

The Value of the Athletic Trainer: the Dollars, the Lives, the Difference

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**“What is the most critical thing
that we need to keep youth
athletes safe?”**

A photograph of a football game in progress. Several players in green jerseys and white helmets are clustered together on a grass field. The scene is captured from a low angle, showing the intensity of the play. A semi-transparent white box is overlaid on the center of the image, containing text.

For Safer Sports

ATHLETIC TRAINERS

#AT4ALL #STRIVE2PROTECT

Progressing The Value of The AT Timeline

Value of ATs: Presence of the AT

What medical coverage is present at the time of sudden death?

Presence of AT Results

ATs not present during 62% of deaths in the secondary school setting

Value of ATs: Insurance Perspective

Do ATs help reduce excess liability and medical costs?



NATA Financial Support

Buy in from NATA to support insurance project

NFL Hosts Optimization of Services Meeting

Additional companies provide data to KSI



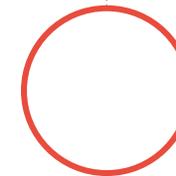
KSI & NFL Meet

KSI and NFL meet. Question is asked “How do we as a nation improve health and safety in sport and get Athletic Trainers into schools?”



Insurance Data Obtained

Companies provide KSI with claims and injury data



Preliminary Insurance Results

School districts with Full time ATs have 4x less claims and 2.5x less \$

The Lives

Is there any data that we can obtain that would help to show that Athletic Trainers in High Schools save lives?

Presence of Athletic Trainers, Emergency Action Plans, and Emergency Training at the Time of Sudden Death in Secondary School Athletics

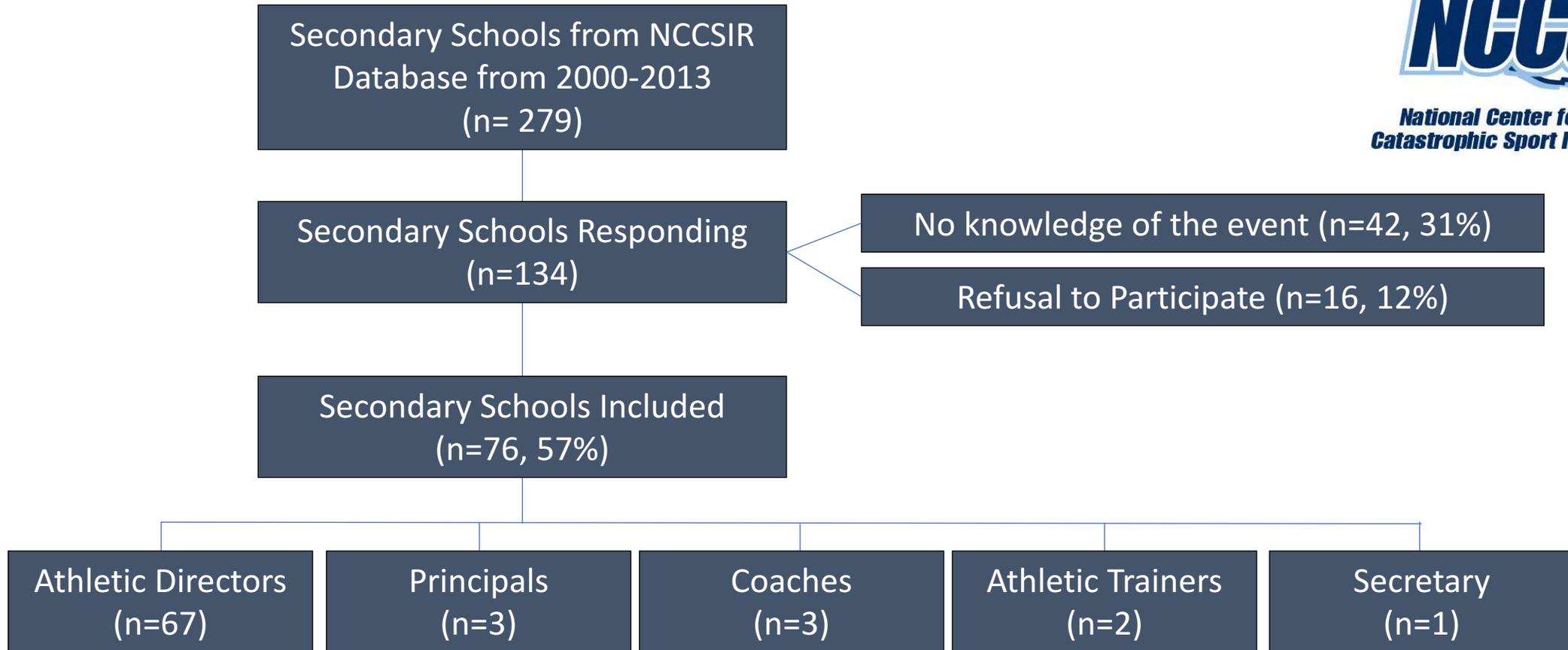
- Background:
 - Current best practices for the prevention of sudden death (SD) during secondary school athletics suggest:
 - appropriate on-site medical services (e.g. athletic trainer)
 - venue-specific emergency action plans (vEAP)
 - basic emergency training for coaches
 - No comprehensive retrospective analysis of SD cases in this setting has investigated if appropriate on-site medical services were provided, if vEAP were present and followed, or if coaches utilized their emergency training.

Purpose & Methods

- **Purpose:** To examine cases of SD during sport at the secondary school level and describe appropriate medical services, emergency planning, and emergency training at the time of the death.
- **Patient or Other Participants:**
 - Secondary schools who experienced a sport-related SD during a training or competition session
 - National Center for Catastrophic Sport Injury Research database from 8/1/2000-7/31/2013.
 - Representatives employed at the time of death or with extensive knowledge of the death were asked to participate.



Participation Breakdown



Appropriate Medical Personnel Are Not Present At A Majority Of Sudden Deaths

- 62% (n=42) of the sudden deaths at the secondary schools did NOT have athletic training services.
- No medical services of any kind were present at 42% (n=32) of the deaths.
- ATs were employed in 61% (n=46) of the schools, but not present for 27% (n=17) of the deaths.

Venue Specific EAPs (vEAPs)

- Overall vEAP Presence
 - 66% (n=50) of schools had vEAPs in place
 - 44% (n=26) of schools did NOT have vEAPs in place
- Of schools with Athletic Training services (n=46)
 - vEAPs were present in 74% (n=34) of the schools
 - vEAPs were not present in 26% (n=12) of the schools
- When venue specific EAPs were in place, it was followed 100% of the time!
- Those without vEAPs in place (n=26), 38% (10/26) remain today without a vEAP!

Emergency Training

- In sudden death cases 78% (n=59) of coaches received emergency training
- This training was applied in 58% (n=34) of deaths

Key Takeaways

- 62% of the deaths did not have appropriate on-site athletic training services present.
- Medical services were not present in 42% of SD cases.
- When vEAP were in place, they were followed.
- Although medical personnel and vEAP were present in ~60% of cases, the death was not prevented.
- Detailed case-specific information to identify underlying medical cause of death and opportunities for improving prevention and care procedures are needed.

The Difference

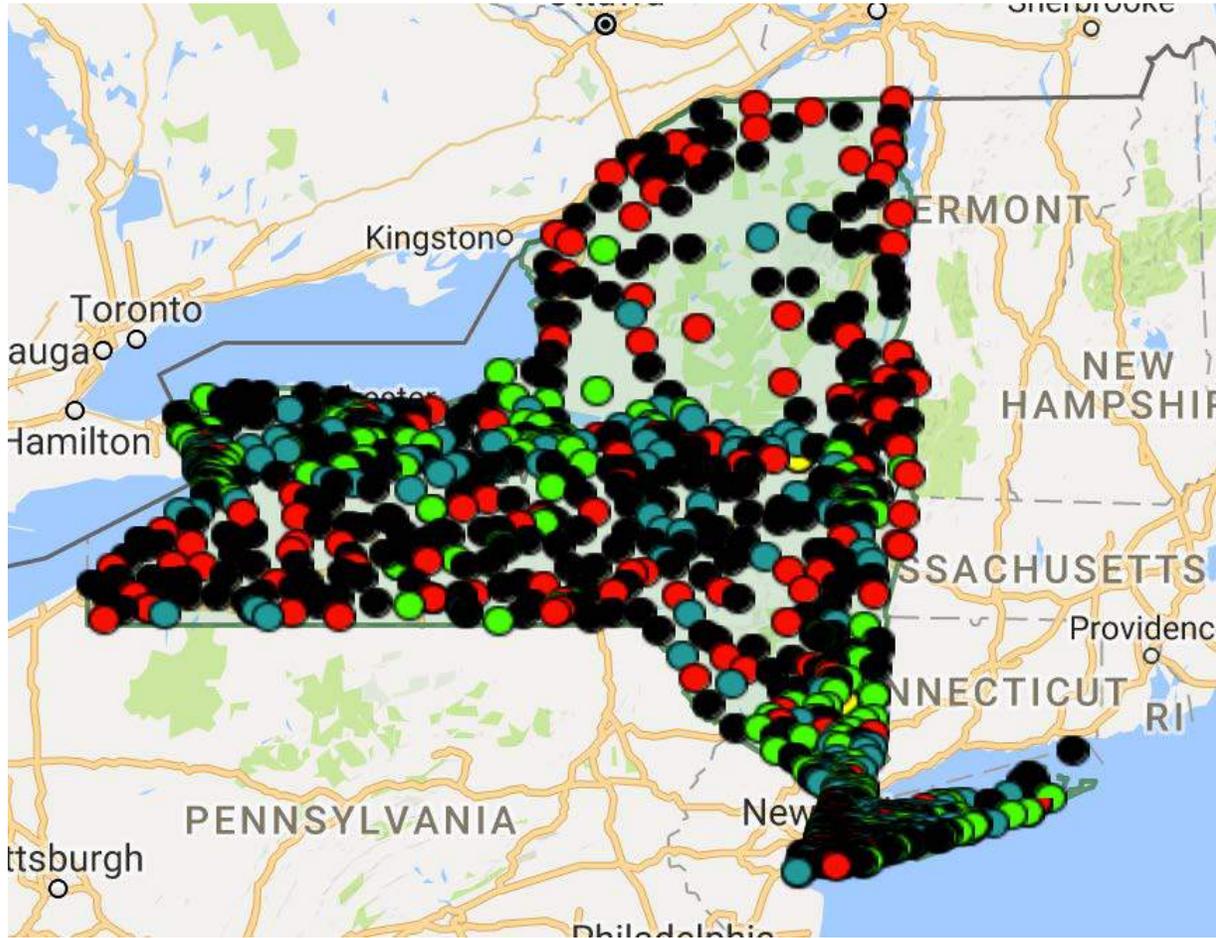
What percentage of schools have ATs? How are Athletic Training services improving throughout the country? Where can we make a difference?



