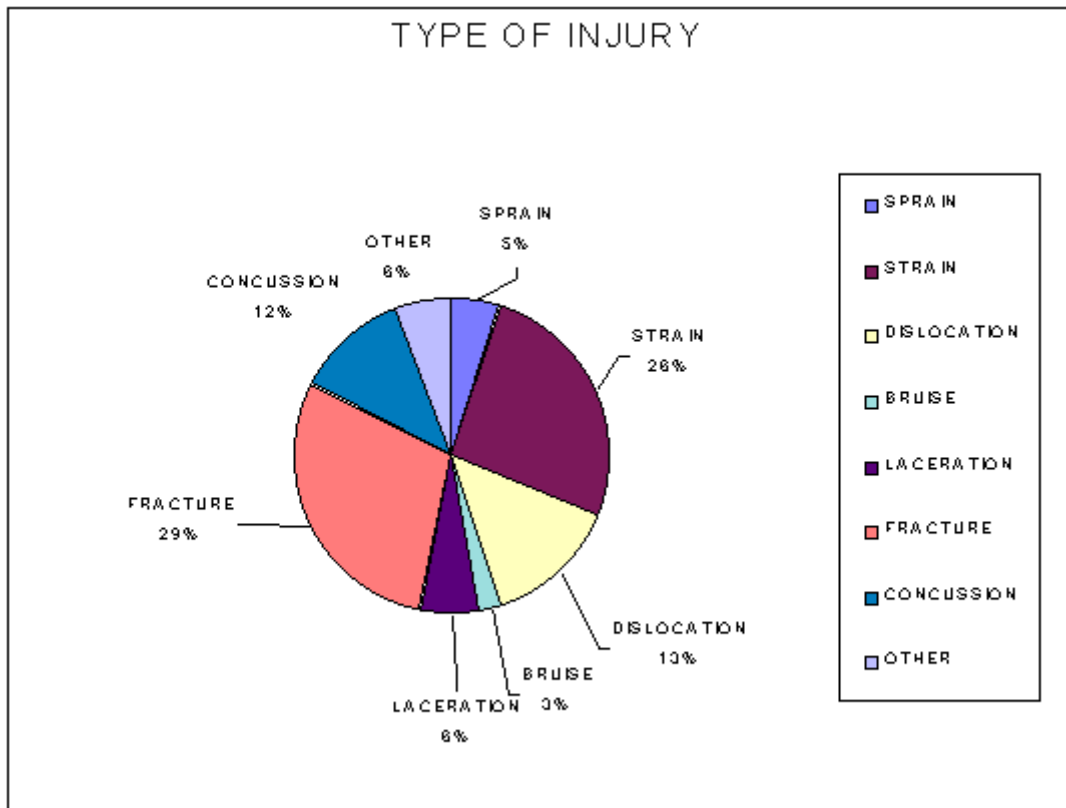
| CATEGORY | NUMBER | PERCENTAGE |
|--------------------|--------|------------|
| Location of Injury | | |
| HEAD | 236 | 23.60% |
| THROAT | 9 | 0.90% |
| RIB SIDE | 5 | 0.50% |
| RIB FRONT | 4 | 0.40% |
| HIP | 19 | 1.90% |
| ANKLE | 53 | 5.30% |
| ELBOW | 21 | 2.10% |
| LOWER BACK | 48 | 4.80% |
| INTERNAL | 2 | 0.20% |
| FINGER | 21 | 2.10% |
| FACE | 15 | 1.50% |
| SPINE | 4 | 0.40% |
| STERNUM | 2 | 0.20% |

| | | |
|------------|------|--------|
| THIGH | 12 | 1.20% |
| FOOT | 11 | 1.10% |
| EYE | 3 | 0.30% |
| DENTAL | 30 | 3.00% |
| NECK | 143 | 14.30% |
| GROIN | 17 | 1.70% |
| LOWER LEG | 23 | 2.30% |
| LOWER ARM | 16 | 1.60% |
| UPPER ARM | 8 | 0.80% |
| WRIST | 96 | 9.60% |
| UPPER BACK | 23 | 2.30% |
| KNEE | 117 | 11.70% |
| OTHER | 62 | 6.20% |
| TOTAL | 1000 | |



| CATEGORY | NUMBER | PERCENTAGE |
|----------------|--------|------------|
| Type of Injury | | |
| SPRAIN | 60 | 5.00% |
| STRAIN | 316 | 26.33% |

