

Micromobility: From Injury to Coding

R. Jonathan Robitsek, Ph.D.

Research Director

Department of Surgery

Jamaica Hospital Medical Center

Director of Research Education and Innovation

Medisys Health Network

jrobitse@jhmc.org

718.206.7173

What is a Level 1 Trauma Center?

- Hospital equipped to handle critically injured patients
- Requires verification by the American College of Surgeons & State DOH
 - Surgical coverage 24/7 from multiple services
 - Minimum of 1200 trauma patients per year
 - Research requirement
 - Residency training requirement
- Participation in Trauma Quality Improvement Project (*TQIP*)
- Patient data submitted quarterly to National Trauma Data Bank (*NTDB*)
- Patient data submitted quarterly to NYS Trauma Program
- NTDB Data Dictionary sets the standard as to the recorded data elements

https://www.health.ny.gov/professionals/ems/state_trauma/

<https://www.facs.org/quality-programs/trauma/>

<https://www.facs.org/quality-programs/trauma/quality/national-trauma-data-bank/>

When 911 is called, the data collection begins...

Prehospital Care Report Summary

FDNY
9 MetroTech Center, 7th Floor, Brooklyn, NY 11201

Date: 07/15/2021 Call #: 1927 Booklet: 87438972 Branch: ST50A Time Zone: GMT-05:00 Eastern

Call Information: # Patients Transported: _____
Billing Disposition: Treated/Transported (10-82)
Deceased Patient: Not Applicable
Assist: Not Applicable
Initial Patient Acuity: Potentially Unstable
Unit #: 51E2 - 51E Tour 2, Ground-Ambulance - BLS **Trip Type:** Initial Trip
Run Type to Scene: Emergent (Immediate Response)
Incident Facility: _____
Incident Location: _____
Incident Location Type: Street/Hwy _____

Receiving Facility: 34 - Jamaica Medical Center (Hospital) - 8900 Van Wyck Expressway - Jamaica, NY 11418
Facility Address: 8900 Van Wyck Expressway - Jamaica, NY 11418
Registration #: N/A
Destination Type: Hospital Emergency Department
Dest. Reason: Medical Protocol
Hospital Capability: Trauma Center Level 1
Condition of Patient At Destination: Improved
Specialty Center Reason: Criteria
Online Medical Control
Authorization Type: Protocol

Loaded Mileage: 2.6 (Total Mileage: 2.6)
Crew Members: _____

Call Received: 12:05:38
Dispatched: 12:05:58
En Route: 12:06:12
At Staging Area: _____
On Scene: 12:09:34
Patient Contact: 12:09:34
Transfer of EMS: _____
Patient Care: _____
Left Scene: 12:22:36
At Destination: 12:34:58
Destination Patient: _____
Transfer of Care: 12:53:16
In Service: 13:18:49

Time On Scene: 13 Min
Time to Destination: 29 Min
Total Time of Run: 73 Min

Assessments:

Time	Employee	Type	Summary
12:09:34	ABC	ABC	Airway: General: Patent: Yes Breathing: Rate: Normal: Yes Quality: Unlabored: Yes Lung Sounds: Left: Clear: Yes Lung Sounds: Right: Clear: Yes Circulation: General: Normal: Yes Skin Capillary Refill: Normal Skin Color: Normal: Yes Skin Temperature: Normal: Yes Skin Condition: Normal: Yes
12:09:34	Injury	Injury	Injury - Head Location Modifier: Injury: Swelling Injury Modifier: Comments: back of the head
12:09:34	Injury	Injury	Injury - Knee - Right Location Modifier: Injury: Bleeding Controlled Injury Modifier: Comments: lacerations to inner knee
12:09:34	Injury	Injury	Injury - Head Location Modifier: Injury: Laceration Injury Modifier: Comments: forehead

Clinical:

Onset Date/Time: 07/15/21 12:05:38
Dispatch Reason (EMD): PEDSTR PEDSTR - Pedestrian Struck
Medical Need: _____
Chief Complaint (Primary): hit by electric motorcycle Duration: 1 Hours
Anatomic Location: General/Global
Provider Impression: Trauma Injury
Was this event weather related?: No
Mechanism of Injury: MVA To Pedestrian
Alcohol/Drug Use Indicators: None Reported
Protocol 1: _____ **Protocol 2:** _____

...and continues, from the ED to discharge

INITIAL ASSESSMENT

MRN: _____

A AIRWAY

B BREATHING

C CIRCULATION

D NEUROLOGICAL EFFECTS

E EXPOSE PATIENT

F FILL SET OF VITALS

G GIVE COMFORT

H HEAD TO TOE

I INSPECT BACK

LEVEL OF CONSCIOUSNESS

PUPILS

EXTREMITY MOVEMENT

REASON COMA DATA

PART OF THE MEDICAL RECORD Page 2 of 4

MRN: _____

E EXPOSE PATIENT

F FILL SET OF VITALS

G GIVE COMFORT

H HEAD TO TOE

I INSPECT BACK

INTAKE AND OUTPUT

TOTAL INTAKE AND OUTPUT

PART OF THE MEDICAL RECORD Page 3 of 4

TRAUMA SURGERY ACTIVATION NOTE

Time Called: 23:48
Time Arrived: 23:48
Time Seen: 23:51

Mechanism: scooter collision

HPI: 41 y.o. male with no significant PMSH presents as a level 2 trauma activation. Patient was intoxicated while driving an electric scooter, which he crashed. + HS. Unknown LOC, GCS15 (E4 V5 M6) in trauma bay. - ASA, - ADP receptor inhibitor, - anticoagulation. **Primary survey intact. Secondary survey notable for superficial abrasions of the left face.**

In the trauma bay, CXR is grossly negative. FAST negative.