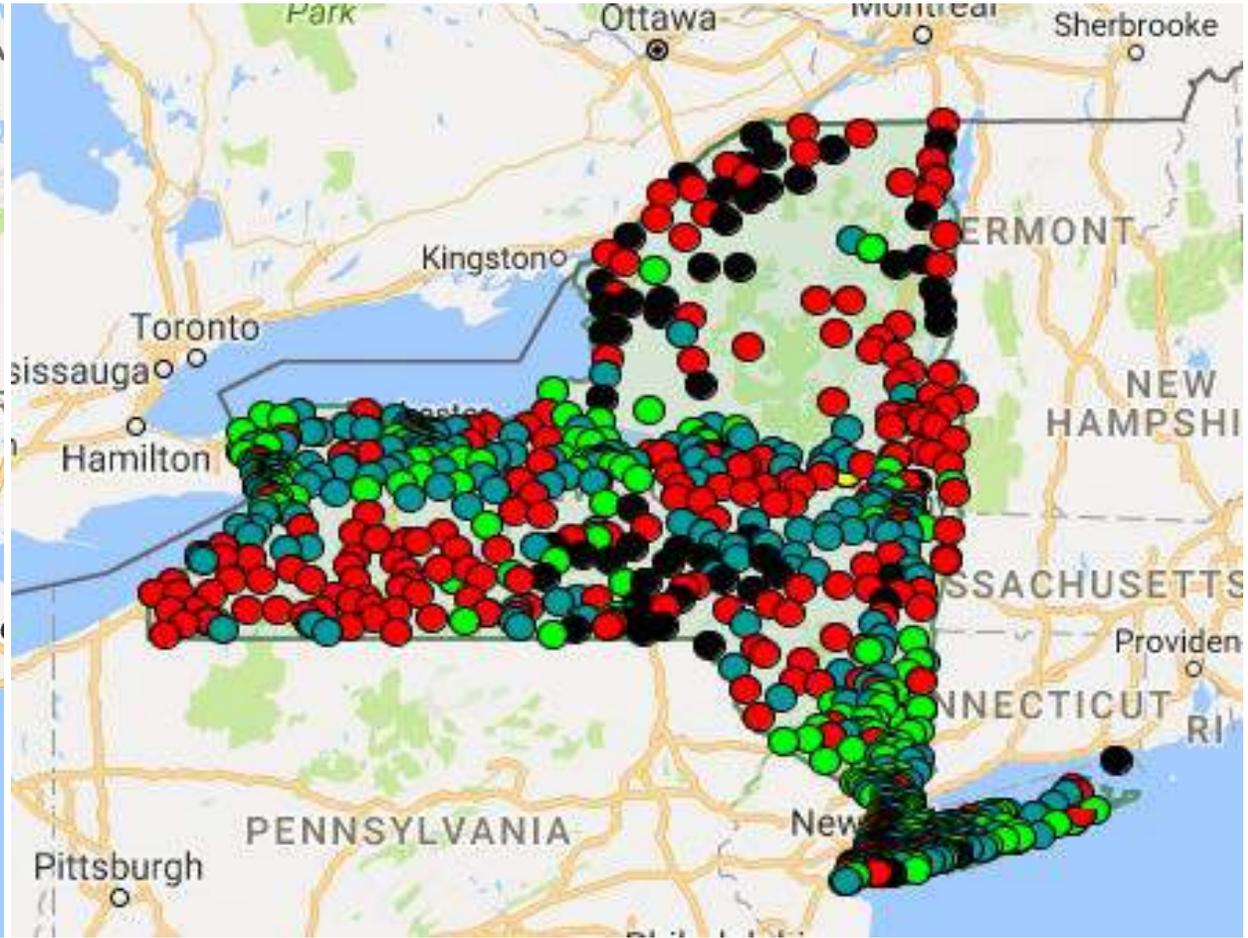
ATLAS

ATHLETIC TRAINING LOCATIONS AND SERVICES





November 2016

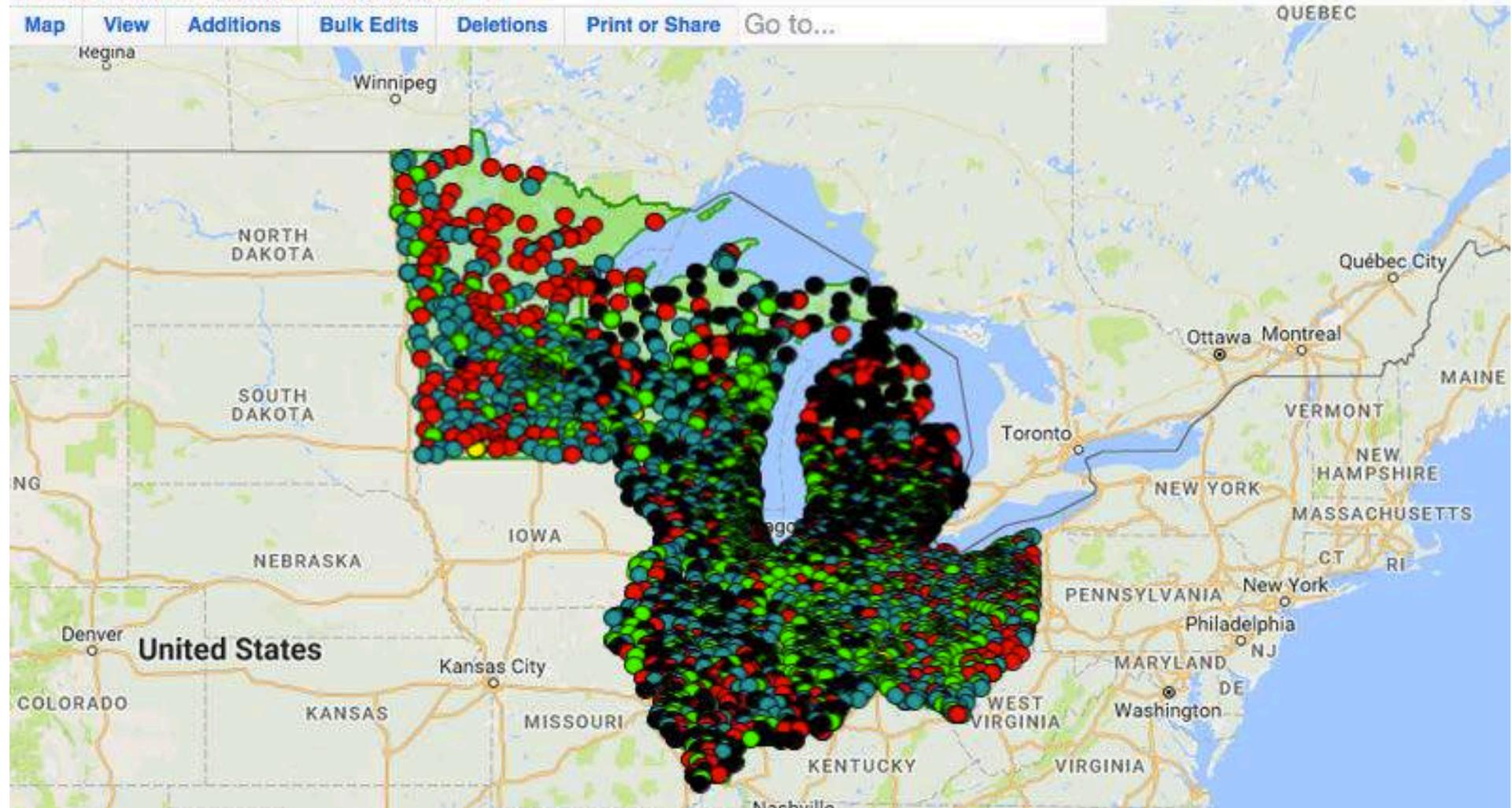


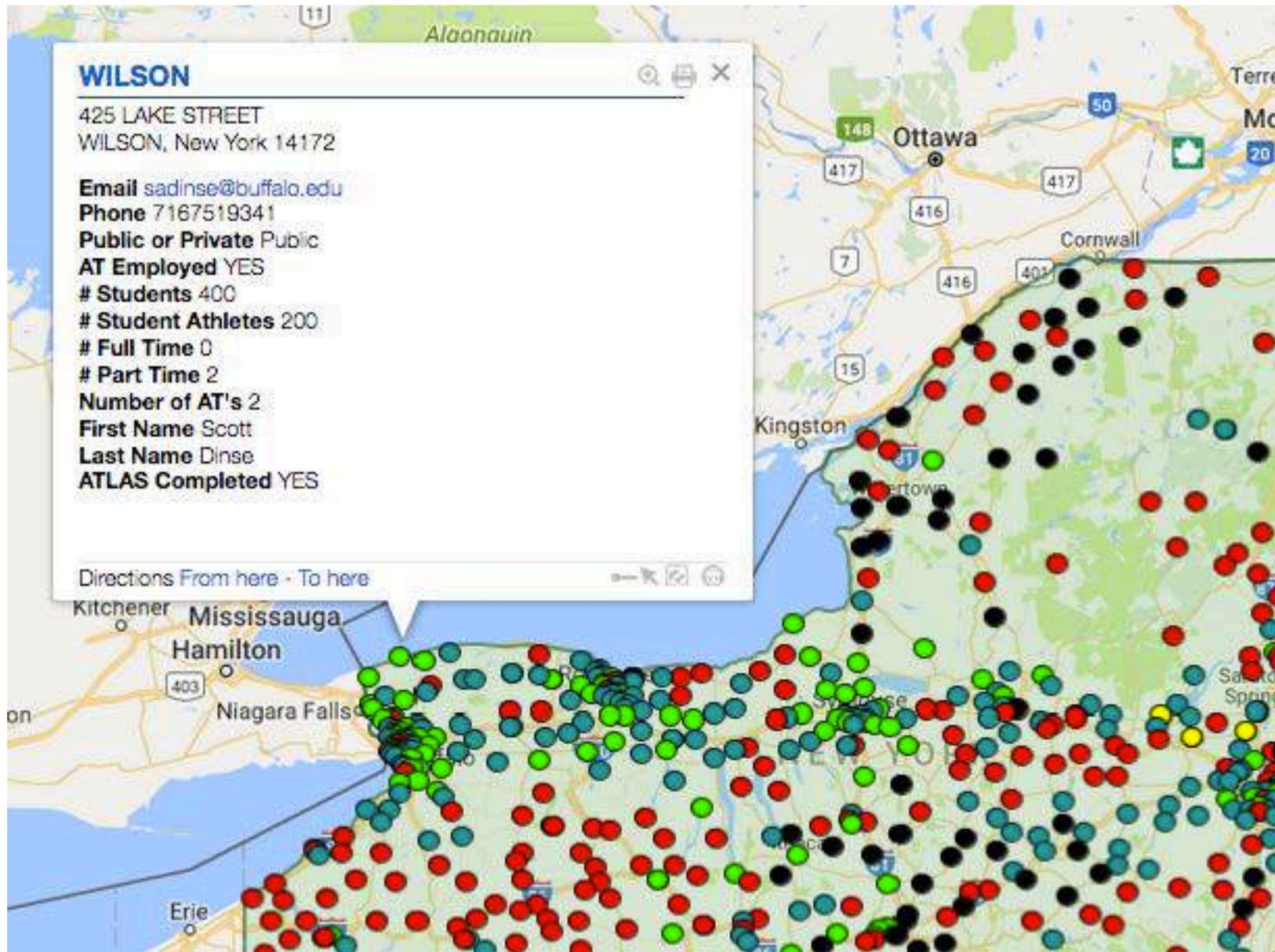
March 2017

ATLAS

ATHLETIC TRAINING LOCATIONS AND SERVICES

District 4 Athletic Training Locations & Services: A.T.L.A.S Project





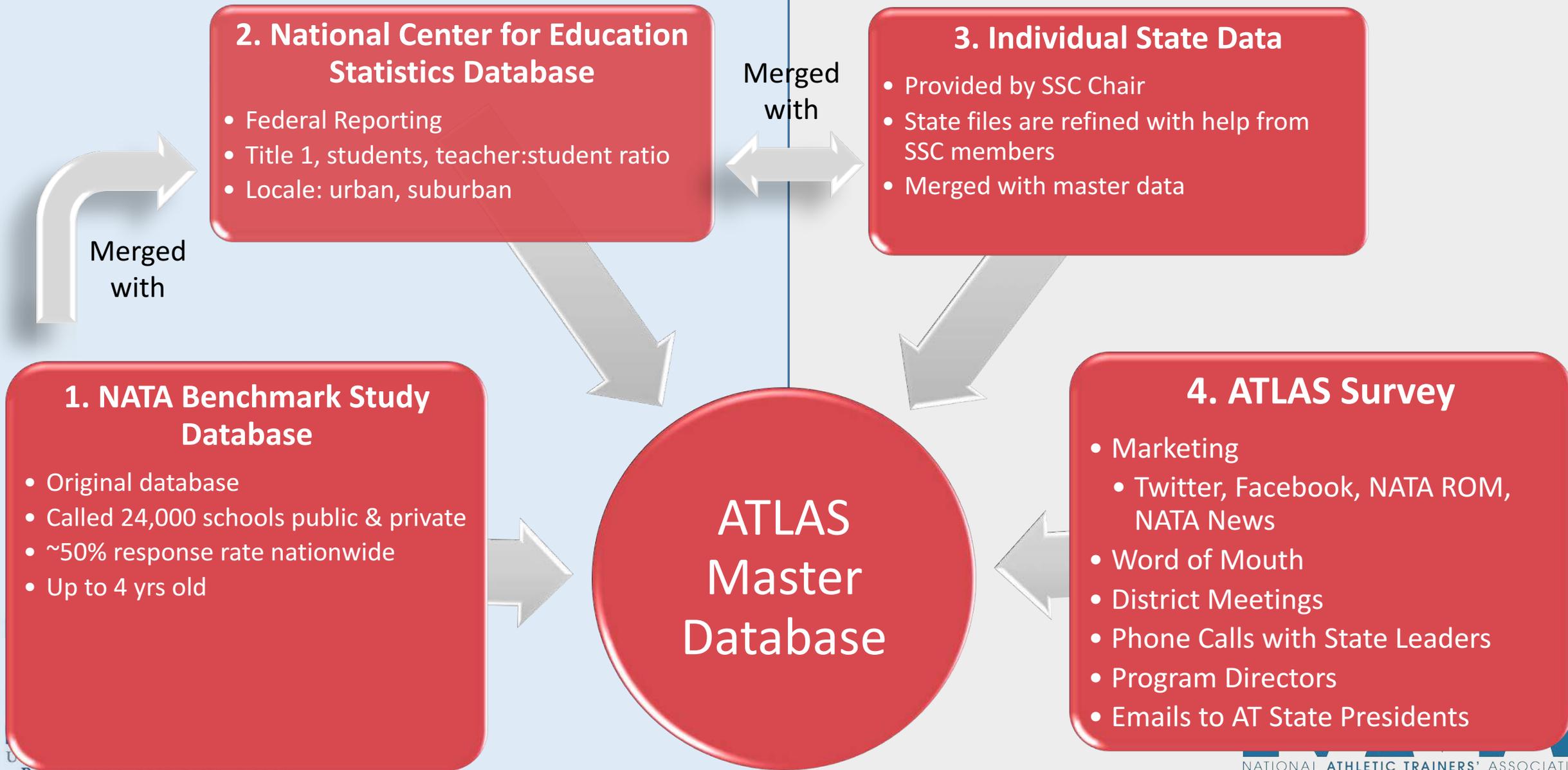
Purpose(s):

1. Create a real-time database of athletic training services in secondary schools
2. Create a directory for each state's athletic training association and high school athletics association
3. Assist states in moving toward full-time athletic training services
4. Provide useful data to each state's athletic training association and high school athletic association
5. Identify common factors associated with increased athletic training services across the country.
6. Improve the delivery of healthcare services via improved communication between secondary schools

Data Acquisition Process

Past Process

Current Process



ATLAS Project Web of Connectivity

ATLAS Provides:

1. Comprehensive List of AT Services
2. Evidence to support best practice implementation (EAPs)
3. Sports covered
4. Physician supervision
5. Physician credentials
6. AT credentials/licensure
7. AT hiring trends (over time)
8. Thresholds for FT and PT
9. Comparisons between FT & PT
10. Directory for ATs



Summary Points (30,000 ft view)

- 2016-2017 Primary Goals
 - Remove all unknown schools (black dots) in each state on the ATLAS maps
 - Get to 8,000 surveys by June 2017
- ATLAS “Mapping” is showing great progress:
 - June= 14,888 → Dec= 11,752 → Mar= 15,973
 - Overall % Mapped: June= 44% → Dec= 53% → Mar= 71%
- ATLAS Survey continues to show great progress:
 - June 2016 (5K surveys) → Dec 2016 (6,600K surveys) → March 2017 (7,000 surveys)
- The success of ATLAS Project hinges upon:
 - completion of the surveys
 - assistance with mapping by key leaders at the state and district level
 - KSI has reached out to each state’s SSC member for assistance

ATLAS Results As Of 6:45am Today

- 71% of the nation's high schools are mapped (n=15,973/22,589)
- 43% of schools with AT services have completed the in-depth ATLAS survey (n=4,828/11,282)
- 50% of schools have athletic training services (n=11,282/22,589)

Overall:

- 27% of schools have Full Time services (n=6,022/22,982)
- 23% of schools have Part Time services (n= 5,260/22,982)
- 21% of schools have athletics with NO AT services (n= 4,770/22,982)
- 29% of school remain unknown (n=6,509/22,589)

How are Athletic Trainers hired Nationally?

NATA Abstract 2017

Employment of Athletic Trainers In Secondary Schools: The ATLAS Project

Objective: To quantify current employment providers of AT services in the secondary school setting nationwide.

Results:

- 27% Employed School District Employee
- 16% School District Employee Teacher
- 51% Medical/University Employee
- 6% Independently Contracted

- Background

- Previous research of secondary school administrators has determined that:
 - 70% of public schools have access to an AT
 - 58% of private schools nationwide have access to an athletic trainer.
 - 37% of public reported having full time AT services
 - 28% of private school administrators reported having full time AT services.
- However specific information reported from athletic trainers regarding their specific employer has not been documented.

Methods

- **Objective:** To quantify current employment providers of AT services in the secondary school setting nationwide.
- **Design:** Longitudinal, survey-based questionnaire.
- **Setting:** Public, private, charter, magnet, special education and alternative secondary schools in the United States.
- **Participants:** Secondary school certified athletic trainers.
- **Interventions:** Secondary school ATs completed an online questionnaire from June 2015 to November 2016.

Full Time vs. Part Time

- Full-time services were defined as all of the following:
 - AT services provided to only 1 school
 - ≥ 5 days per week
 - ≥ 30 hours per week
 - ≥ 10 months per year.
- Part-time services were defined as anything less than FT.
- Athletic trainer employment status was collected and split into four categories:
 - school district employees (SDE)
 - school district employees with teaching responsibilities (SDET)
 - medical or university facility employees (MUE)
 - independent contractors (IC).

Results

- Athletic trainers (n=3836) from 50 states and one province responded to the survey.
- 81% (n=3136/3836) worked in public schools
- 16.69% (n=627/3836) in private schools
- 1.9% (n=73/3836) in charter, magnet, special education and alternative schools combined.

Employer

- 27%(n=1052/3836) of athletic trainers are SDE
- 16%(n=630/3896) are SDET
- 51%(n=1965/3836) are MUE
- 5%(n=189/3836) are IC.

Results

- 43% employed by the school district (SDE + SDET)
- 57% while a majority of athletic trainers were not employed by the school district (MUE + IC)
- 76% (n=2918/3836) of athletic trainers reported working FT.
 - Of the FT athletic trainers, 31% (n=908/2918) were SDE,
 - 18% (n=515/2918) were SDET
 - 48% (n=1389/2918) were MUE
 - 3% (n=97/2918) were IC.
- 24% of the athletic trainers reported working PT
 - 16% (n=144/917) were SDE
 - 12% (n=115/917) were SDET
 - 62% (n=576/917) were MUE
 - 10% (n=92/917) were IC

Key Findings

- Athletic trainers employed by a medical or university facility to provide AT services to the secondary school was the most common, followed by employment through the school district without teaching, school district with teaching responsibility, and independent.
- Nationally, it is more common for an AT to be hired from an outside source (MUE + IC) than by the school district (SDE + SDET).
- These data will enhance knowledge of and identify current employment methods for school districts/organizations looking to hire an AT in the high school setting.

The Dollars

What is the value of the athletic trainer from the insurance perspective?



Entity	State & School District	Parent	Insurance Provider
Associated Costs	<ul style="list-style-type: none"> Catastrophic Premium (State Cost) Liability Premium (School District) Excess Medical Premium (School District) 	<ul style="list-style-type: none"> Co-pays % of medical care cost for specialist % of medication cost 	<ul style="list-style-type: none"> % of claims (Depending on plan) Operating/processing claims cost
Goals & Expectations	<ul style="list-style-type: none"> Reduce premium cost Decrease spending Minimize liability Improve safety Reduce cost to parent/community 	<ul style="list-style-type: none"> Reduce out-of-pocket spending. <ul style="list-style-type: none"> Have school to pay if liable Safe Environment for children 	<ul style="list-style-type: none"> Provide coverage based on expected medical costs/risk Reduce number of claims paid out Claims not to exceed premium/limits of coverage
Positive Benefits of an Athletic Trainer	<ul style="list-style-type: none"> Reduce premium cost for <ul style="list-style-type: none"> Liability Insurance? Excess Medical? Catastrophic? Decreased school liability Improved safety & athlete care Compliance with league recommendations Decreased cost to parent 	<ul style="list-style-type: none"> Decreased unnecessary costs for: <ul style="list-style-type: none"> Visits to ER Emergency transport Rehabilitative costs for: <ul style="list-style-type: none"> Pre and Post surgery 	<ul style="list-style-type: none"> Decreased number of unnecessary claims for: Excess medical, catastrophic, liability? Decreased level of risk at school = less likely to have preventable catastrophic claim?

Goals

School District

- Reduce premium cost
- Decrease spending
- Minimize liability
- Improve safety
- Reduce cost to parent and community

Parent

- Reduce out-of-pocket spending
- Have school pay the cost, if liable
- Safe environment for children

Insurance Provider

- Provide coverage based on expected medical cost and risk
- Reduce number of claims paid out
- Claims not to exceed premium or limits of coverage

Hypothesis

- Preventable (unnecessary) number of secondary insurance claims are observed in schools with no athletic training service.
 - Any difference between full time vs. part time vs. no service?