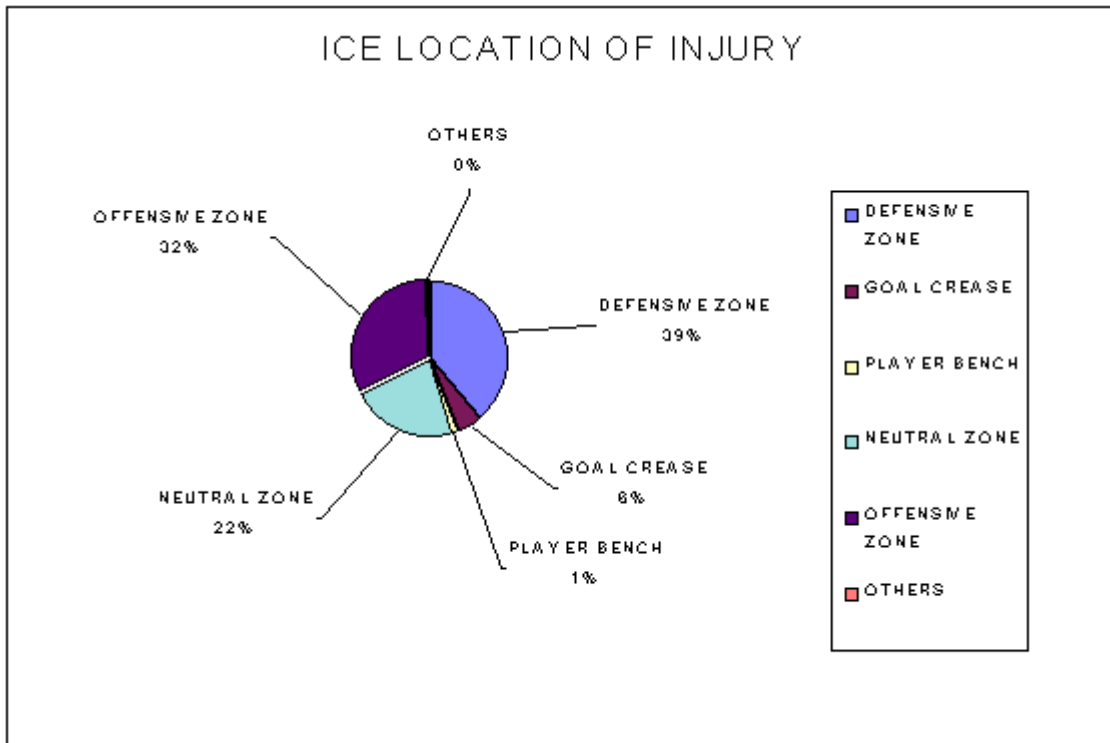
| | | |
|-------------|------|--------|
| DISLOCATION | 160 | 13.33% |
| BRUISE | 32 | 2.67% |
| LACERATION | 70 | 5.83% |
| FRACTURE | 351 | 29.25% |
| CONCUSSION | 142 | 11.83% |
| OTHER | 69 | 5.75% |
| TOTAL | 1200 | |