Admission Diagnoses: Fall, initial encounter [W19.XXXA]
 Closed fracture of left tibial plateau, initial encounter [S82.142A]
 Pain in left lower leg [M79.66Z]
 Closed fracture of proximal end of left tibia, unspecified fracture morphology, initial encounter [S82.102A]
 Open fracture of left tibial plateau [S82.142B]
 Closed bicondylar fracture of left tibial plateau [S82.142A]
 Compartment syndrome [T79.A0XA]

Discharge Diagnoses: L knee schatzker VI fracture/dislocation ,compartment syndrome

Admission Condition: stable

Discharged Condition: stable

Indication for Admission/Presentation: presenting with L knee pain after fall from scooter. Patient reports that she hit a crack in the sidewalk, landing directly on her L leg.

No fever/chills. Denies head trauma or loss of consciousness. Denies other injuries

Procedure Done: LEFT LEG IRRIGATION AND DEBRIDEMENT, wound 7/1/21 closure, 6/25/21 LEFT LEG FASCIOTOMY 2) EXTERNAL FIXATION OF TIBIA/FIBULA LEFT LEG



The trauma registry I

- Trauma centers must maintain a **trauma registry** of all patients that meet NTDB inclusion criteria
- Require at least 0.5 FTE registry staff for every 200 to 300 annual patient entries in the registry
- Trauma registrars highly trained; multiple certifications necessary; many have RN
- Use multiple sources of information & data from the EMR to capture required elements
- ICD10 codes are a primary source of information

Trauma-specific ICD10 codes

Sub-Chapter	Start	Stop
Injuries To The Head	S00	S09
Injuries To The Neck	S10	S19
Injuries To The Thorax	S20	S29
Injuries To The Abdomen, Lower Back, Lumbar Spine, Pelvis And External Genitals	S30	S39
Injuries To The Shoulder And Upper Arm	S40	S49
Injuries To The Elbow And Forearm	S50	S59
Injuries To The Wrist, Hand And Fingers	S60	S69
Injuries To The Hip And Thigh	S70	S79
Injuries To The Knee And Lower Leg	S80	S89
Injuries To The Ankle And Foot	S90	S99
Injuries Involving Multiple Body Regions	T07	T07
Injury Of Unspecified Body Region	T14	T14
Certain Early Complications Of Trauma	T79	T79

External causes of morbidity ICD10 codes

Sub-Chapter	Start	Stop
Pedestrian Injured In Transport Accident	V00	V09
Pedal Cycle Rider Injured In Transport Accident	V10	V19
Motorcycle Rider Injured In Transport Accident	V20	V29
Occupant Of Three-Wheeled Motor Vehicle Injured In Transport Accident	V30	V39
Car Occupant Injured In Transport Accident	V40	V49
Occupant Of Pick-Up Truck Or Van Injured In Transport Accident	V50	V59
Occupant Of Heavy Transport Vehicle Injured In Transport Accident	V60	V69
Bus Occupant Injured In Transport Accident	V70	V79
Other Land Transport Accidents	V80	V89
Water Transport Accidents	V90	V94
Air And Space Transport Accidents	V95	V97
Other And Unspecified Transport Accidents	V98	V99
Slipping, Tripping, Stumbling And Falls	W00	W19
Exposure To Inanimate Mechanical Forces	W20	W49
Exposure To Animate Mechanical Forces	W50	W64
Accidental Non-Transport Drowning And Submersion	W65	W74
Exposure To Electric Current, Radiation And Extreme Ambient Air Temperature And Pressure	W85	W99
Exposure To Smoke, Fire And Flames	X00	X08
Contact With Heat And Hot Substances	X10	X19
Exposure To Forces Of Nature	X30	X39
Overexertion And Strenuous Or Repetitive Movements	X50	X50
Accidental Exposure To Other Specified Factors	X52	X58
Intentional Self-Harm	X71	X83
Assault	X92	Y09
Event Of Undetermined Intent	Y21	Y33
Legal Intervention, Operations Of War, Military Operations, And Terrorism	Y35	Y38
Supplementary Factors Related To Causes Of Morbidity Classified Elsewhere	Y90	Y99

The trauma registry II

Demographics

PATIENT INFORMATION

Recorded By: Recorder Start Date: Trauma Registry #: 45663 (NEW45663) Med Rec #: Account #: Exclusion?: SSN: Last Name: First Name: Mid Init: TraumaAlias Last Name: TraumaAlias First Name: (ARRIVAL DATE): (DATE OF BIRTH): (AGE): (UNITS): (SEX): (RACE): (ETHNICITY): (PRIMARY TRAUMA SERVICE TYPE): Address 1: 2nd Address: Phone #: () - ZIP CODE OF RESIDENCE: (CITY): (COUNTY): (STATE): (COUNTRY): (ALT RESIDENCE):