Methods

- Data from two secondary athletics insurance companies
 - Claims data with details on the medical service provided
 - Company A: August, 2010- July, 2015 (i.e., 4 academic years)
 - Company B: August, 2012- July, 2014 (i.e., 2 academic years)
- Athletic training service data from ATLAS
 - Data from what was reported by January, 2017

Sampling

Number of Policy Holders	Athletic Training Service		
	Full Time	Part Time	None
AR	5	1	8
CT	13	36	2
DE	5	2	0
FL	1	0	4
GA	2	3	5
IN	1	0	0
KS	1	0	0
KY	3	2	14
LA	2	10	1
MA	4	2	8
MO	0	0	1
MS	0	1	11
NC	0	2	3
NJ	109	2	12
NY	0	0	1
OH	0	0	2
PA	112	18	21
SC	14	7	13
TN	0	1	1
TX	4	2	1
VA	0	0	2
WV	0	0	1
Total	276	89	111

- Data from 476 insurance policy holders
 - 22 states
 - 32% of the data are from Pennsylvania
 - 26% of the data are from New Jersey
 - Company A
 - Full time: 233
 - Part time: 83
 - None: 111
 - Company B (all data from Pennsylvania)
 - Full time: 44
 - Part time: 6

Analysis by Service: Overview

- Ambulance
- Anesthesia
- Dental injury
- Diagnostic/image/lab tests
- Emergency room
- Equipment/supplies
- Injection
- Prescription
- Outpatient
- Physician
- Rehabilitation/treatment
- Specialist consultation
- Surgery

Company A: 4 academic years cumulative

	Average Number of Service Claims Submitted per Policy Holder	Average Cost Paid per Policy Holder
Full Time	498.42	\$78,027.06
Part Time	532.28	\$72,090.55
None	629.24	\$104,403.69

Company B: 2 academic years cumulative

	Average Number of Service Claims Submitted per Policy Holder	Average Cost Paid per Policy Holder
Full Time	54.32	\$39,063.13
Part Time	161.667	\$38,829.45

Analysis by Service: Company A

- Ambulance
- Anesthesia
- Dental injury
- Diagnostic/image/lab tests
- Emergency room
- Equipment/supplies
- Injection
- Prescription
- Outpatient
- Physician
- Rehabilitation/treatment
- Specialist consultation
- Surgery

ACUTE CARE

- Ambulance
- Emergency room

DIAGNOSIS AND MANAGEMENT

- Diagnostic/image/lab tests
- Rehabilitation/treatment

SURGICAL PROCEDURE

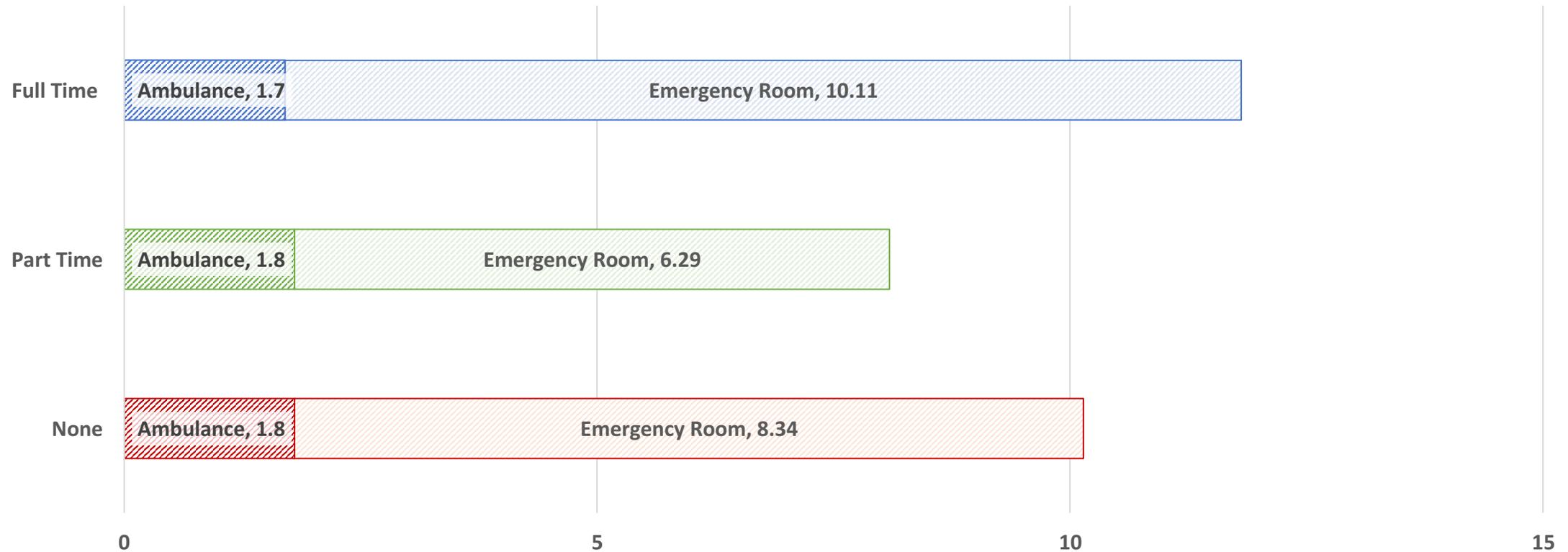
- Anesthesia
- Injection
- Surgery

PHYSICIAN AND SPECIALIST VISIT

- Dental injury
- Equipment/supplies
- Prescription
- Outpatient
- Physician
- Specialist consultation

Analysis by Service: Acute Care

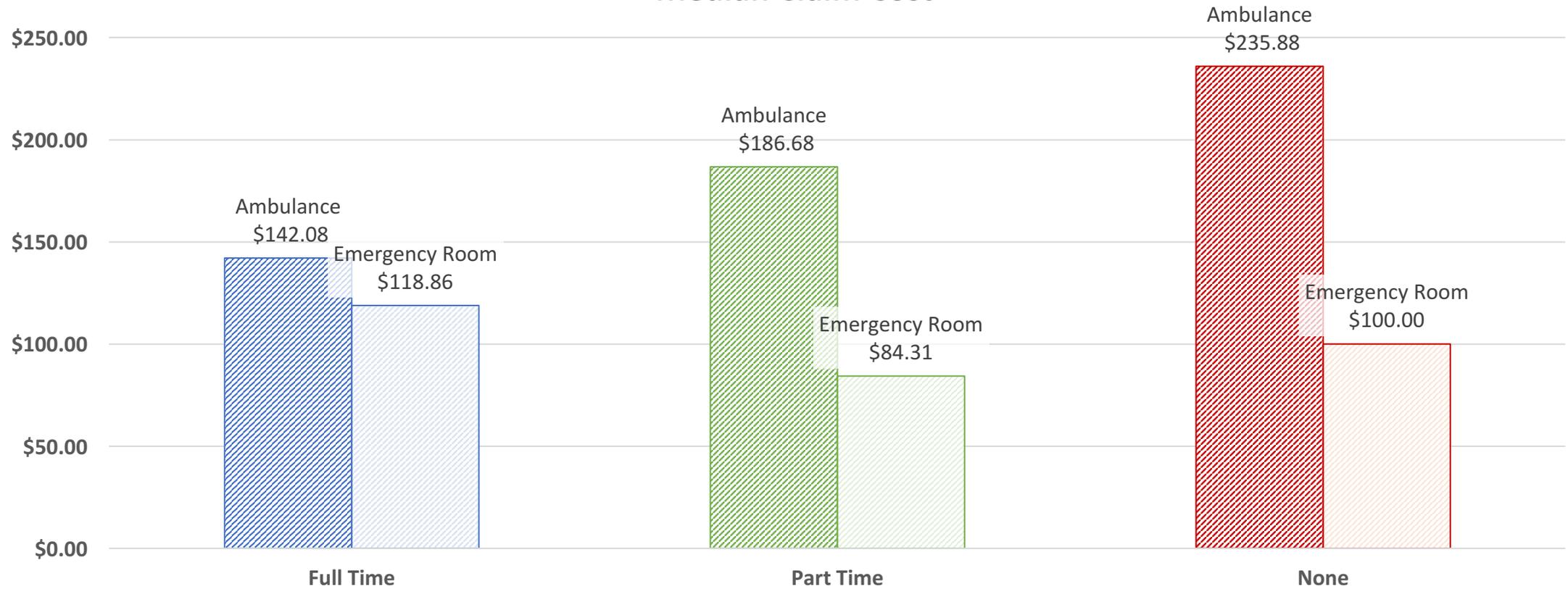
Average Number of Acute Care Claims Submitted per Policy Holder



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Acute Care

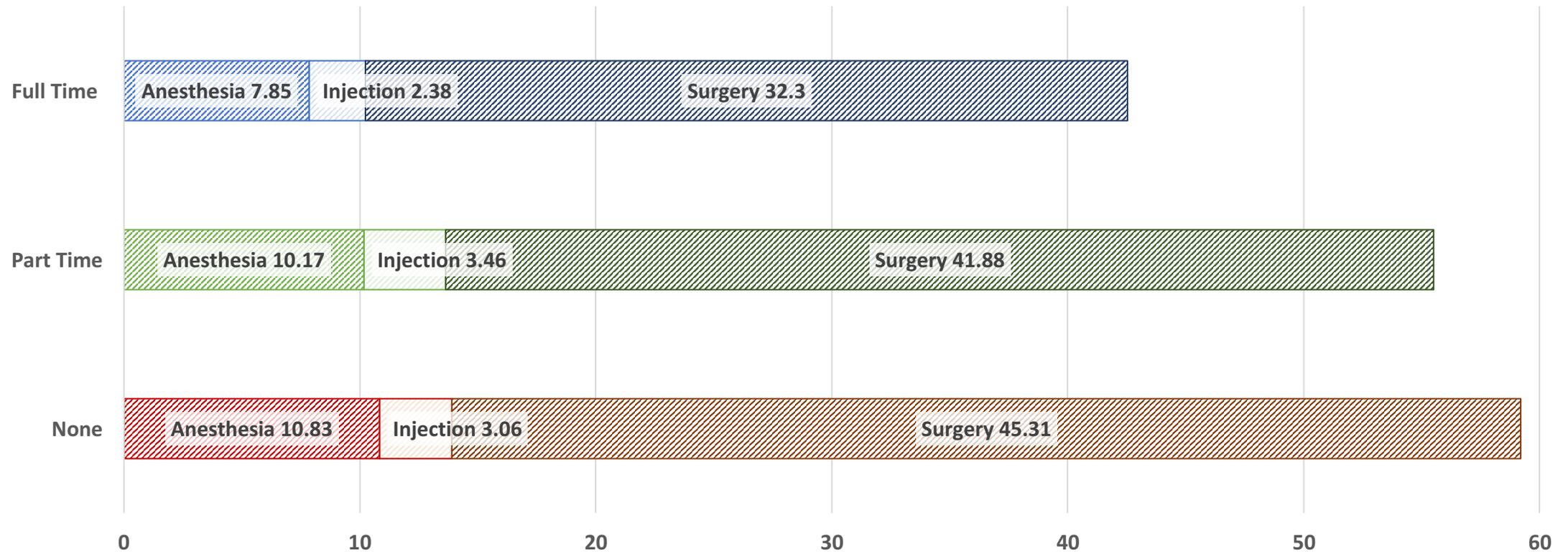
Median Claim Cost



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Surgical Procedure

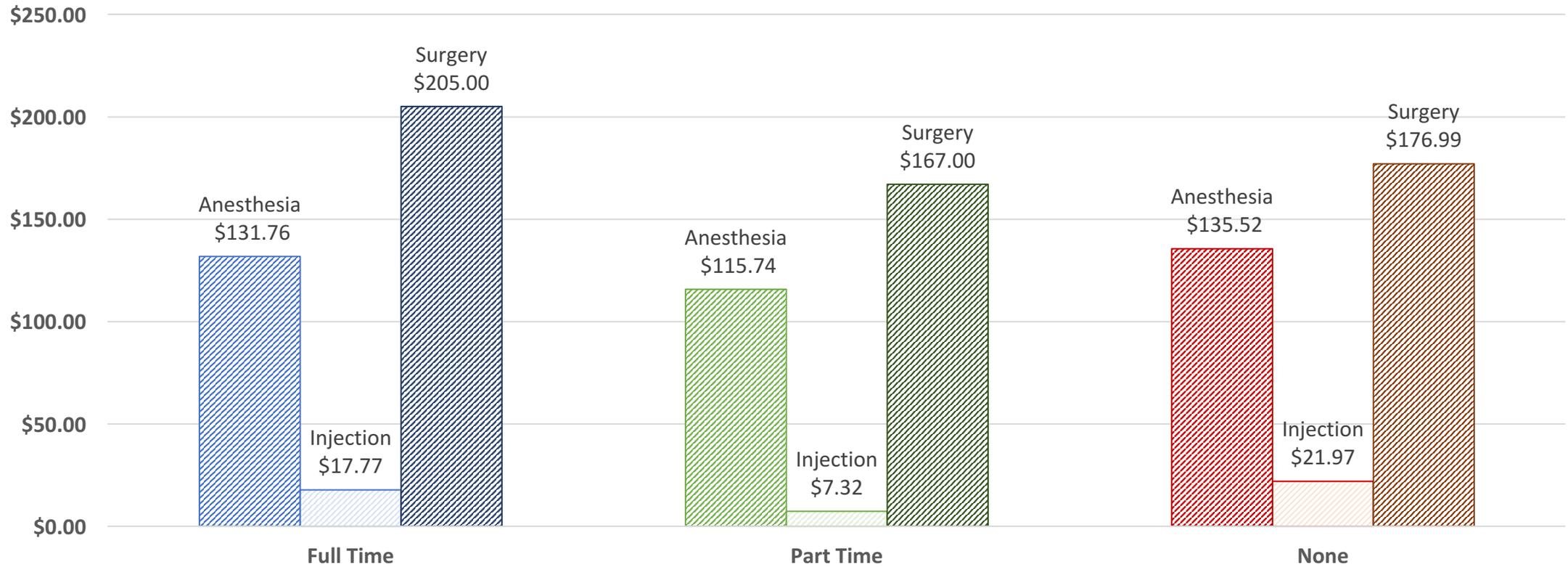
Average Number of Surgical Procedure Claims Submitted per Policy Holder