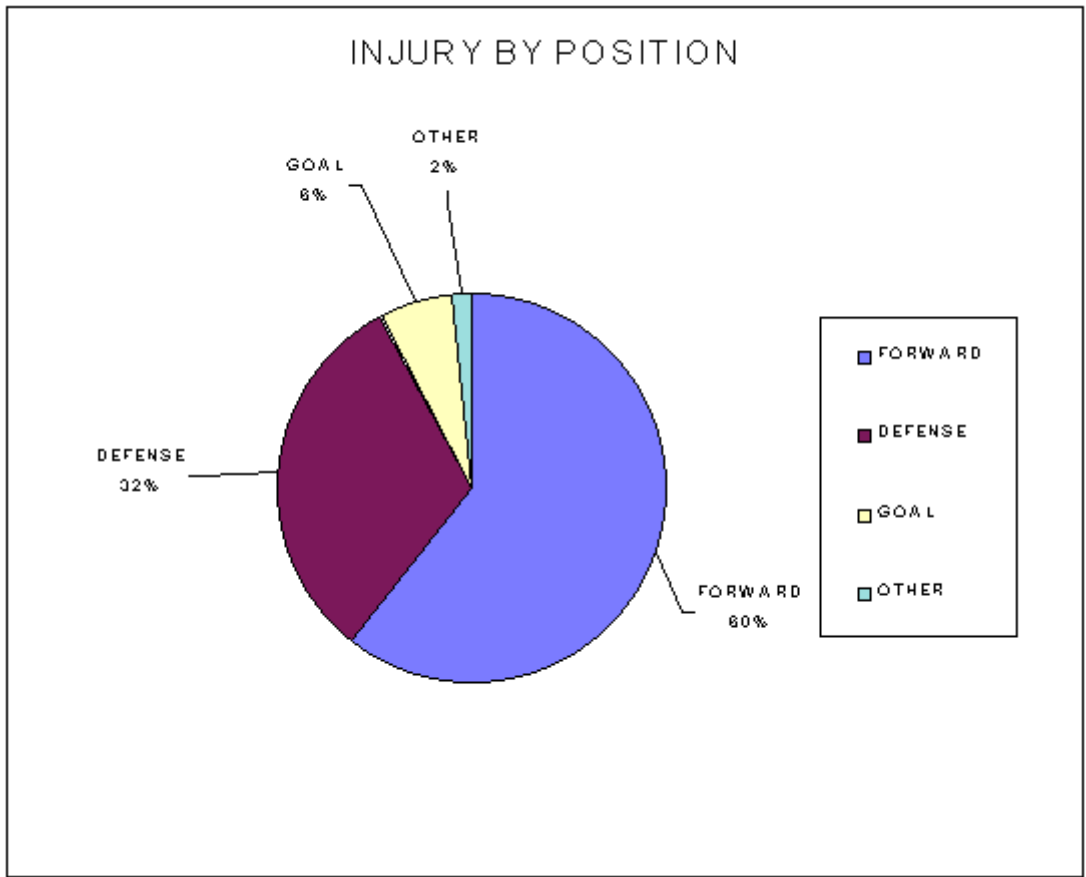
| CATEGORY | NUMBER | PERCENTAGE |
|----------|--------|------------|
|----------|--------|------------|

Ice Location of Injury

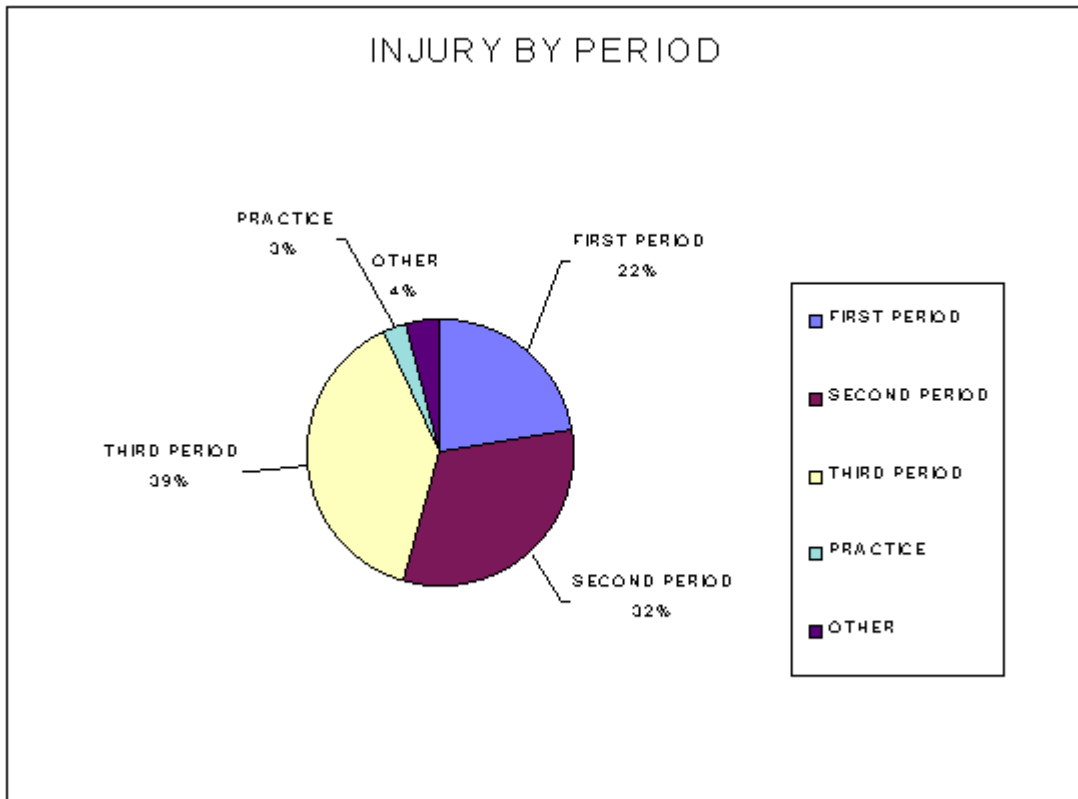
| | | |
|----------------|------|--------|
| DEFENSIVE ZONE | 555 | 38.76% |
| GOAL CREASE | 79 | 5.52% |
| PLAYER BENCH | 16 | 1.12% |
| NEUTRAL ZONE | 320 | 22.35% |
| OFFENSIVE ZONE | 455 | 31.77% |
| OTHERS | 7 | 0.49% |
| TOTAL | 1432 | |