Crash Details

INCIDENT

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (INJURY DATE): (TIME): (LOCATION ICD10): Injury Type: (ZIP OF INCIDENCE): (CITY): (COUNTY): (STATE): (COUNTRY): Care in progress: (REPORT OF PHYSICAL ABUSE?): (INVESTIGATION OF PHYSICAL ABUSE?): (IE-CODE): CDC - MOI: CDC - Intent: (PROTECTIVE DEVICES USED): (CHILD SPECIFIC RESTRAINT): (AIRBAG DEPLOYMENT): Injury Comments: (WORK RELATED?): (OCCUPATION): (OCCUPATIONAL INDUSTRY): Fall Height: Edication Performed? Min.:

EMS Data/Treatments

PREHOSP INFO TO YOUR FACILITY

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (TRANSPORT MODE): PCR?: PCR #: Agency: Lt. of Certification: (DATE DISPATCHED): (TIME DISPATCHED): (DATE-ARRIVED AT SCENE): (TIME-ARRIVED AT SCENE): (DATE-DEPARTED SCENE): (TIME-DEPARTED SCENE): Date-Arrived Hospital: Time: Response Time (mins): Scene Time (mins): Transport Time (mins): Prehospital Cardiac Arrest: Treatment Details: PCR Form#: (EOL): (MR): (MR): (SCS): (SCS Qual): (RTS): (TRAUMA CENTER CRITERIA): (GENTRIAB, PERESTRIAM, OR): Prehospital Info - Other (e.g. first responder): Prehospital Info to Referring Hospital:

ED Data/Treatments

ED

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (Direct Admit?): Arrival From: (ARRIVAL SIGNS OF LIFE): (ARRIVAL TIME): (ORDER DATE): (ORDER TIME): Order LOS: (DISCHARGE DATE): (DISCHARGE TIME): LOS (mins): Order/Discharge LOS: Admit Service: Admit Physician: (ED DISPOSITION): Next Trauma Phase: Hospital PFI No.: Date: Time: (PULSE): (RR): (RR ASSISTANCE): (O2 SAT): (SUPPL O2): (SBP): (DBP): (EO): (NR): (NR): (SCS): (SCS QUAL): (RTS): (TEMP): (IN): Weight: in: Height: in: BMI: Treatment Details: Radiology Details: ED Additional Comments:

Alcohol/Drug Testing

LABS

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (ALCOHOL SCREEN RESULTS): (ALCOHOL SCREEN): Alcohol Intention?: Pass/Fail: Drug Use Indicator: (DRUG SCREEN):

Hospital Flow/Complications

INPATIENT DETAILS

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: In-Patient Location Details: (ICU LOS (DAYS)): Non-Injury Complications: (ICU LOS (DAYS)): (ICU LOS): (Complications): (Non-Injury ICD10 Dx Text):

Procedures Performed

PROCEDURES

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (Proc. #): (DATE): (TIME): Non-ICD10 Proc. #: (ICD10): Procedure ICD10 Text: Massive Transfusion Protocol: Time to 1st OR Visit (mins.): OR Dispo.: Amt (0-24 hr): PRBC: Plasma: Pts: Cryo: V/A: Cell saver: Amt (24-72 hr): Amt (72+): Amt (TOTAL):

Injuries; Comorbidities (ICD10 codes)

INJURIES

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (ICD10): IIS-2005/08: Injury ICD10 Dx Text: (SEV): (BODY REG): Head/Neck: Face: Chest: Abdomen/Pelvis: Extremities: External: Recalc ISS: ISS: New ISS: Probability of Survival: (CO-MORBIDITIES): Co-morbidities Long Text: (Anticoagulation Medications):

Discharge Details

HOSPITAL DISCHARGE/FINANCIAL

Last Name: First Name: Arrival Date: Trauma Reg #: 45663 Med Rec #: (Date of Hosp Exit): (Time of Hosp Exit): LOS (DAYS): (ORDER DATE): (ORDER TIME): Order LOS: (DISCHARGE DISPO): (CAREGIVER AT DVC): (CIC Service): Live/Die: Transfer to Other Hospital: Discharge to Hospice?: Died: (Intub. Date): (Extub. Date): (Start Vent Date): (End Ventilator Date): (Rent Days): (TOTAL VENTILATOR SUPPORT DAYS): Patient Self-Exubate?: (PRIMARY PAYER): (SECONDARY PAYER): Discharge GCS Information: Eye Opening: Verbal Response: Motor Response: Glasgow Coma Score: (Phase): (Date): (Location): (Status): NTDB Patient?: State Patient?: Record Complete?: Record Complete Date: Date Completed By: Non-NTDB Edit Check: ITDX Offline Validation: NTDB Edit Check: 2014 NTDB, 2015 NTDB + TOP2016

Sometimes, there is a need for new ICD10 codes

- New diseases (i.e., COVID-19)
- Novel causes of injury
- Novel procedures
- Updated annually in October and April



ICD-10 Coordination and Maintenance Committee Meeting
September 10-11, 2019
Diagnosis Agenda
Part 2 of 2

Welcome and announcements
Donna Pickett, MPH, RHIA
Co-Chair, ICD-10 Coordination and Maintenance Committee

Diagnosis Topics:

Contents

Cytokine Release Syndrome (CRS)	12
Cheryl Bullock	
Jugna Shah, MPH, CHRI	
President and Founder, Nimitt Consulting	
Electric Scooter and Other Micro-Mobility Devices	15
Shannon McConnell-Lamptey	
Douglas J.E. Schuerer, MD, FACS	
American College of Surgeons Committee on Trauma	
Director of Trauma, Barnes Jewish Hospital	
Professor of Surgery, Washington University in St. Louis	