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Surgical Procedure

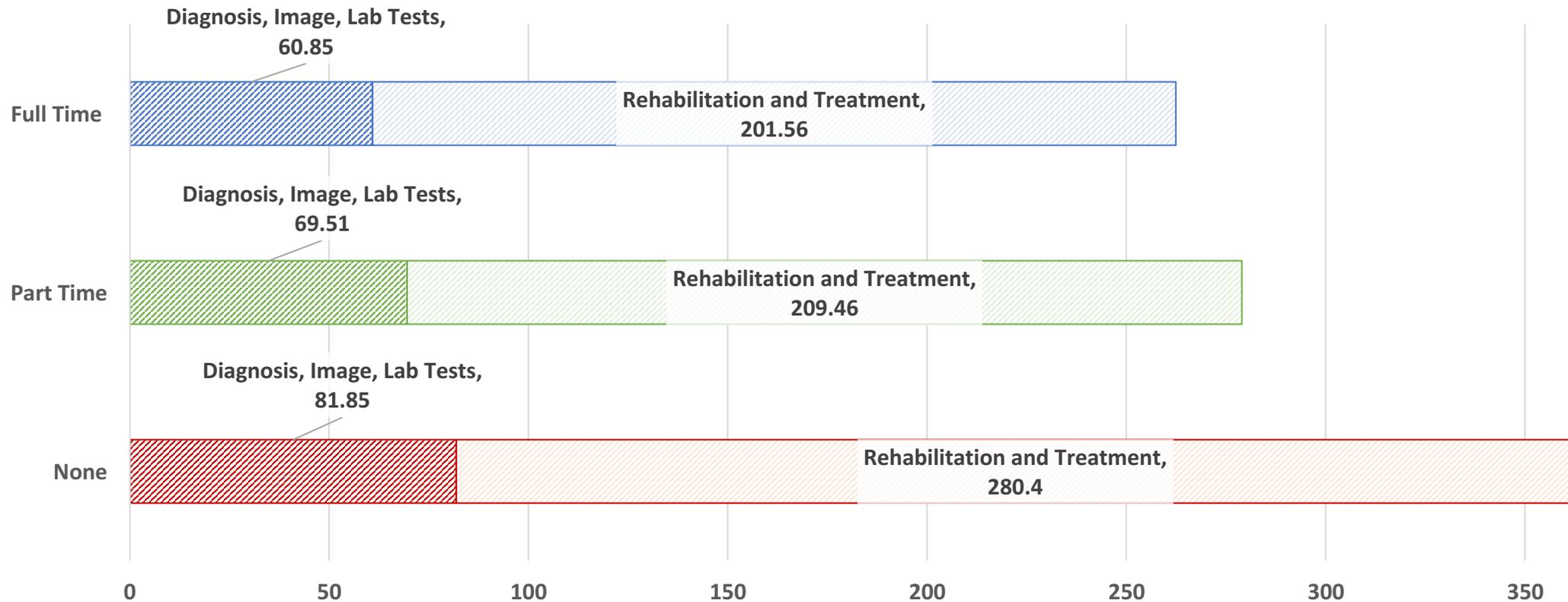
Median Claim Cost



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Diagnosis and Management

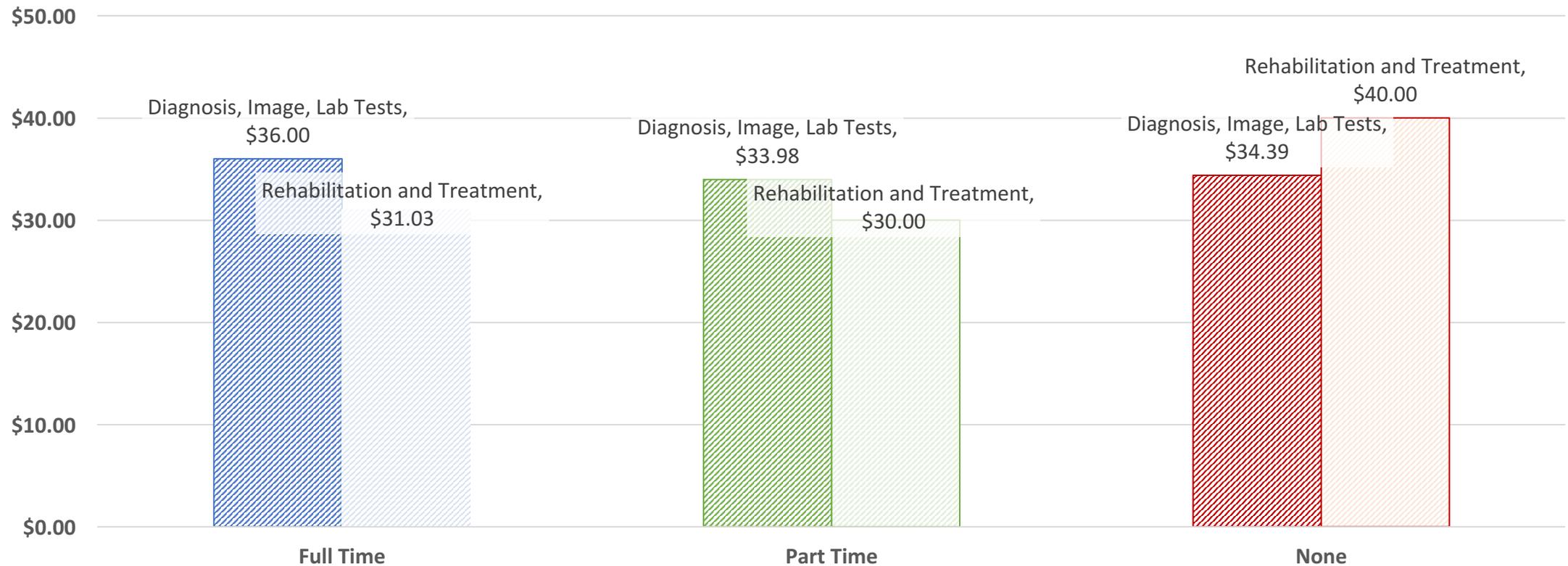
Average Number of Diagnosis and Management Claims Submitted per Policy Holder



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Diagnosis and Management

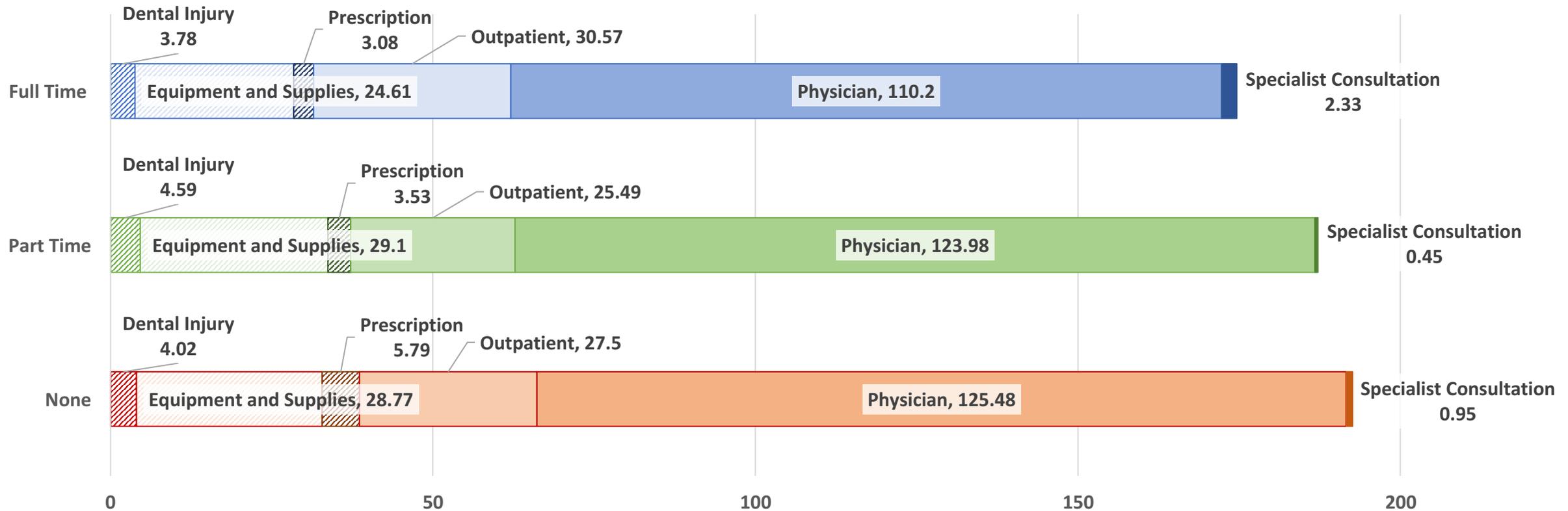
Median Claim Cost



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Physician and Specialist Visit

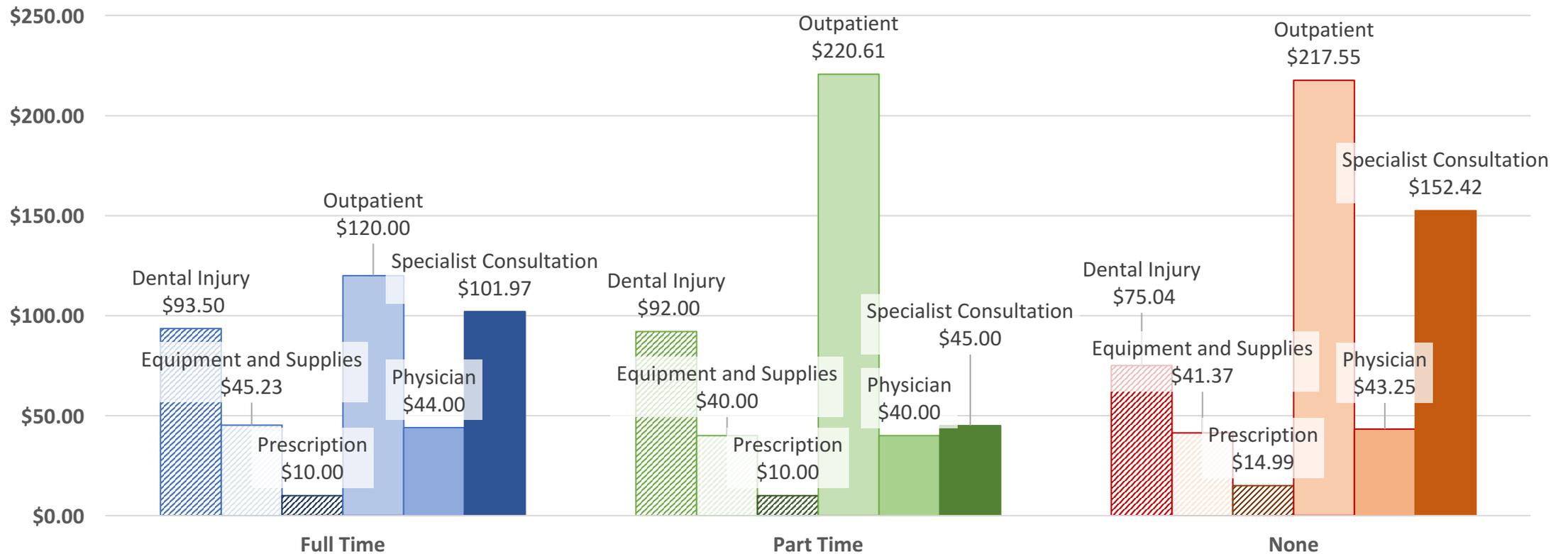
Average Number of Physician and Specialist Visit Claims Submitted per Policy Holder



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

Analysis by Service: Physician and Specialist Visit

Median Claim Cost



FULL TIME: 233 **PART TIME: 83** **NONE: 111**

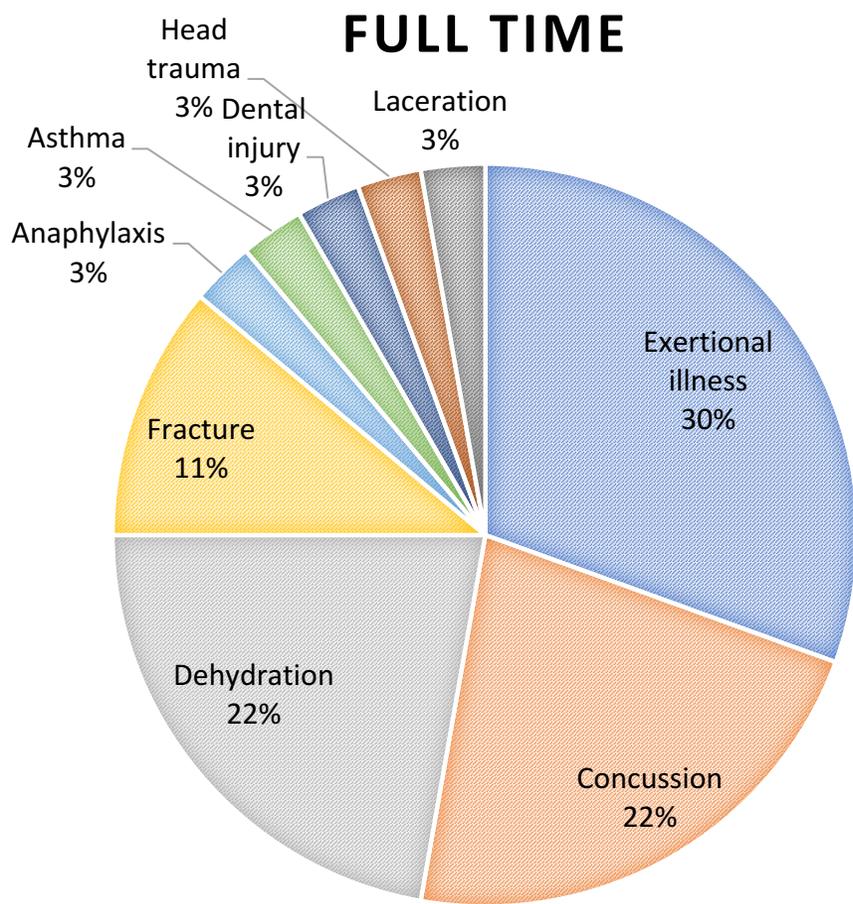
Limitations

- Not all types of injuries happen at constant rate for all schools
 - Our analysis is the average of four academic years
- No information on primary insurance claims
- Analysis per policy holder (school district) not by individual school

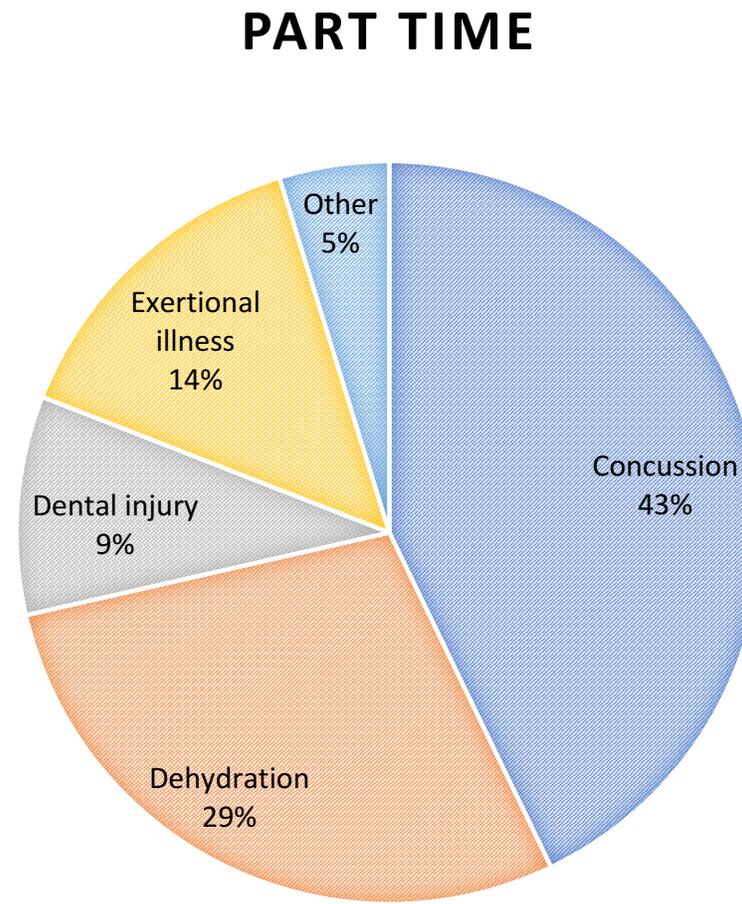
Conclusions

- Four-year data on insurance data demonstrated that the number of claims and average cost were highest in schools with **no athletic trainer**.
- Frequencies of average service claims were lowest in **full time** when the services were related to (1) **surgical procedure**, (2) **diagnosis and management**, (3) **physician and specialist visit**.
- Highest number was observed in **full time** for **acute care** related service claims, probably due to the enhanced recognition of injuries that warrant further care.