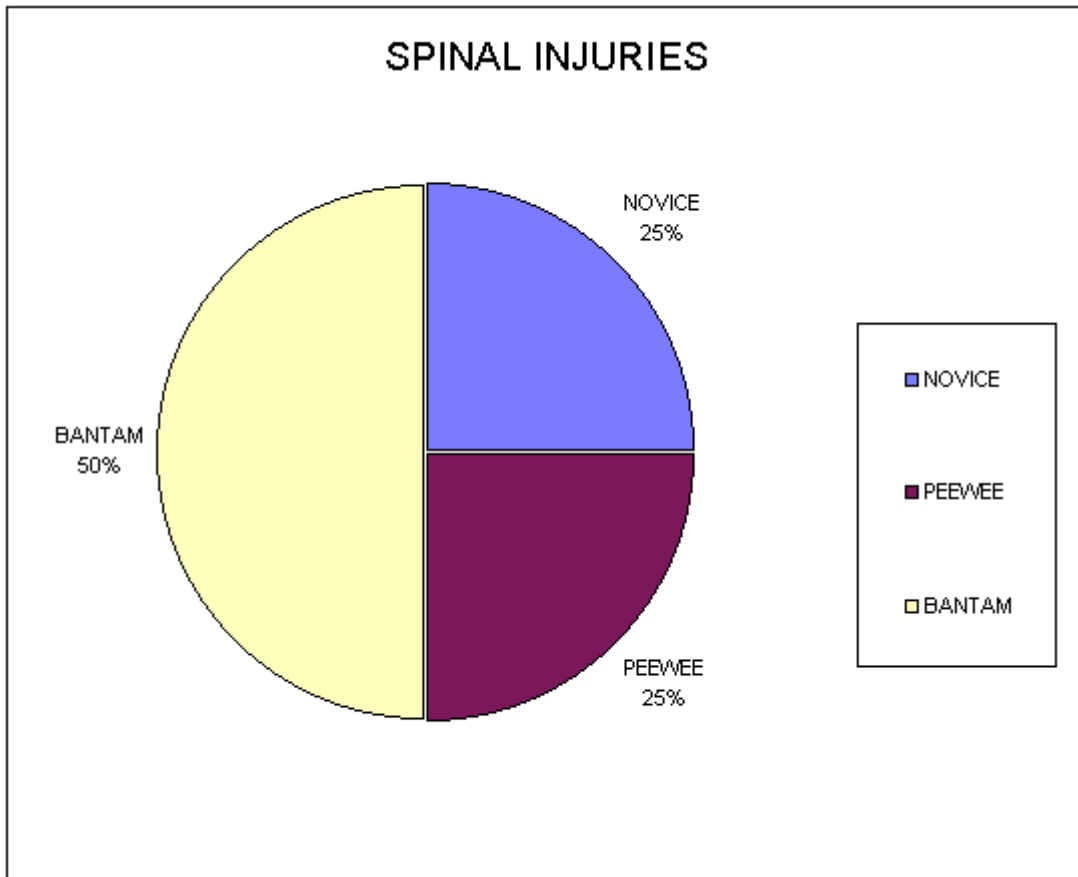
| CATEGORY | NUMBER | PERCENTAGE |
|--------------------|--------|------------|
| Injury by Position | | |
| FORWARD | 758 | 60.54% |
| DEFENSE | 395 | 31.55% |
| GOAL | 77 | 6.15% |
| OTHER | 22 | 1.76% |
| TOTAL | 1252 | |