Propose the reason for the new codes

ICD-10 Coordination and Maintenance Committee Meeting
September 10-11, 2019

Electric Scooter and Other Micro-Mobility Devices

The American College of Surgeons Committee on Trauma, Atrium Health, UNC Highway Safety Research Center, and the Vision Zero San Francisco Injury Prevention Research Collaborative are proposing capture of electric scooters (e-scooters) as “pedestrian conveyances” (V00-V09), as they are closest in form and function to other types of transportation in which the rider is standing and maintains a high center of gravity (e.g. skateboard and rollerblades). Compared to motorcycle riders, e-scooter riders stand rather than sit, travel at lower speeds (15-20 MPH versus >30 MPH), and may operate their vehicles in a variety of spaces (sidewalks, bike lanes, streets versus in-street only). Additionally, at under 50 pounds, e-scooters are considered “ultralight” roadway devices and are not regulated as motorcycles by most transportation departments.

We feel that due to the widespread media attention surrounding injuries related to e-scooters and other micro-mobility devices (particularly in communities with rideshares), clinicians will be familiar with these devices and will, therefore, document their involvement in the clinical notes. Studies have identified e-scooter injuries using keywords (“e-scooter”, “Lime”, “Bird”, etc.) present in the medical record and/or in syndromic surveillance data (e.g. chief complaint and triage note). Medical coders are already experienced in correctly classifying a wide range of transportation-related injuries using information documented by clinicians. Accurate injury surveillance is critical to the successful development, implementation and evaluation of prevention initiatives. Urban transportation’s rapidly expanding micro-mobility movement and escalating competition between rideshare companies.

The American College of Surgeons Committee on Trauma, Atrium Health, UNC Highway Safety Research Center, and the Vision Zero San Francisco Injury Prevention Research Collaborative are requesting the following new ICD-10-CM External cause codes to differentiate injuries related to e-scooters and other ultralight micro-mobility devices from injuries related to other types of pedestrian conveyances.

Approved! New codes for new modes

- 18 new subchapters added
- Total of 56 new ICD10 v-codes added
- Officially implemented 10/1/2020

No Change	Chapter 20
No Change	External causes of morbidity (V00-Y99)
No Change	Pedestrian injured in transport accident (V00-V09)
No Change	V00 Pedestrian conveyance accident
No Change	V00.0 Pedestrian on foot injured in collision with pedestrian conveyance
Add	V00.03 Pedestrian on foot injured in collision with standing micro-mobility pedestrian conveyance
Add	V00.031 Pedestrian on foot injured in collision with rider of standing electric scooter
Add	V00.038 Pedestrian on foot injured in collision with rider of other standing micro-mobility pedestrian conveyance
Add	Pedestrian on foot injured in collision with rider of hoverboard
Add	Pedestrian on foot injured in collision with rider of segway
No Change	V00.8 Accident on other pedestrian conveyance
Add	V00.84 Accident with standing micro-mobility pedestrian conveyance
Add	V00.841 Fall from standing electric scooter
Add	V00.842 Pedestrian on standing electric scooter colliding with stationary object
Add	V00.848 Other accident with standing micro-mobility pedestrian conveyance
Add	Accident with hoverboard
Add	Accident with segway
No Change	V01 Pedestrian injured in collision with pedal cycle
No Change	V01.0 Pedestrian injured in collision with pedal cycle in nontraffic accident
Add	V01.03 Pedestrian on standing micro-mobility pedestrian conveyance injured in collision with pedal cycle in nontraffic accident
Add	V01.031 Pedestrian on standing electric scooter injured in collision with pedal cycle in nontraffic accident
Add	V01.038 Pedestrian on other standing micro-mobility pedestrian conveyance injured in collision with pedal cycle in nontraffic accident
Add	Pedestrian on hoverboard injured in collision with pedal cycle in nontraffic accident
Add	Pedestrian on segway injured in collision with pedal cycle in nontraffic accident
No Change	V01.1 Pedestrian injured in collision with pedal cycle in traffic accident
Add	V01.13 Pedestrian on standing micro-mobility pedestrian conveyance injured in collision with pedal cycle in traffic accident
Add	V01.131 Pedestrian on standing electric scooter injured in collision with pedal cycle in traffic accident
Add	V01.138 Pedestrian on other standing micro-mobility pedestrian conveyance injured in collision with pedal cycle in traffic accident
Add	Pedestrian on hoverboard injured in collision with pedal cycle in traffic accident
Add	Pedestrian on segway injured in collision with pedal cycle in traffic accident

Micromobility Modes, New Codes!

Categorizing injuries related to emerging transportation.



e-Scooters

Keyword for Chief Complaint:
e-scooter + Brand
(Bird, Gotcha, Jump, Lime, Spin, Razor, etc.)