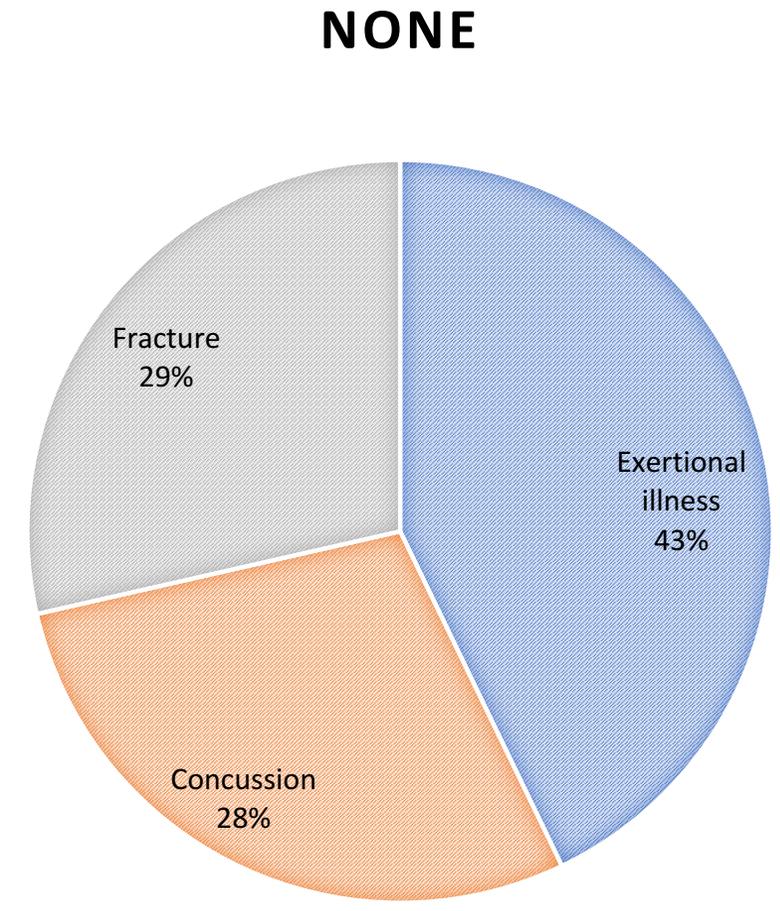
Analysis by Service: Ambulance



359/395 cases unknown diagnosis



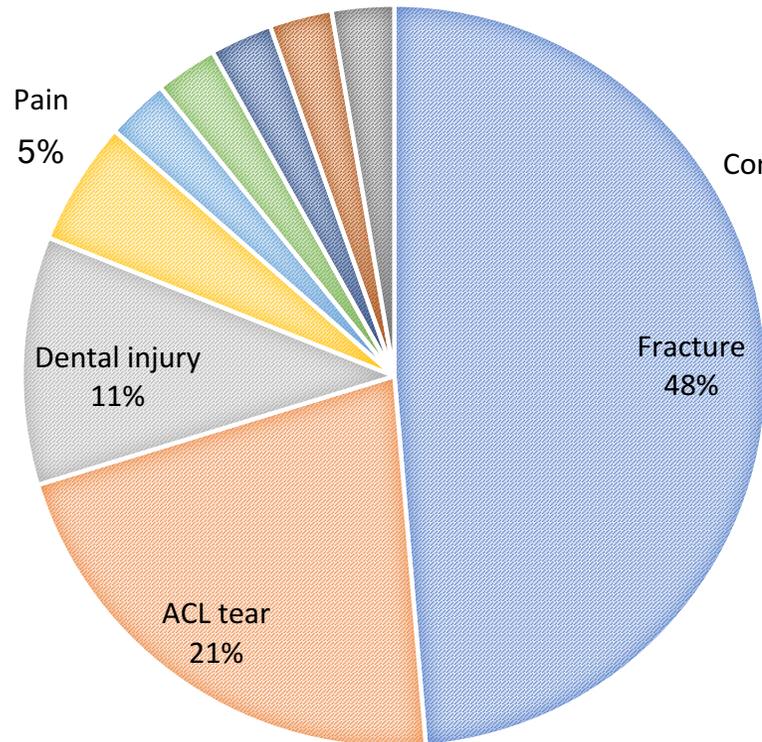
129/150 cases unknown diagnosis



182/196 cases unknown diagnosis

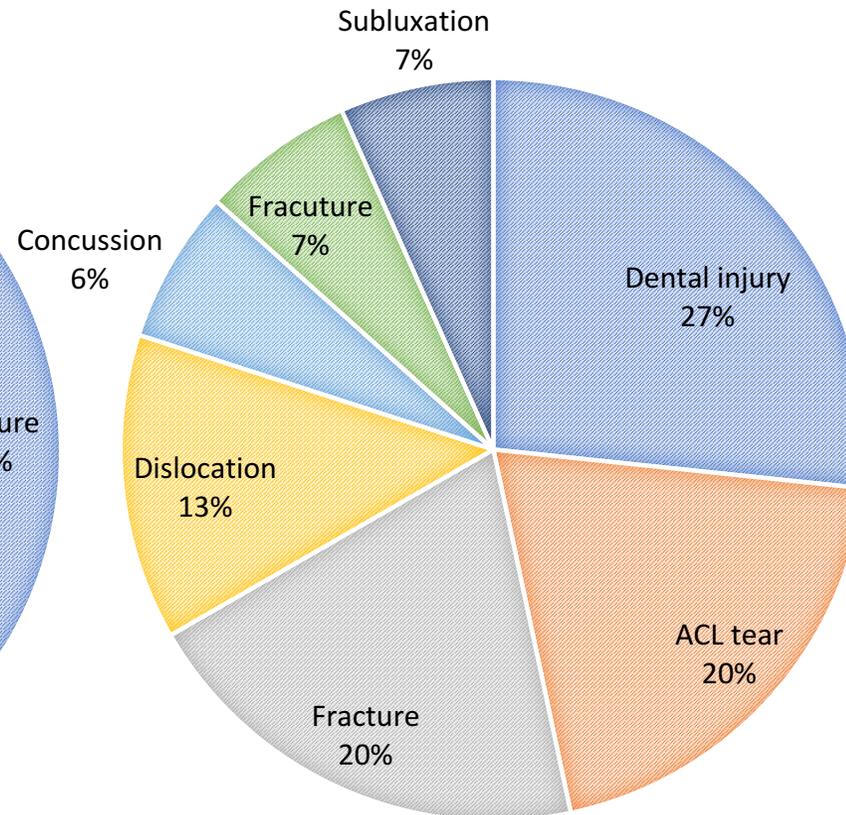
Analysis by Service: Anesthesia

FULL TIME



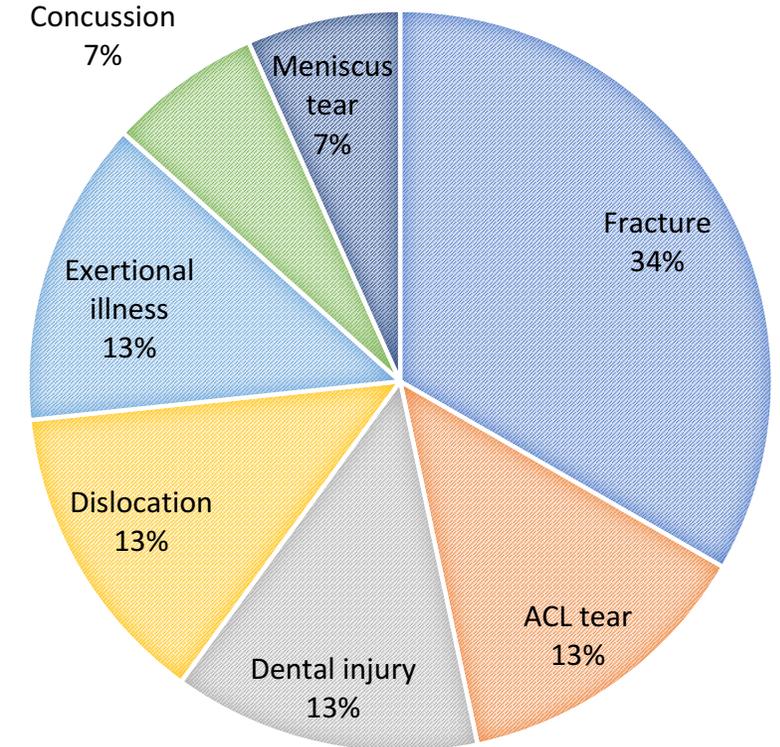
1790/1827 cases unknown diagnosis

PART TIME



829/844 cases unknown diagnosis

NONE



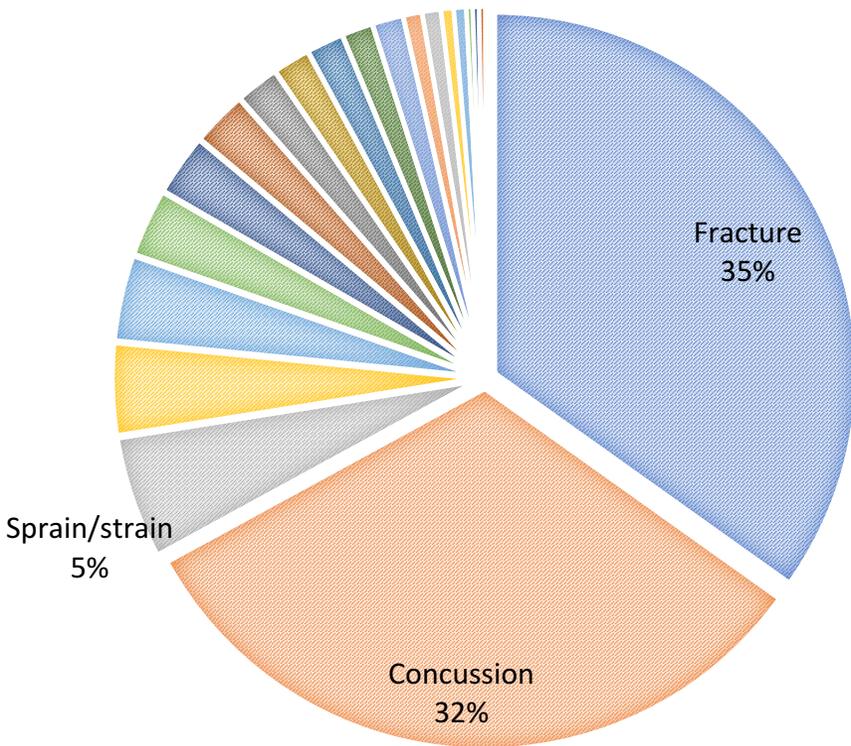
1187/1202 cases unknown diagnosis

Analysis by Service: Diagnostic/Image/Lab Tests

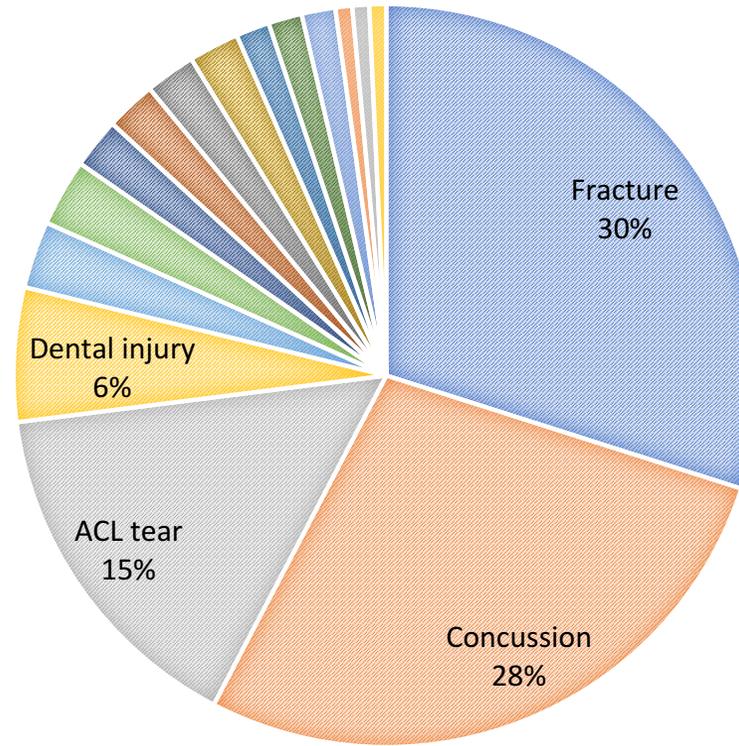
FULL TIME

PART TIME

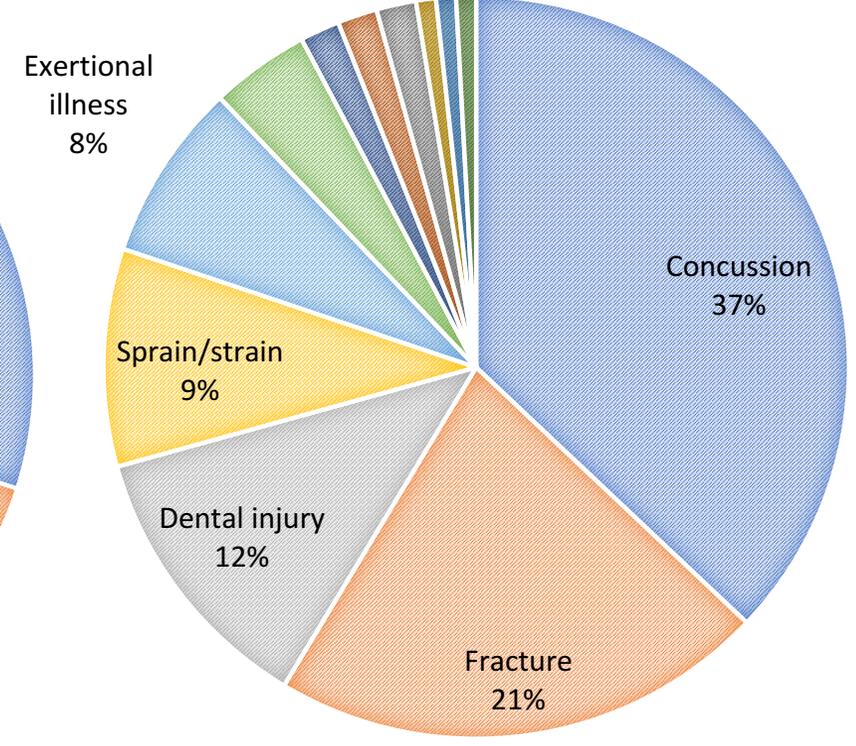
NONE



13807/14174 cases unknown diagnosis



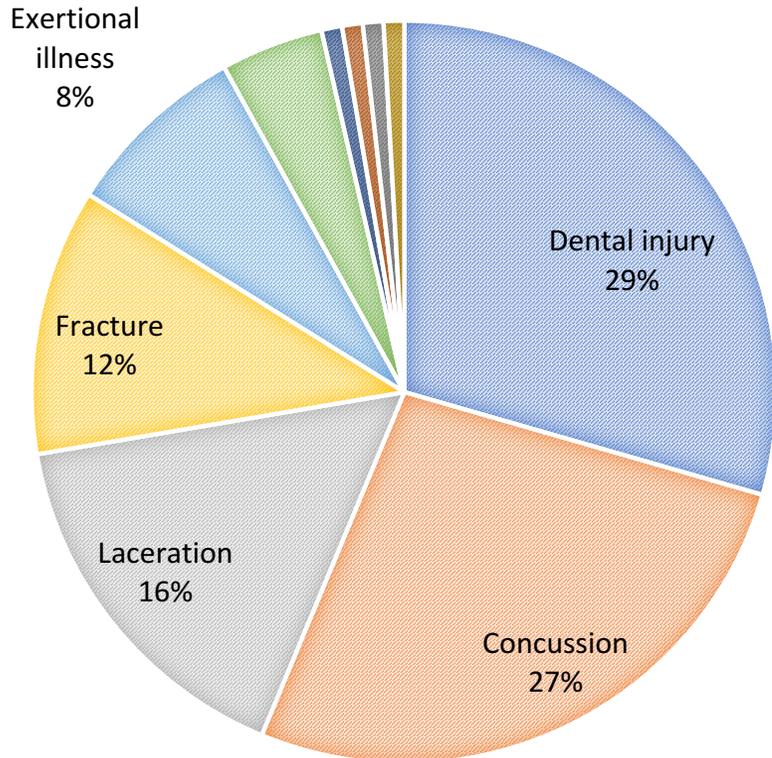
5632/5769 cases unknown diagnosis



8969/9085 cases unknown diagnosis

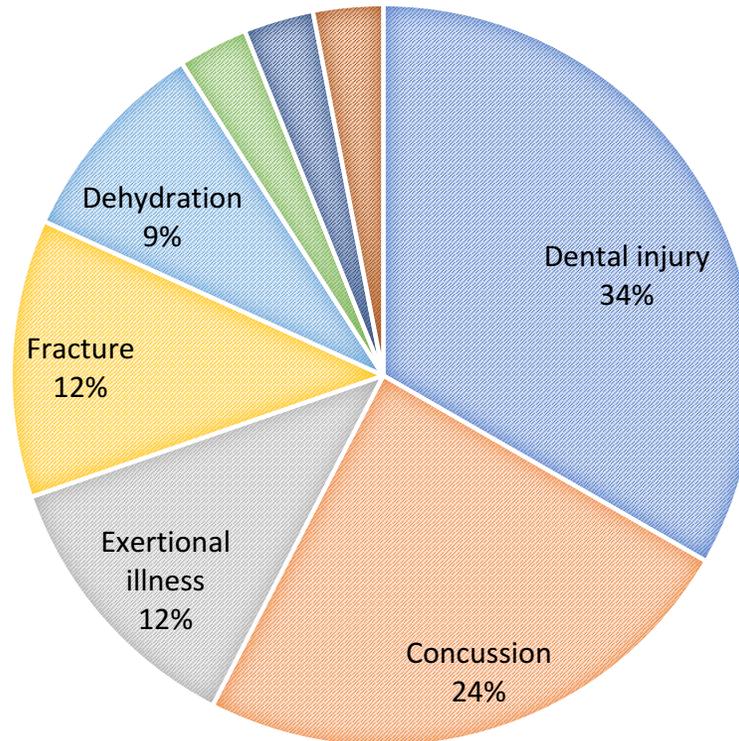
Analysis by Service: Emergency Room

FULL TIME



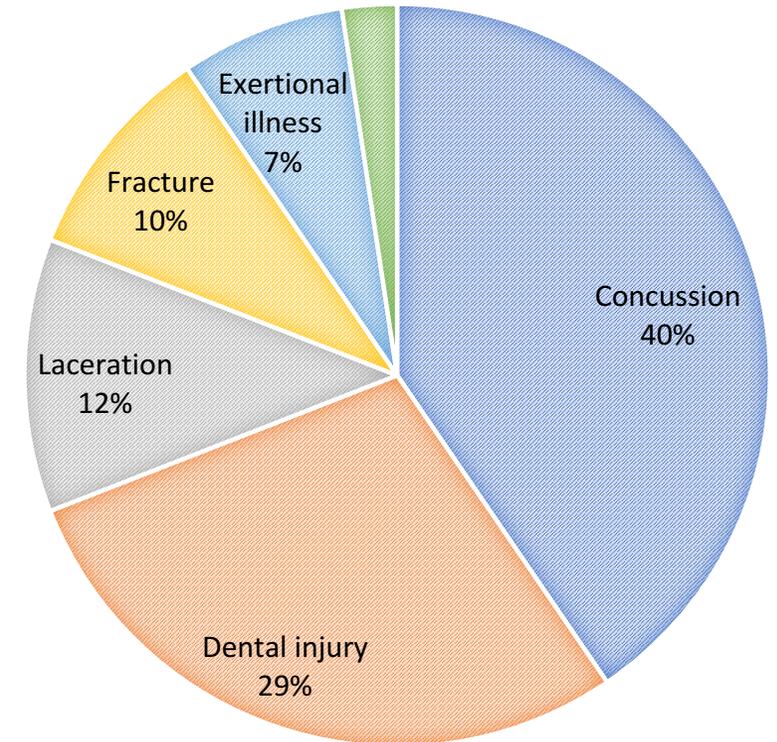
2242/2354 cases unknown diagnosis

PART TIME



489/522 cases unknown diagnosis

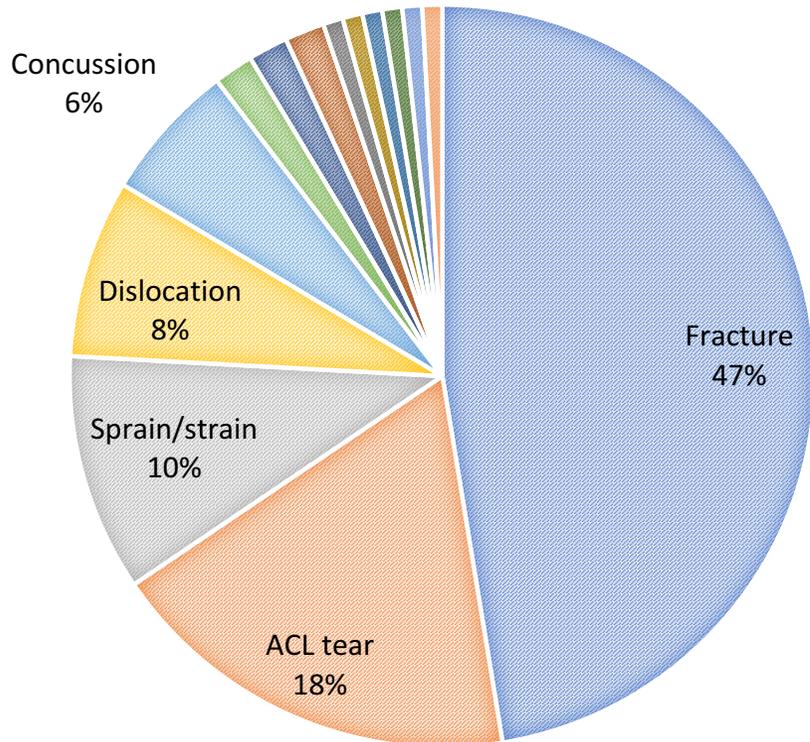
NONE



884/926 cases unknown diagnosis

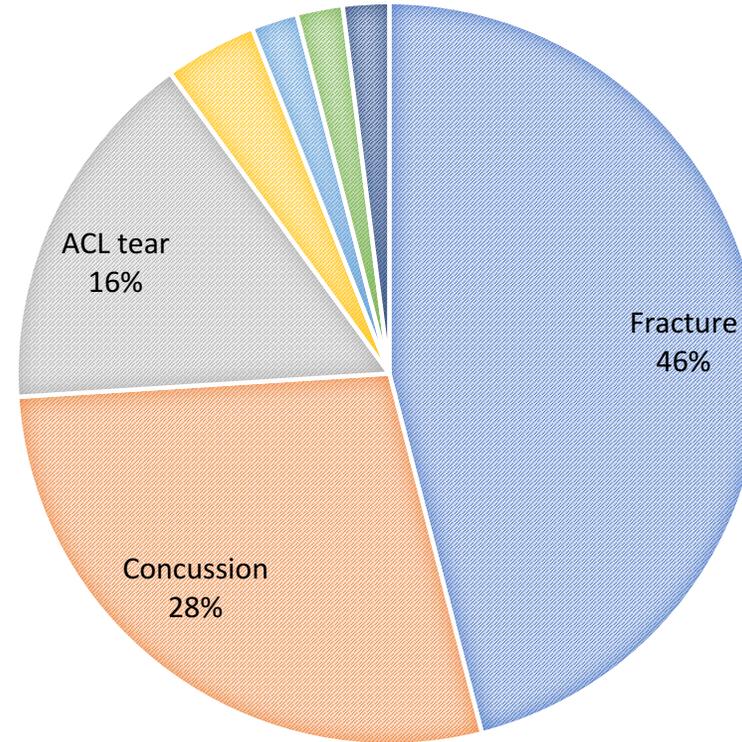
Analysis by Service: Equipment/ Supplies