| CATEGORY | NUMBER | PERCENTAGE |
|------------------|--------|------------|
| Injury by Period | | |
| FIRST PERIOD | 301 | 22.28% |
| SECOND PERIOD | 436 | 32.27% |
| THIRD PERIOD | 521 | 38.56% |
| PRACTICE | 38 | 2.81% |
| OTHER | 55 | 4.07% |
| TOTAL | 1351 | |



| CATEGORY | NUMBER | AGE GROUP % |
|------------------------|--------|-------------|
| Spinal Injuries | | |
| NOVICE | 1 | 25.00% |
| PEEWEE | 1 | 25.00% |
| BANTAM | 2 | 50.00% |
| TOTAL | 4 | |



| SPINAL PROFILE | 1998-99 | 1997-98 | (+/-) |
|----------------|---------|---------|--------|
| | | 4 | 5 -20% |

4 Total Injuries Reported

| AGE GROUP | NUMBER | |
|-----------|--------|--------|
| Novice | 1 | 25.00% |
| Pee Wee | 1 | 25.00% |
| Bantam | 2 | 50.00% |
| TOTAL | 4 | |

| POSITION PLAYED | NUMBER | |
|-----------------|--------|--------|
| Forward | 3 | 75.00% |
| Defence | 1 | 25.00% |
| TOTAL | 4 | |

| PERIOD | NUMBER | |
|--------------|--------|--------|
| 2nd | 1 | 25.00% |
| 3rd | 2 | 50.00% |
| Unidentified | 1 | 25.00% |
| TOTAL | 4 | |

OTHER RELATED INJURIES

| | | |
|--------------|---|--------|
| Shoulder | 1 | 25.00% |
| Unidentified | 3 | 75.00% |
| TOTAL | 4 | |

TYPE OF INJURY

| | | | |
|----------|---|--------|--------------------------------|
| Fracture | 1 | 25.00% | *no other information provided |
| Bruise | 1 | 25.00% | |
| Strain | 1 | 25.00% | |
| Other | 1 | 25.00% | *tingling arm & leg |
| TOTAL | 4 | | |

SYMPTOMS

| | | |
|--------------|---|--------|
| Pain | 2 | 50.00% |
| Unidentified | 2 | 50.00% |
| TOTAL | 4 | |

MECHANISM/CAUSE OF INJURY

| | | |
|-------------------|---|--------|
| Body Check | 2 | 50.00% |
| Check from Behind | 1 | 25.00% |
| Collision | 1 | 25.00% |
| TOTAL | 4 | |

POSITION ON ICE

| | | |
|----------------|---|--------|
| Offensive Zone | 2 | 50.00% |
| Neutral Zone | 2 | 50.00% |
| TOTAL | 4 | |

SPINAL PROFILE

TRANSPORTED TO HOSPITAL 3

MODE OF TRANSPORTATION

| | | |
|-----------------|---|--------|
| Ambulance | 2 | 50.00% |
| Private Vehicle | 1 | 33.33% |
| TOTAL | 3 | |

REQUIRED MEDICAL ATTENTION

| | | | |
|-----------|---|--------|---------------|
| Emergency | 2 | 66.67% | |
| Other | 1 | 33.33% | *Chiropractor |
| TOTAL | 3 | | |

TIME LOST DUE TO INJURY

2 specified - 34 weeks

Previous Injury: Not specified

REVIEW

Decrease of 1 (20%) occurrence over 1997-98 total of 5
Forwards received 75% of this type of injury

50% of injuries occurred in the 3rd period (1 unidentified)