Other Devices

Keywords for Chief Complaint:
e-skateboard, e-hoverboard,
Segway®, e-unicycle

A rider on a micromobility device

falls on or strikes

a pedestrian

Pedestrian on foot injured in collision with standing micromobility conveyance

V00.03 (.031, .038)

a stationary object or the ground

Accident with standing micromobility pedestrian conveyance

V00.84 (.841, .842, .848)

A rider on a micromobility device

is struck by

a non-motorized vehicle (e.g. bicycle)

V01 and V06 (.03, .13, .93)

a motorized vehicle (e.g. car, bus)

V02, V03, V04 (.03, .13, .93)

a railway train

V05 (.03, .13, 93)

A few new codes for e-bikes

- Classify e-bicycles as “electric assisted bicycle”(V20-V29); implemented 10/1/2022

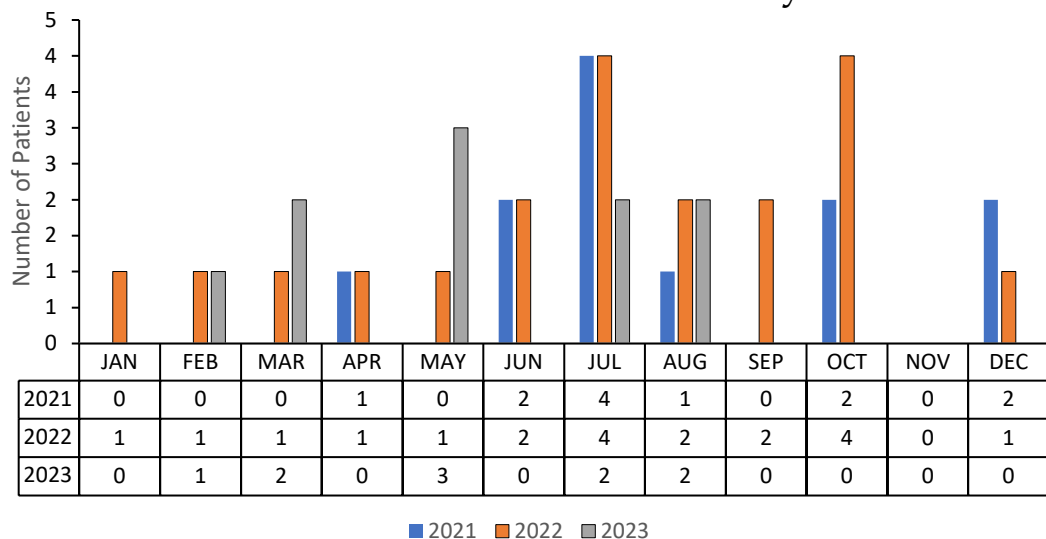
Add	-- e-bicycle - see Accident, transport, electric (assisted) bicyclist	Add	---- two wheeled motor vehicle (traffic) V22.91	Add	----- nontraffic V24.11
Add	-- e-bike - see Accident, transport, electric (assisted) bicyclist	Add	----- nontraffic V22.21	Add	----- car (traffic) V23.51
Add	-- electric (assisted) bicyclist V29.91	Add	----- while boarding or alighting V22.31	Add	----- nontraffic V23.11
Add	--- collision (with)	Add	----- van (traffic) V23.91	Add	----- motor vehicle NOS (traffic) V29.501
Add	---- animal (traffic) V20.91	Add	----- nontraffic V23.21	Add	----- nontraffic V29.101
Add	----- being ridden (traffic) V26.91	Add	----- while boarding or alighting V23.31	Add	----- specified type NEC (traffic) V29.591
Add	----- nontraffic V26.21	Add	--- driver	Add	----- nontraffic V29.191
Add	----- while boarding or alighting V26.31	Add	---- collision (with)	Add	----- pedal cycle (traffic) V21.51
Add	----- nontraffic V20.21	Add	----- animal (traffic) V20.41	Add	----- nontraffic V21.11
Add	----- while boarding or alighting V20.31	Add	----- being ridden (traffic) V26.41	Add	----- pedestrian
Add	----- animal-drawn vehicle (traffic) V26.91	Add	----- nontraffic V26.01	Add	----- nontraffic V20.11
Add	----- nontraffic V26.21	Add	----- nontraffic V20.01	Add	----- traffic V20.51
Add	----- while boarding or alighting V26.31	Add	----- animal-drawn vehicle (traffic) V26.41	Add	----- pickup truck (traffic) V23.51
Add	----- bus (traffic) V24.91	Add	----- nontraffic V26.01	Add	----- nontraffic V23.11
Add	----- nontraffic V24.21	Add	----- bus (traffic) V24.41	Add	----- railway vehicle (traffic) V25.51
Add	----- while boarding or alighting V24.31	Add	----- nontraffic V24.01	Add	----- nontraffic 25.11
Add	----- car (traffic) V23.91	Add	----- car (traffic) V23.41	Add	----- specified vehicle NEC (traffic) V26.51
Add	----- nontraffic V23.21	Add	----- nontraffic V23.01	Add	----- nontraffic V26.11
Add	----- while boarding or alighting V23.31	Add	----- motor vehicle NOS (traffic) V29.401	Add	----- stationary object (traffic) V27.51
Add	----- motor vehicle NOS (traffic) V29.601	Add	----- nontraffic V29.001	Add	----- nontraffic V27.11
Add	----- nontraffic V29.201	Add	----- specified type NEC (traffic) V29.491	Add	----- streetcar (traffic) V26.51
Add	----- specified type NEC (traffic) V29.691	Add	----- nontraffic V29.091	Add	----- nontraffic V26.11
Add	----- nontraffic V29.291	Add	----- pedal cycle (traffic) V21.41	Add	----- three wheeled motor vehicle (traffic) V22.51
Add	----- pedal cycle (traffic) V21.91	Add	----- nontraffic V21.01	Add	----- nontraffic V22.11
Add	----- nontraffic V21.21	Add	----- pedestrian	Add	----- truck (traffic) V24.51
Add	----- while boarding or alighting V21.31	Add	----- nontraffic V20.01	Add	----- nontraffic V24.11
Add	----- pedestrian V20.91	Add	----- traffic V20.41	Add	----- two wheeled motor vehicle (traffic) V22.41
Add	----- nontraffic V20.01	Add	----- pickup truck (traffic) V23.41	Add	----- nontraffic V22.01
Add	----- while boarding or alighting V20.31	Add	----- nontraffic V23.01	Add	----- van (traffic) V23.41
Add	----- pickup truck (traffic) V23.91	Add	----- railway vehicle (traffic) V25.41	Add	----- nontraffic V23.01
Add	----- nontraffic V23.21	Add	----- nontraffic V25.01	Add	----- noncollision accident (traffic) V28.41
Add	----- while boarding or alighting V23.31	Add	----- specified vehicle NEC (traffic) V26.41	Add	----- nontraffic V28.01
Add	----- railway vehicle (traffic) V25.91	Add	----- nontraffic V26.01	Add	--- noncollision accident (traffic) V28.91
Add	----- nontraffic V25.21	Add	----- stationary object (traffic) V27.41	Add	--- nontraffic V28.21
Add	----- while boarding or alighting V25.31	Add	----- nontraffic V27.01	Add	--- while boarding or alighting V28.31
Add	----- specified vehicle NEC (traffic) V26.91	Add	----- streetcar (traffic) V26.41	Add	--- nontraffic V29.31
Add	----- nontraffic V26.21	Add	----- nontraffic V26.01	Add	--- passenger
Add	----- while boarding or alighting V26.31	Add	----- three wheeled motor vehicle (traffic) V22.41	Add	--- collision (with)
Add	----- stationary object (traffic) V27.91	Add	----- nontraffic V22.01	Add	----- animal (traffic) V20.51
Add	----- nontraffic V27.21	Add	----- truck (traffic) V24.41	Add	----- being ridden (traffic) V26.51
Add	----- while boarding or alighting V27.31	Add	----- nontraffic V24.01	Add	----- nontraffic V26.11
Add	----- streetcar (traffic) V26.91	Add	----- two wheeled motor vehicle (traffic) V22.41	Add	----- nontraffic V20.11
Add	----- nontraffic V26.21	Add	----- nontraffic V22.01	Add	----- animal-drawn vehicle (traffic) V26.51
Add	----- while boarding or alighting V26.31	Add	----- van (traffic) V23.41	Add	----- nontraffic V26.11
Add	----- three wheeled motor vehicle (traffic) V22.91	Add	----- nontraffic V23.01	Add	----- bus (traffic) V24.51
Add	----- nontraffic V22.21	Add	----- noncollision accident (traffic) V28.41	Add	
Add	----- while boarding or alighting V22.31	Add	----- nontraffic V28.01	Add	
Add	----- truck (traffic) V24.91	Add	--- noncollision accident (traffic) V28.91	Add	
Add	----- nontraffic V24.21	Add	--- nontraffic V28.21	Add	
Add	----- while boarding or alighting V24.31	Add	--- while boarding or alighting V28.31	Add	
		Add	--- nontraffic V29.31	Add	
		Add	--- passenger	Add	
		Add	--- collision (with)	Add	
		Add	----- animal (traffic) V20.51	Add	
		Add	----- being ridden (traffic) V26.51	Add	
		Add	----- nontraffic V26.11	Add	
		Add	----- nontraffic V20.11	Add	
		Add	----- animal-drawn vehicle (traffic) V26.51	Add	
		Add	----- nontraffic V26.11	Add	
		Add	----- bus (traffic) V24.51	Add	