FULL TIME



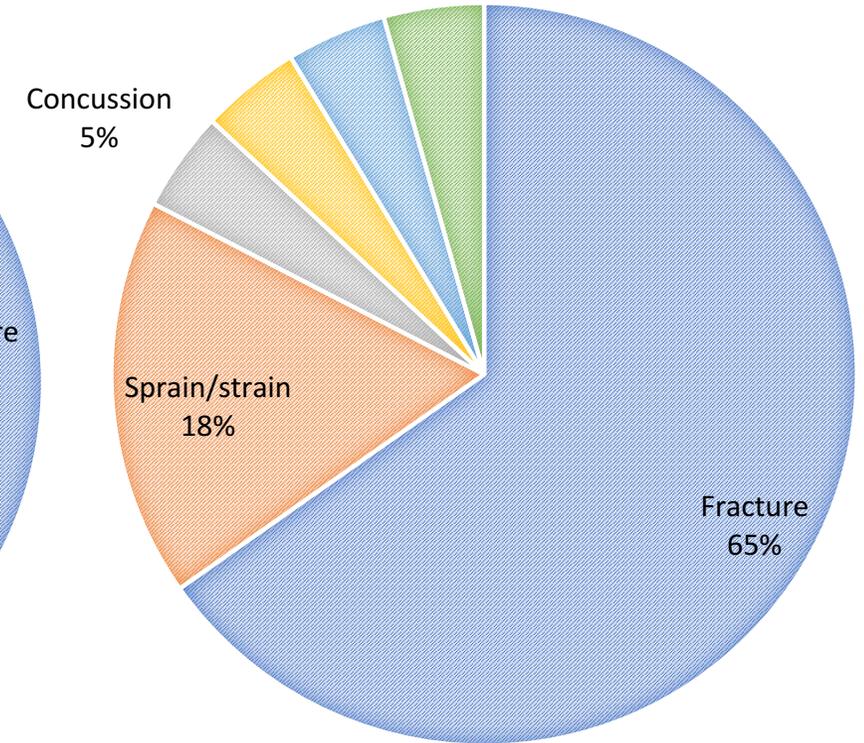
5617/5733 cases unknown diagnosis

PART TIME



2365/2415 cases unknown diagnosis

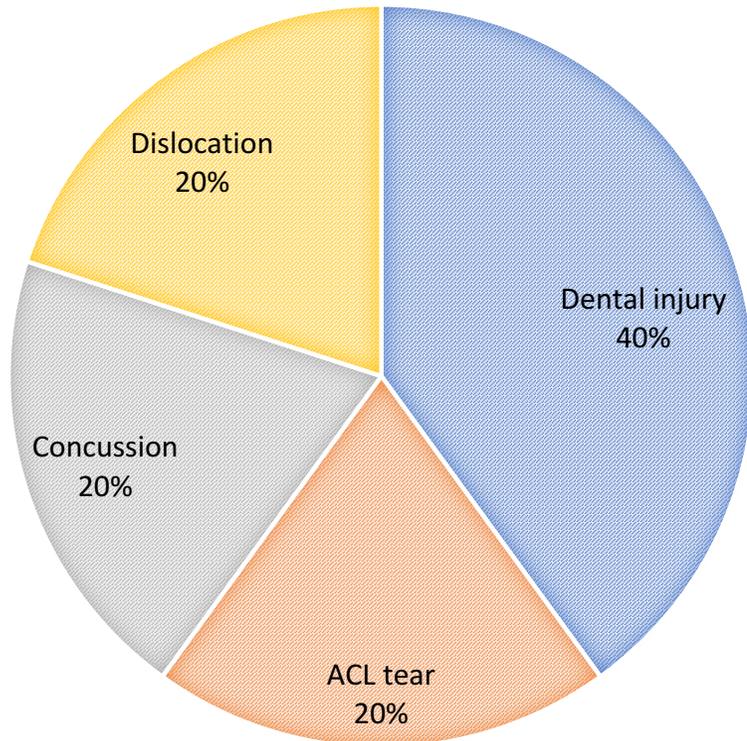
NONE



3171/3194 cases unknown diagnosis

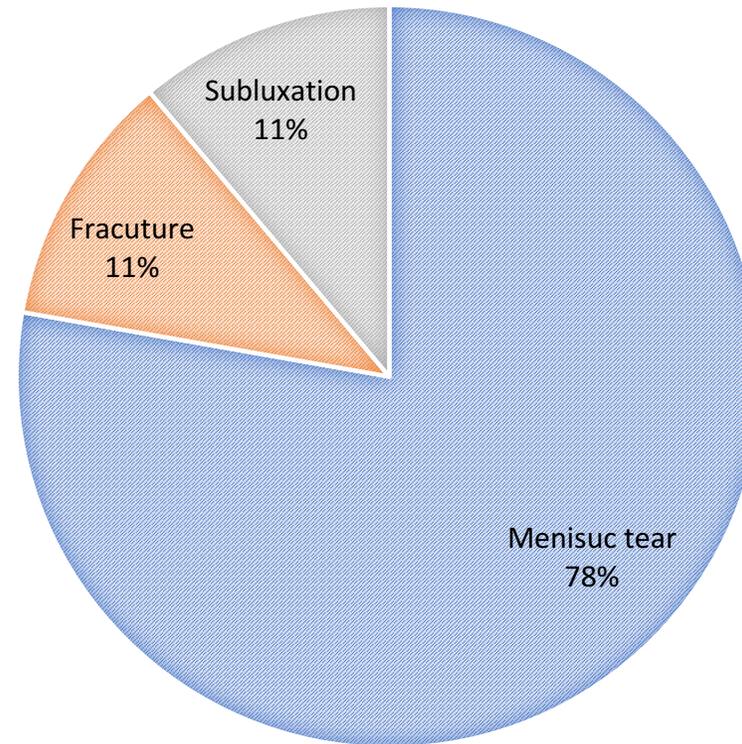
Analysis by Service: Injection

FULL TIME



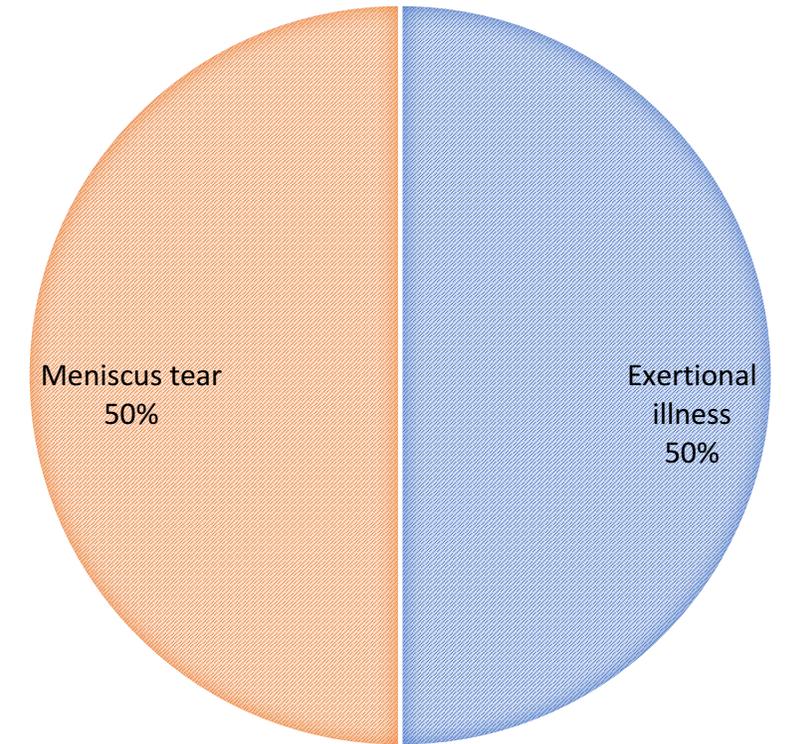
550/555 cases unknown diagnosis

PART TIME



278/287 cases unknown diagnosis

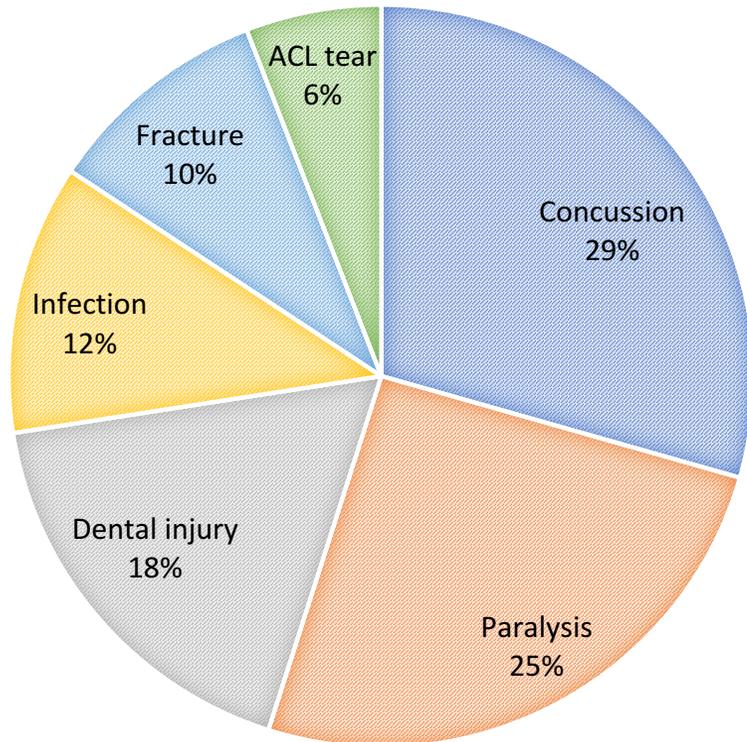
NONE



336/340 cases unknown diagnosis

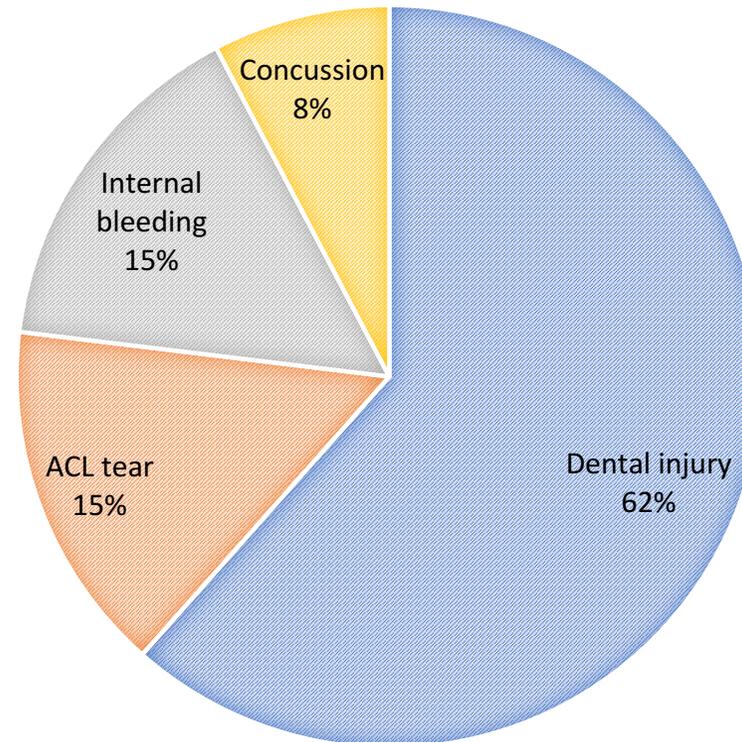
Analysis by Service: Prescription

FULL TIME



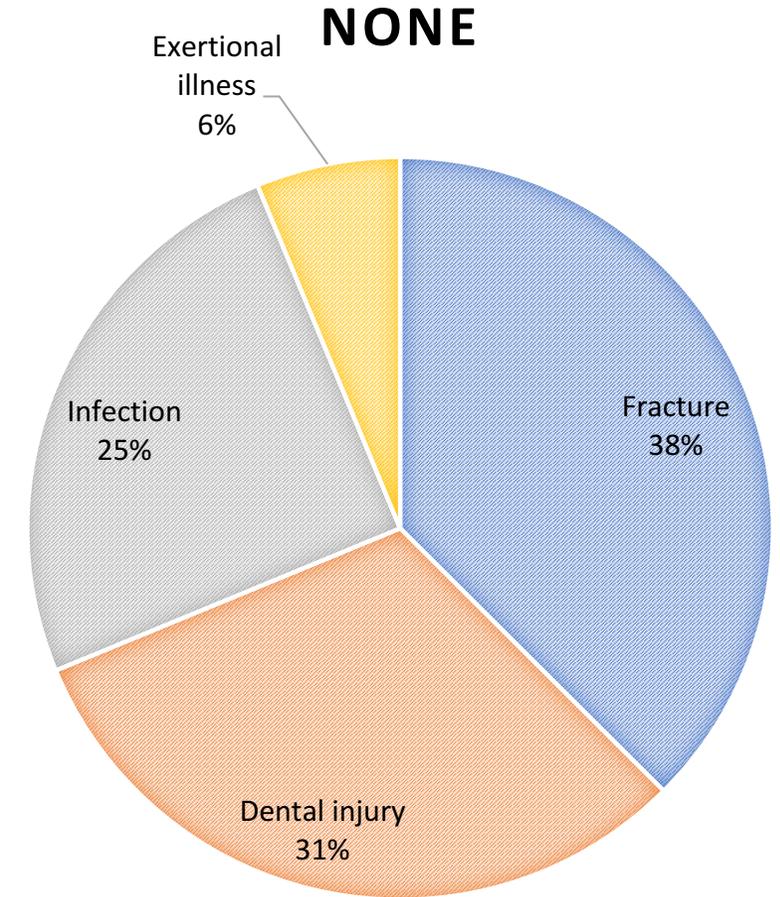
666/717 cases unknown diagnosis

PART TIME



280/293 cases unknown diagnosis

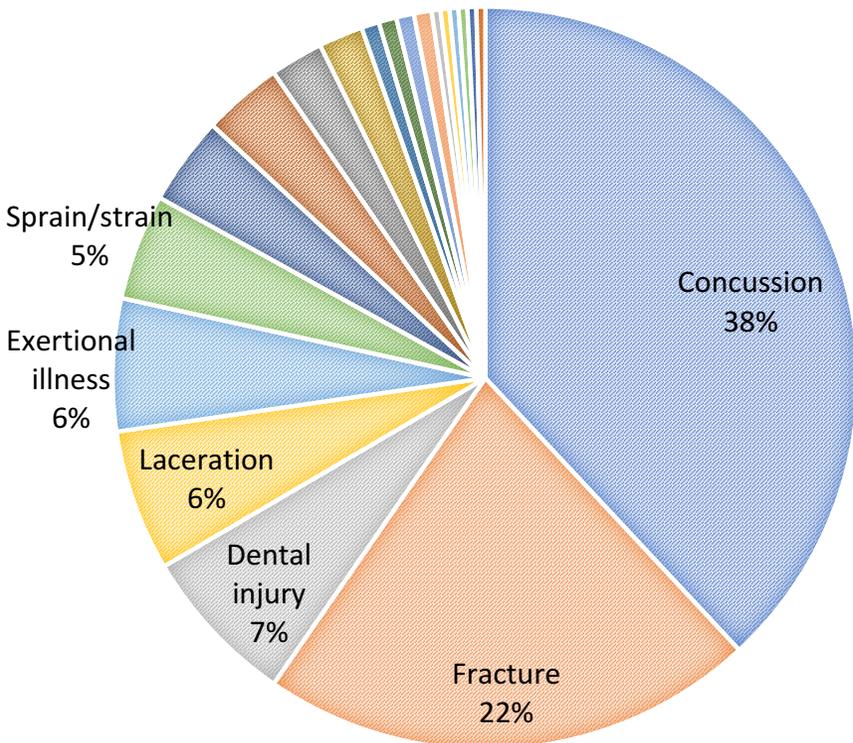