42.86% of injuries caused by checking from behind

| DENTAL PROFILE | 1998-99 | 1997-98 | (+/-) |
|-----------------------------------|---------|---------|-------|
| 30 Total Injuries Reported | 30 | 63 | -52% |

| <u>AGE GROUP</u> | NUMBER | AGE % |
|------------------|--------|--------|
| Atom | 4 | 13.33% |
| PeeWee | 1 | 3.33% |
| Bantam | 7 | 23.33% |
| Midget | 12 | 40.00% |
| Juvenile | 3 | 10.00% |
| Junior | 2 | 6.67% |
| Senior | 1 | 3.33% |
| TOTAL | 30 | |

POSITION PLAYED

| | | | |
|--------------|----|--------|------------------|
| Forward | 15 | 50.00% | |
| Defense | 6 | 20.00% | |
| Goaltender | 2 | 6.67% | |
| Other | 1 | 3.33% | *on-ice official |
| Unidentified | 6 | 20.00% | |
| TOTAL | 30 | | |

PERIOD

| | | |
|-------|----|--------|
| 1st | 7 | 11.11% |
| 2nd | 23 | 36.51% |
| 3rd | 18 | 28.57% |
| Other | 15 | 23.81% |
| TOTAL | 63 | |

OTHER RELATED INJURIES

| | | |
|----------------|---|--------|
| Head/Face Area | 8 | 88.89% |
| Neck | 1 | 11.11% |
| TOTAL | 9 | |

ACTIVITY

| | | |
|-------------------------------|----|--------|
| Game | 15 | 50.00% |
| Practice | 3 | 10.00% |
| Tournament/Exhibition/Playoff | 12 | 40.00% |
| TOTAL | 30 | |

TYPE OF INJURY

| | | |
|------------|---|-------|
| Strain | 1 | 3.33% |
| Fracture | 1 | |
| Laceration | 4 | |

| | | | |
|-------|----|--------|----------------------------------|
| Other | 24 | 80.00% | *chipped, lost, broken, multiple |
| TOTAL | 30 | | |

DENTAL PROFILEMECHANISM/CAUSE OF INJURY

| | | |
|-------------------|----|--------|
| Body Check | 7 | 23.33% |
| Boards | 6 | 20.00% |
| Collision | 6 | 20.00% |
| Stick | 5 | 16.67% |
| Skate | 1 | 3.33% |
| Net | 2 | 6.67% |
| Puck | 1 | 3.33% |
| Check from Behind | 2 | 6.67% |
| TOTAL | 30 | |

POSITION ON ICE

| | |
|----------------|----|
| Defensive Zone | 19 |
| Offensive Zone | 4 |
| Neutral Zone | 3 |
| Goal Crease | 3 |
| TOTAL | 29 |

| | |
|--------------------------------|---|
| <u>TRANSPORTED TO HOSPITAL</u> | 9 |
|--------------------------------|---|

MODE OF TRANSPORTATION

| | |
|-----------------|---|
| Private Vehicle | 7 |
| Ambulance | 2 |

Previous Injury: 1 specified

Penalty Called: 1 specified

REVIEW

Decrease of 52% over 1997-98 total of 63
Midget and Bantam combined for 63.33% of total
Forwards received 15 or 50% of injuries
Body Check was cited in 23.33% cases
3% of all injuries reported

| | | | |
|---------------------|----------------|----------------|--------------|
| NECK PROFILE | 1998-99 | 1997-98 | (+/-) |
| | 143 | 96 | 49% |

143 Injuries Reported

| | | |
|------------------|--------|-------|
| <u>AGE GROUP</u> | NUMBER | AGE % |
|------------------|--------|-------|

| | | |
|--------------|-----|--------|
| Novice | 15 | 10.49% |
| Atom | 39 | 27.27% |
| PeeWee | 40 | 27.97% |
| Bantam | 21 | 14.69% |
| Midget | 19 | 13.29% |
| Junior | 2 | 1.40% |
| Senior | 1 | 0.70% |
| Unidentified | 6 | 4.20% |
| TOTAL | 143 | |

POSITION PLAYED

| | | | |
|--------------|-----|--------|--------------|
| Forward | 90 | 62.94% | |
| Defense | 30 | 20.98% | |
| Goaltender | 10 | 6.99% | |
| Other | 1 | 0.70% | * team staff |
| Unidentified | 12 | 8.39% | |
| TOTAL | 143 | | |