https://ftp.cdc.gov/pub/HEALTH_STATISTICS/NCHS/Publications/ICD10CM/2023/icd10cm-addendum-2023.zip



First three years of new codes: Trauma patients @ JHMC

Rider on Micromobility Falls or Strikes: Pedestrian or Object

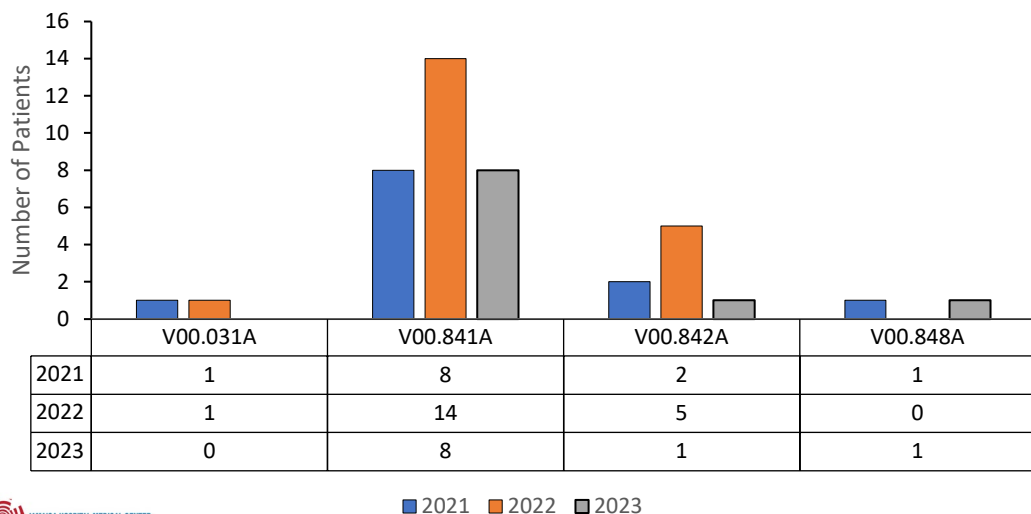


V00.031: Pedestrian on foot injured in collision with rider of standing electric scooter