NONE



627/643 cases unknown diagnosis

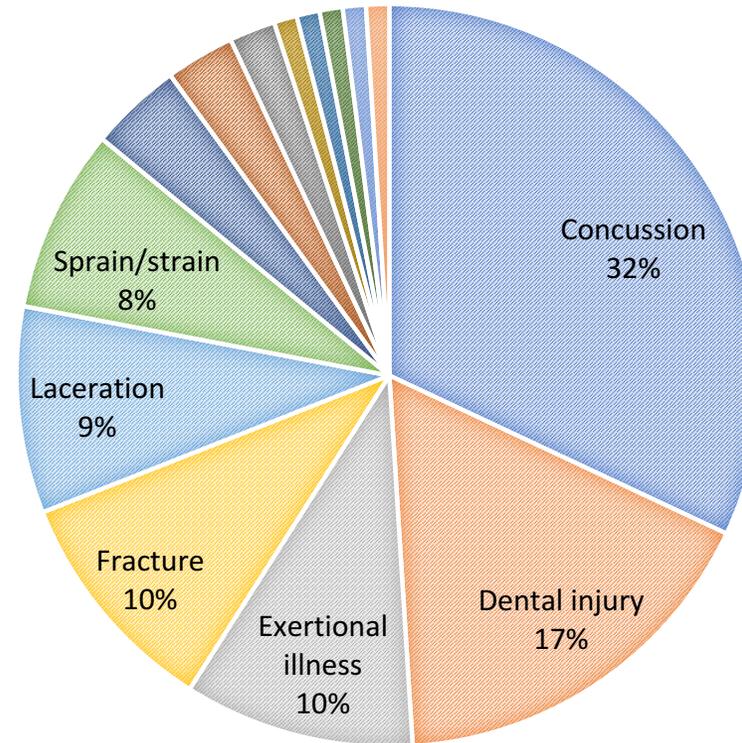
Analysis by Service: Outpatient

FULL TIME



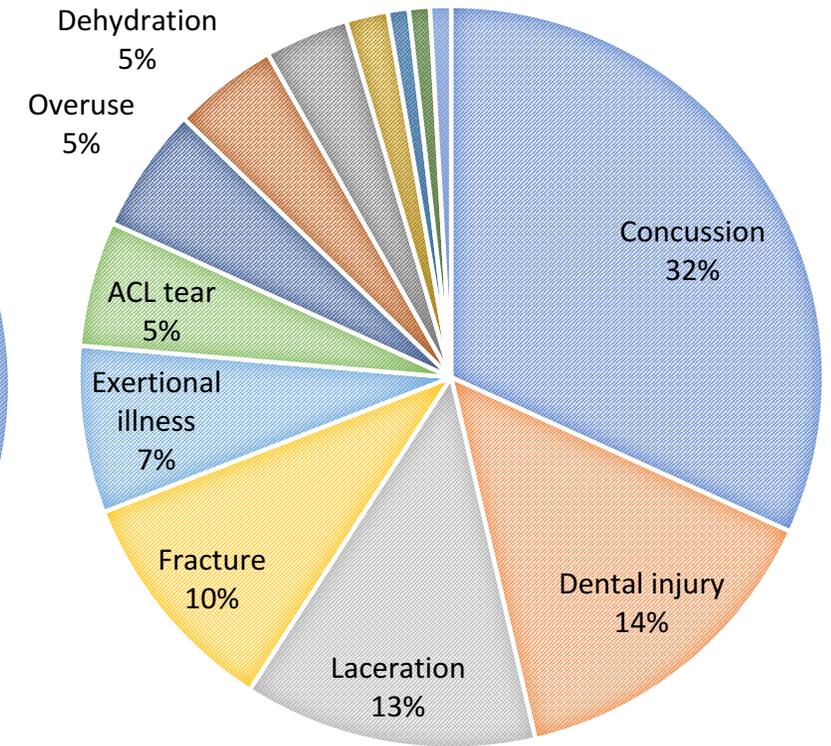
6858/7118 cases unknown diagnosis

PART TIME



2016/2116 cases unknown diagnosis

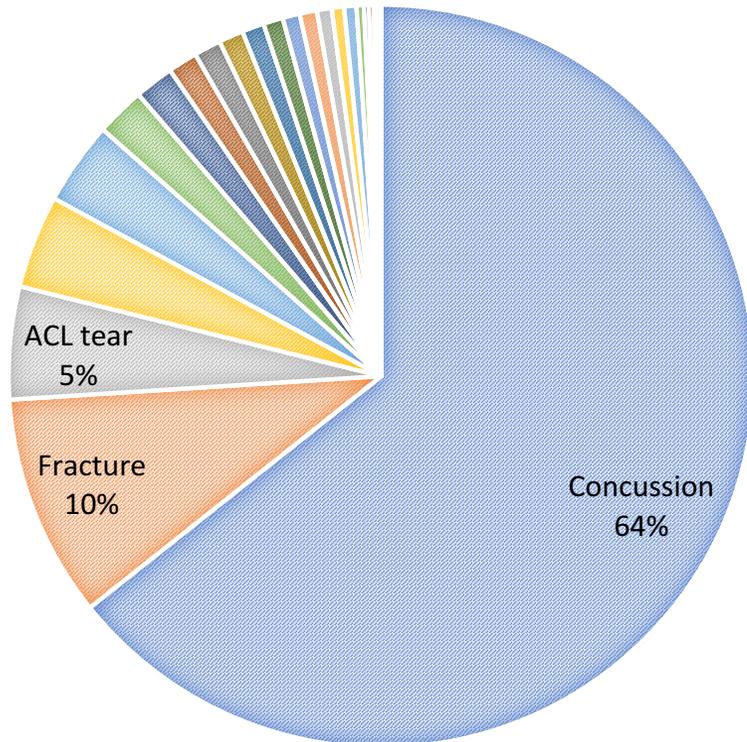
NONE



2942/3052 cases unknown diagnosis

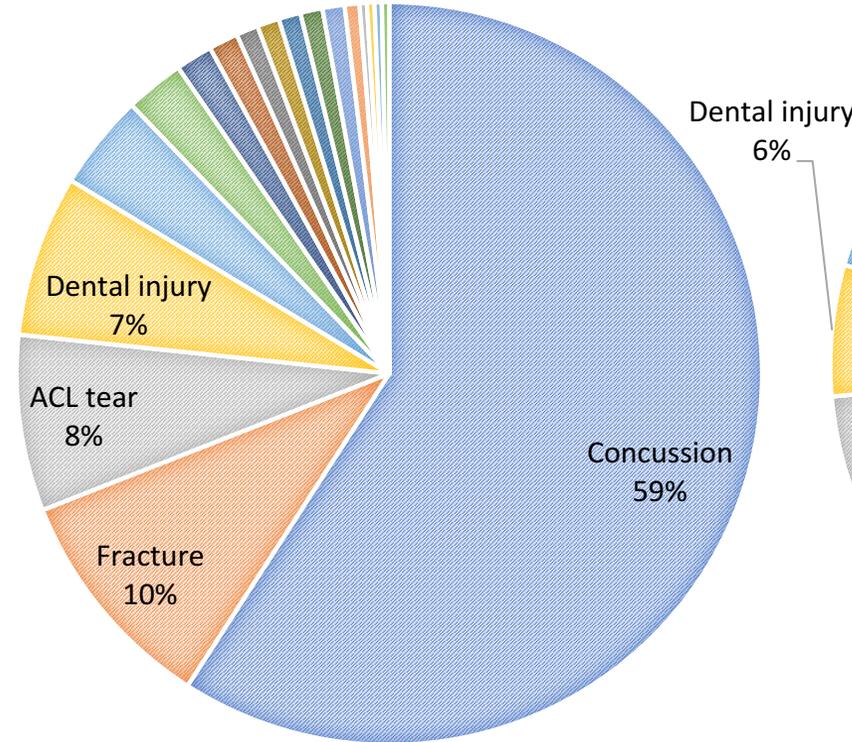
Analysis by Service: Physician

FULL TIME



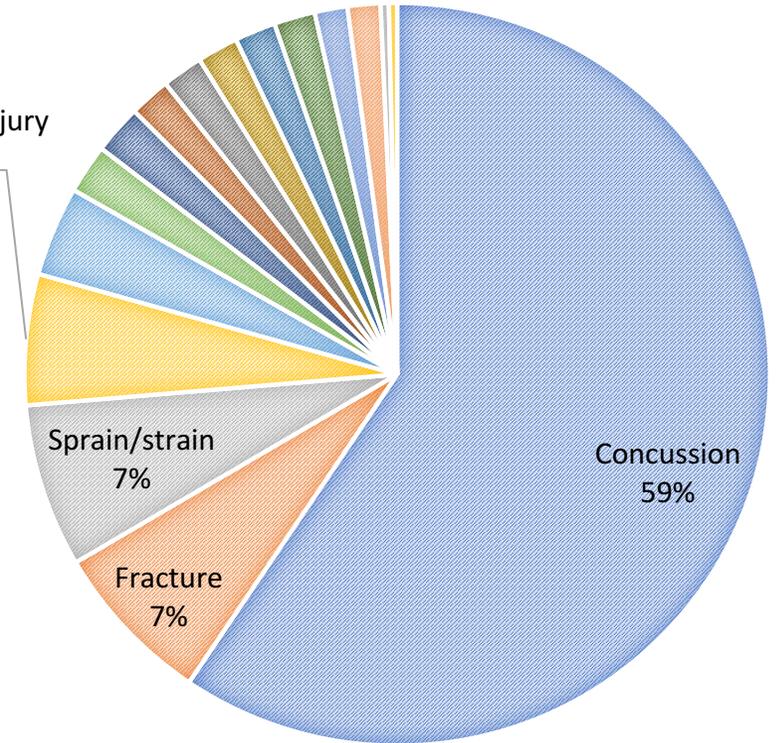
24727/25665 cases unknown diagnosis

PART TIME



9977/10290 cases unknown diagnosis

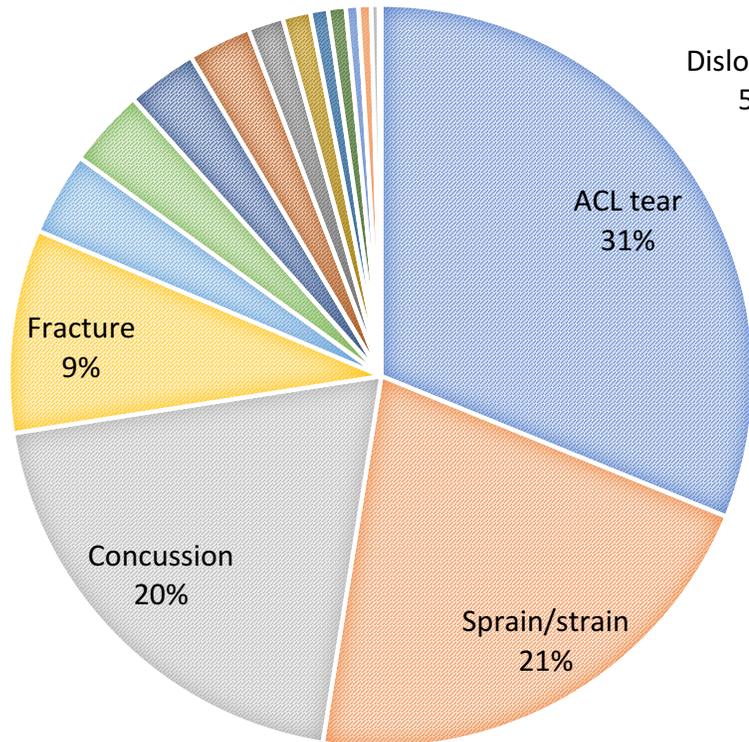
NONE



13647/13928 cases unknown diagnosis

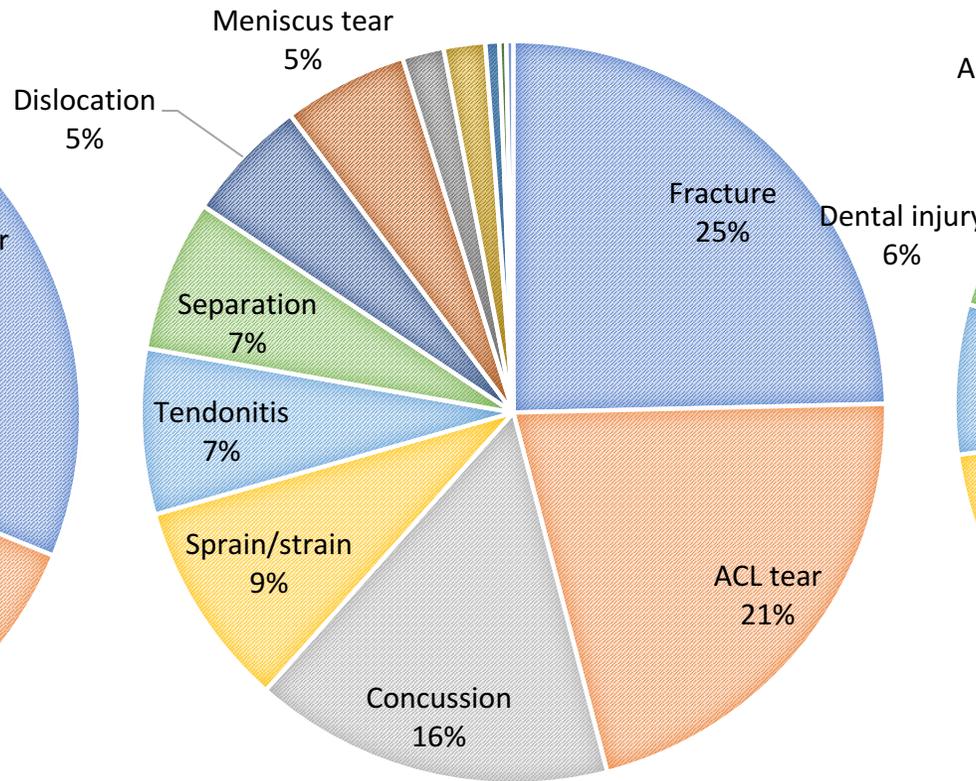
Analysis by Service: Rehabilitation/ Treatment