PERIOD

| | | | |
|--------------|-----|--------|-----------|
| 1st | 16 | 11.19% | |
| 2nd | 30 | 20.98% | |
| 3rd | 68 | 47.55% | |
| Practice | 7 | 4.90% | |
| Other | 1 | 0.70% | *Overtime |
| Unidentified | 21 | 14.69% | |
| TOTAL | 143 | | |

OTHER RELATED INJURIES

| | | |
|--------|----|--------|
| Head | 45 | 93.75% |
| Throat | 2 | 4.17% |
| Ear | 1 | 2.08% |
| TOTAL | 48 | |

TYPE OF INJURY

| | | | |
|-------------|----|--------|--|
| Strain | 15 | 28.30% | |
| Fracture | 1 | 1.89% | |
| Sprain | 19 | 35.85% | |
| Dislocation | 1 | 20.00% | |
| Bruise | 10 | 18.87% | |
| Laceration | 2 | 3.77% | |
| Others | 5 | 9.43% | *concussion, muscle spasms, severe bruising,whiplash, soft tissue damage |
| TOTAL | 53 | | |

NECK PROFILESYMPTOMS

| | | | |
|---------------------|----|--------|-------------------------------|
| Pain | 18 | 64.29% | |
| Loss of Feeling | 5 | 17.86% | |
| Shortness of Breath | 2 | 7.14% | *dizziness, lightheadedness, |
| Others | 3 | 10.71% | headache, tingling, stiffness |
| TOTAL | 28 | | |

MECHANISM/CAUSE OF INJURY

| | | |
|-------------------|-----|--------|
| Body Check | 34 | 20.36% |
| Trip | 1 | 0.60% |
| Boards | 44 | 26.35% |
| Collision | 37 | 22.16% |
| Stick | 3 | 1.80% |
| Net | 2 | 1.20% |
| Fell | 4 | 2.40% |
| Check from Behind | 42 | 25.15% |
| Other | 3 | 1.80% |
| TOTAL | 167 | |

POSITION ON ICE

| | | |
|----------------|-----|--------|
| Defensive Zone | 42 | 31.82% |
| Offensive Zone | 50 | 37.88% |
| Neutral Zone | 26 | 19.70% |
| Goal Crease | 11 | 8.33% |
| Other | 3 | 2.27% |
| TOTAL | 132 | |

TRANSPORTED TO HOSPITAL 92

MODE OF TRANSPORTATION

| | | |
|-----------------|----|--------|
| Ambulance | 13 | 86.67% |
| Private Vehicle | 2 | 13.33% |
| TOTAL | 15 | |

REQUIRE MEDICAL ATTENTION

| | | |
|------------------|----|--------|
| Family Physician | 13 | 86.67% |
| Emergency Clinic | 2 | 13.33% |
| TOTAL | 15 | |

Previous Injury: 2 specified

Penalty Called: 33 specified

NECK PROFILEREVIEW

No quadreplegic or paraplegic injuries

Forwards received 62.94% of this type of injury

The offensive zone was the site of 37.88% of injuries
68 or 47.55% occurred in the 3rd period

Atom, PeeWee and Bantam age group combined for 65.73% of injuries
 Head injuries represented 93.75 % of related injuries
 Collisions, Board and Checking From Behind highest mechanism of injury - 71.86%
 64.33% of injuries transported to hospital

| HEAD PROFILE | 1998-99 | 1997-98 | (+/_) |
|------------------------------|---------|---------|-------|
| 236 Injuries Reported | 236 | 141 | 67% |

| <u>AGE GROUP</u> | NUMBER | AGE % |
|------------------|--------|--------|
| Novice | 16 | 6.78% |
| Atom | 49 | 20.76% |
| PeeWee | 59 | 25.00% |
| Bantam | 55 | 23.31% |
| Midget | 40 | 16.95% |
| Juvenile | 3 | 1.27% |
| Junior | 5 | 2.12% |
| Unidentified | 9 | 3.81% |
| TOTAL | 236 | |

POSITION PLAYED

| | | | |
|--------------|-----|--------|-------------------------|
| Forward | 132 | 55.93% | |
| Defense | 72 | 30.51% | |
| Goaltender | 12 | 5.08% | |
| Other | 3 | 1.27% | * team staff, spectator |
| Unidentified | 17 | 7.20% | |
| TOTAL | 236 | | |