V00.841: Fall from standing electric scooter

V00.842: Pedestrian on standing electric scooter colliding with stationary object

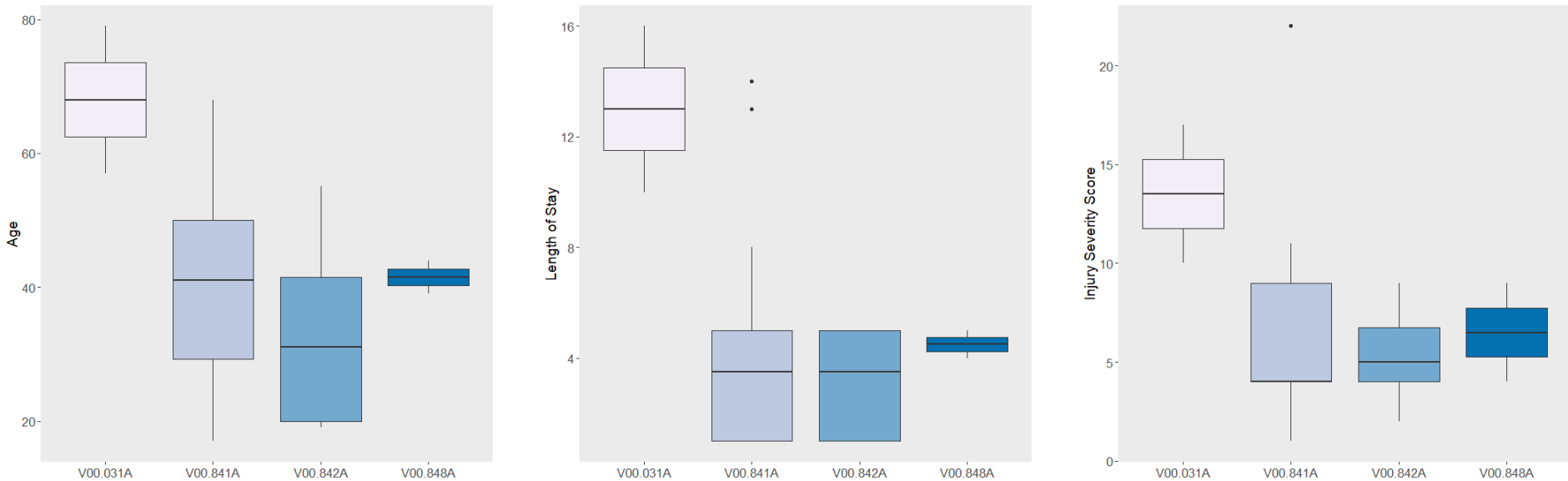
V00.848: Other accident with standing micro-mobility pedestrian conveyance



- 42 patients across 3 years
- 74% male ($n = 31$)
- Median Age: 41y [28 – 52]
- 76% admitted ($n = 32$)
- 76% with a fracture ($n = 32$)
 - Tibia, Fibula, Femur
 - Wrist, Nose, Ribs
- 19% with mild head injury ($n = 8$)
 - Concussion ($n = 4$)
 - Subdural/Subarachnoid bleed ($n = 4$)
- 64% required OR procedure ($n = 27$)
- 87% unhelmeted ($n = 35/40$)

First three years of new codes: Trauma patients @ JHMC

Rider on Micromobility Falls or Strikes: Pedestrian or Object



V00.031: Pedestrian on foot injured in collision with rider of standing electric scooter