FULL TIME



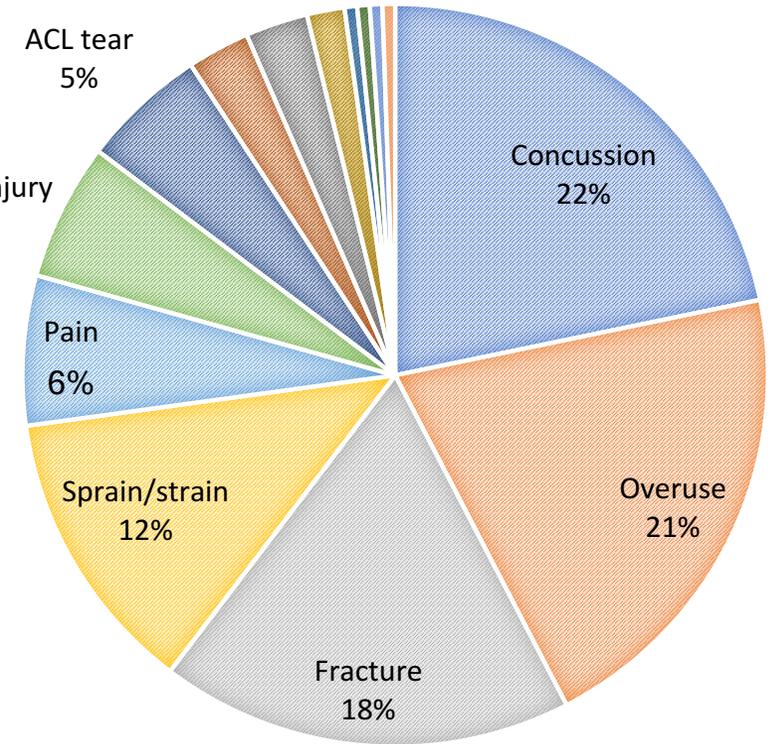
46044/46958 cases unknown diagnosis

PART TIME



17052/17385 cases unknown diagnosis

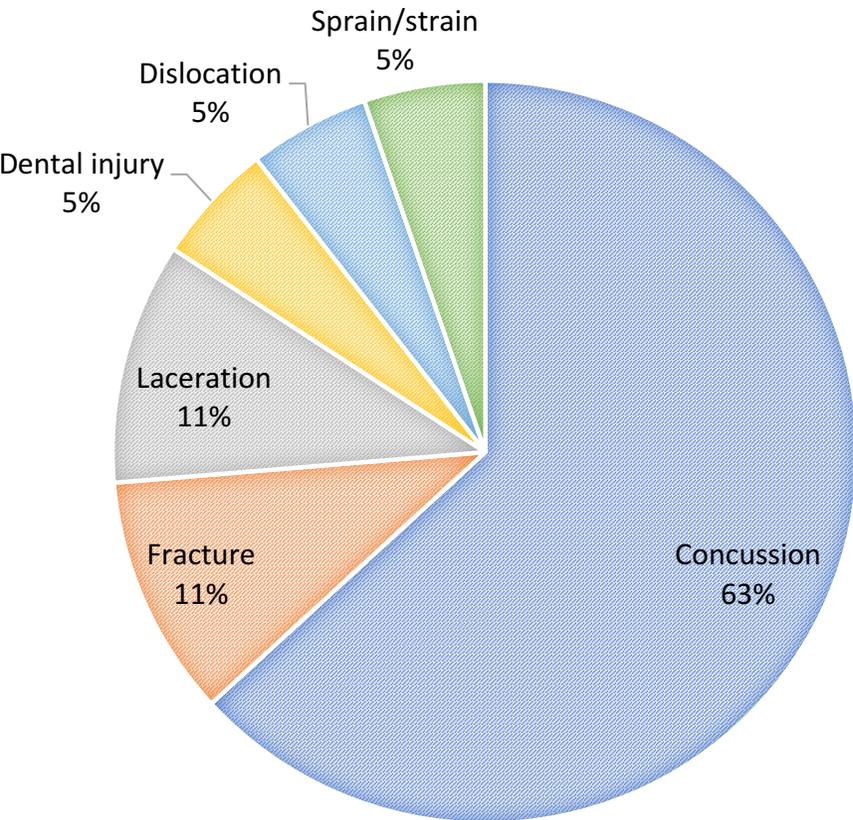
NONE



30940/31124 cases unknown diagnosis

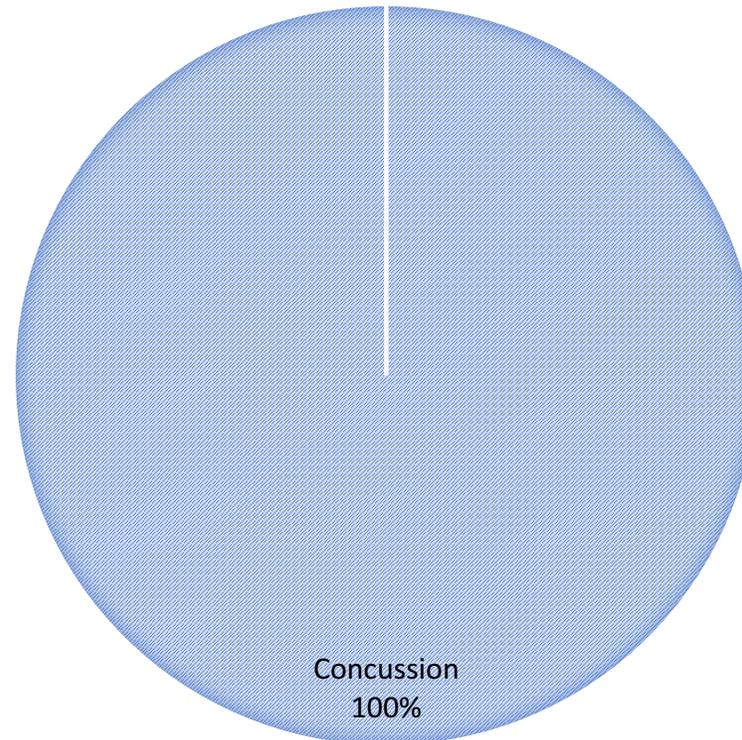
Analysis by Service: Specialist Consultation

FULL TIME



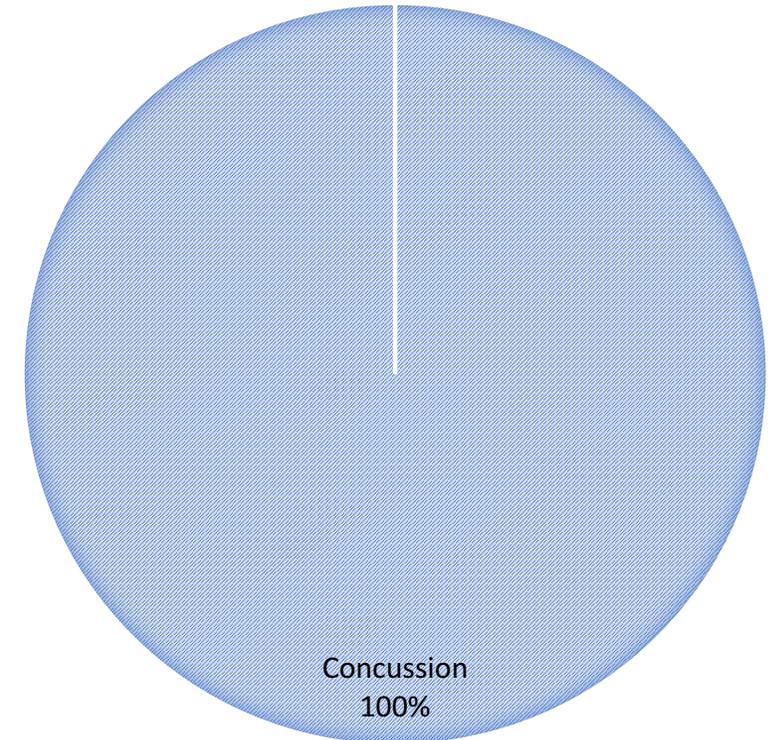
524/543 cases unknown diagnosis

PART TIME



32/37 cases unknown diagnosis

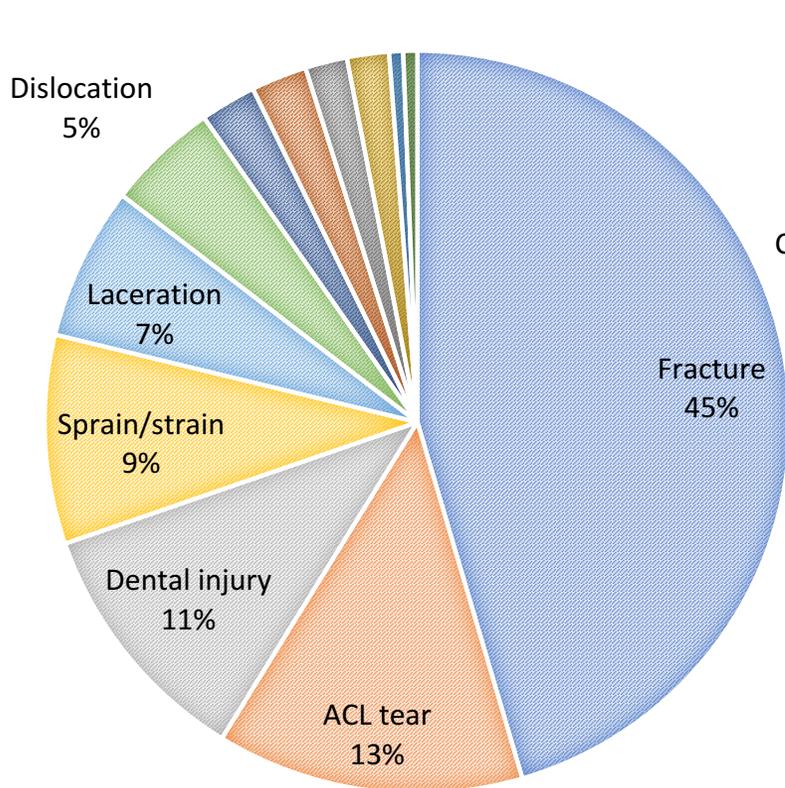
NONE



104/105 cases unknown diagnosis

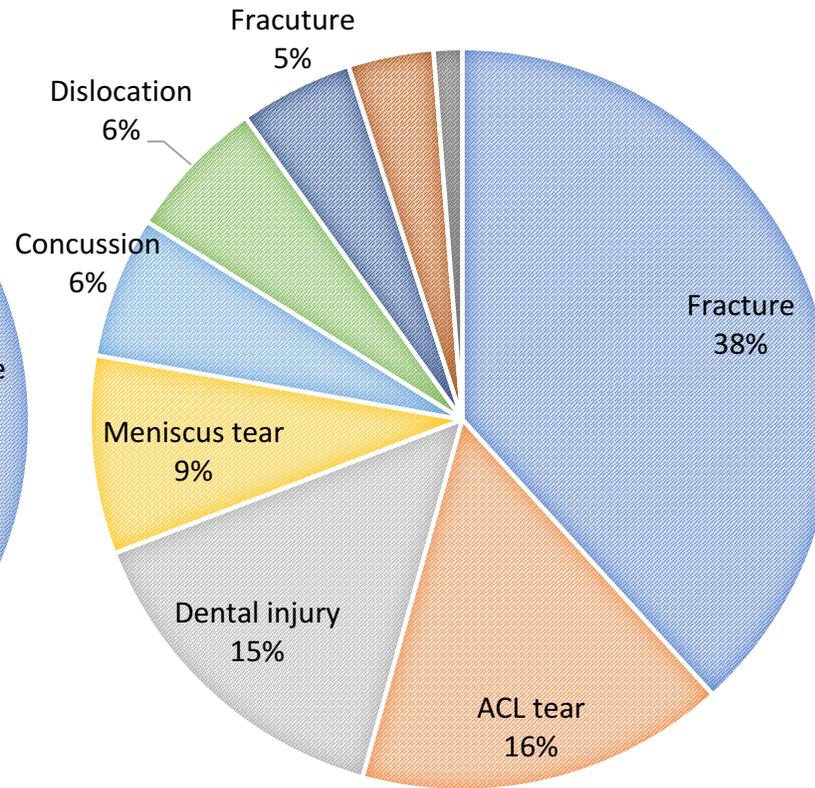
Analysis by Service: Surgery

FULL TIME



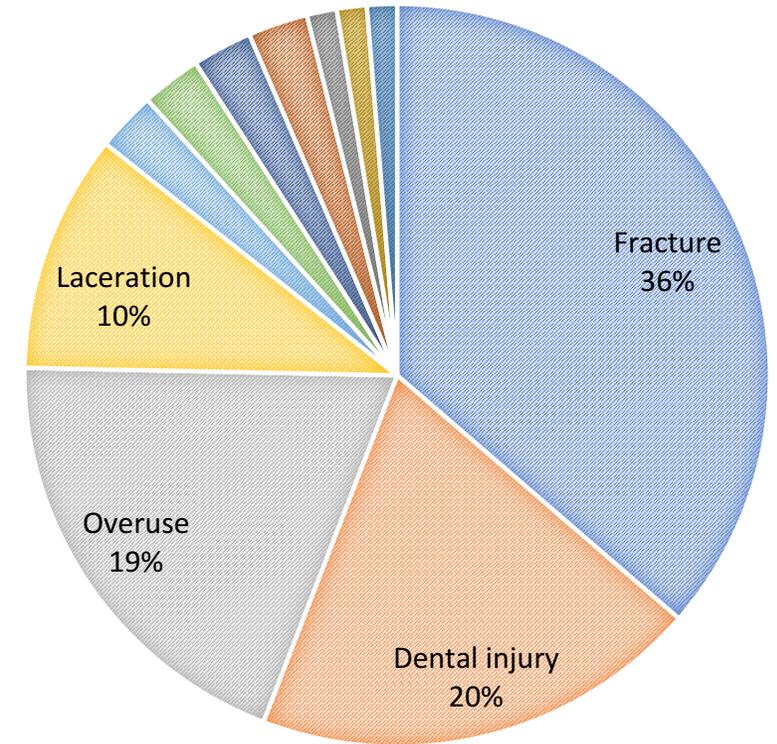
7359/7524 cases unknown diagnosis

PART TIME



3395/3476 cases unknown diagnosis

NONE



4952/5029 cases unknown diagnosis