PERIOD

| | | |
|--------------|-----|--------|
| 1st | 36 | 15.25% |
| 2nd | 69 | 29.24% |
| 3rd | 84 | 35.59% |
| Unidentified | 47 | 19.92% |
| TOTAL | 236 | |

OTHER RELATED INJURIES

| | | |
|-----------|----|--------|
| Neck | 45 | 75.00% |
| Dental | 1 | 1.67% |
| Lowerback | 3 | 5.00% |
| Other | 11 | 18.33% |
| TOTAL | 60 | |

TYPE OF INJURY

| | | | |
|------------|----|--------|-------------------------------|
| Strain | 1 | 2.08% | |
| Fracture | 1 | 2.08% | |
| Sprain | 7 | 14.58% | |
| Bruise | 6 | 12.50% | |
| Laceration | 8 | 16.67% | |
| Other | 25 | 52.08% | *concussion, whiplash, headac |

| | | |
|-------|----|-------------------------------|
| TOTAL | 48 | nausea, loss of consciousness |
|-------|----|-------------------------------|

HEAD PROFILESYMPTOMS

| | | | |
|---------------------|----|--------|---------------------------------|
| Pain | 11 | 52.38% | |
| Light Bleeding | 1 | 4.76% | |
| Loss of Feeling | 1 | 4.76% | |
| Shortness of Breath | 3 | 14.29% | |
| Other | 5 | 23.81% | *disoriented, tingling sensatio |
| TOTAL | 21 | | headache, blurred vision, dizzi |

MECHANISM/CAUSE OF INJURY

| | | |
|-------------------|-----|--------|
| Body Check | 76 | 28.57% |
| Boards | 71 | 26.69% |
| Collision | 55 | 20.68% |
| Stick | 3 | 1.13% |
| Net | 2 | 0.75% |
| Fell on Ice | 8 | 3.01% |
| Puck | 2 | 0.75% |
| Check from Behind | 44 | 16.54% |
| Other | 5 | 1.88% |
| TOTAL | 266 | |

POSITION ON ICE

| | | |
|----------------|-----|--------|
| Defensive Zone | 78 | 40.41% |
| Offensive Zone | 73 | 37.82% |
| Neutral Zone | 24 | 12.44% |
| Goal Crease | 12 | 6.22% |
| Players Bench | 5 | 2.59% |
| Other | 1 | 0.52% |
| TOTAL | 193 | |

| | | |
|--------------------------------|-----|--------|
| <u>TRANSPORTED TO HOSPITAL</u> | 136 | 70.47% |
|--------------------------------|-----|--------|

MODE OF TRANSPORTATION

| | | |
|-----------------|-----|--------|
| Ambulance | 46 | 33.82% |
| Private Vehicle | 90 | 66.18% |
| TOTAL | 136 | |

REQUIRED MEDICAL ATTENTION

| | | |
|------------------|----|--------|
| Family Physician | 5 | 29.41% |
| Emergency Clinic | 12 | 70.59% |
| TOTAL | 17 | |

TIME LOST DUE TO INJURY

3000 days

Previous Injury: 2 specified
 Penalty Called: 53 specified

HEAD PROFILE

REVIEW

Increase of 67% in injuries reported over 97-98 total of 141
 PeeWee, Bantam and Midget age players represented 65.95% of injuries
 Forwards were most injured 55.93%
 Concussions were reported as the most frequent other type of injury (25 reported)
 Average of 12.71 days lost per injury

TIME LOST DUE TO INJURY

Total Days 51,435

32.45 days per report (1585)

AGE GROUP

| | | |
|--------------|--------------|--------|
| Novice | 1860 | 3.62% |
| Atom | 7555 | 14.69% |
| PeeWee | 14671 | 28.52% |
| Bantam | 12900 | 25.08% |
| Midget | 7221 | 14.04% |
| Juvenile | 1403 | 2.73% |
| Intermediate | 317 | 0.62% |
| Junior | 62 | 0.12% |
| Senior | 3478 | 6.76% |
| Unidentified | 1968 | 3.83% |
| TOTAL | 51435 | |