V00.841: Fall from standing electric scooter

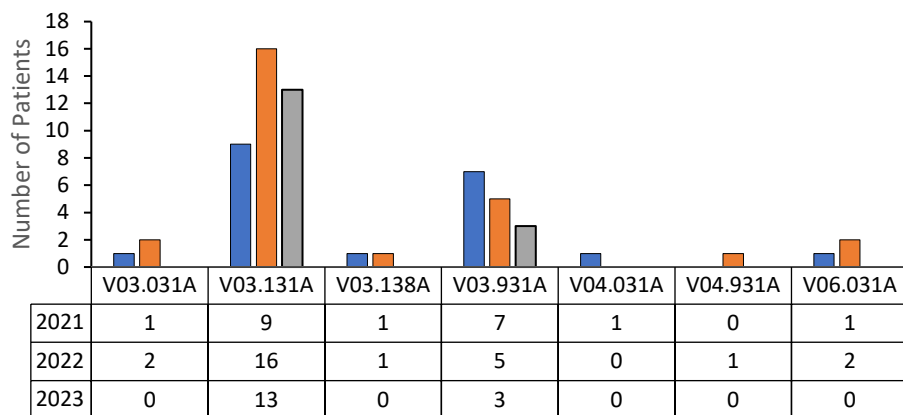
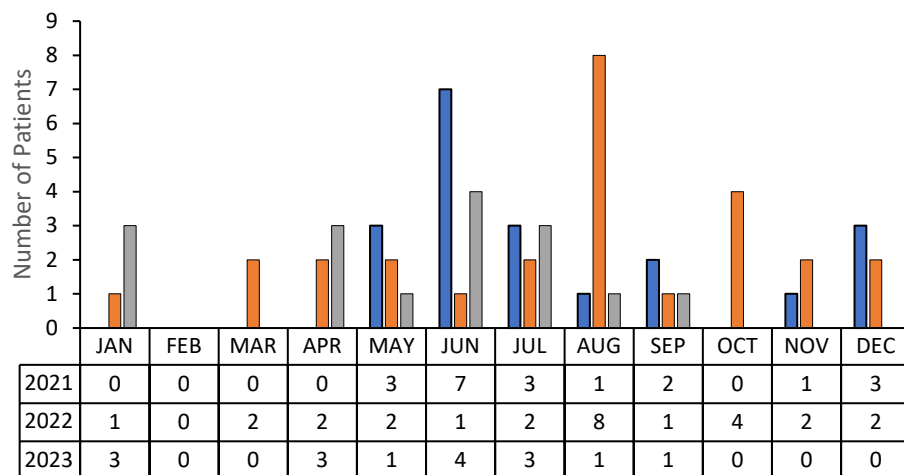
V00.842: Pedestrian on standing electric scooter colliding with stationary object

V00.848: Other accident with standing micro-mobility pedestrian conveyance

First three years of new codes: Trauma patients @ JHMC

Rider on Micromobility Struck by Vehicle

- V03.031:** Pedestrian on standing electric scooter injured in collision with car, pick-up or van in nontraffic accident
- V03.131:** Pedestrian on standing electric scooter injured in collision with car, pick-up or van in traffic accident
- V03.138:** Pedestrian on other standing micro-mobility pedestrian conveyance injured in collision with car, pick-up or van in traffic accident
- V03.931:** Pedestrian on standing electric scooter injured in collision with car, pick-up or van, unspecified whether traffic or nontraffic accident
- V04.031:** Pedestrian on standing electric scooter injured in collision with heavy transport vehicle or bus in nontraffic accident
- V04.931:** Pedestrian on standing electric scooter injured in collision with heavy transport vehicle or bus, unspecified whether traffic or nontraffic accident
- V06.031:** Pedestrian on standing electric scooter injured in collision with other nonmotor vehicle in nontraffic accident

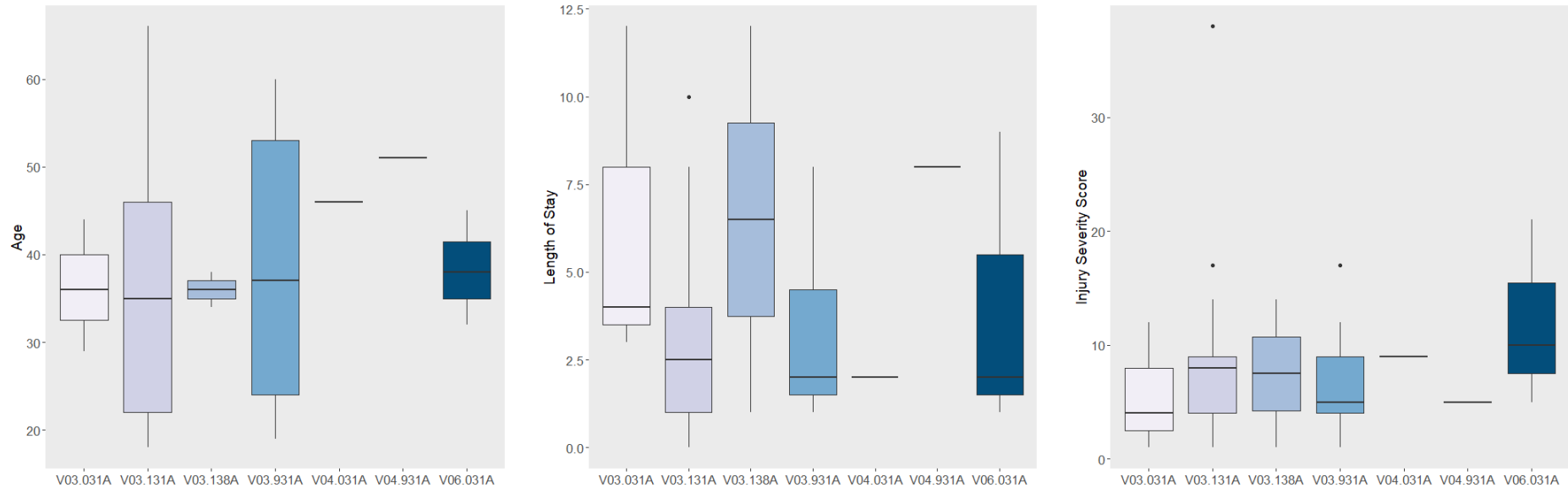


■ 2021 ■ 2022 ■ 2023

- 64 patients across 3 years
- 94% male ($n = 60$)
- Median Age: 36y [24 – 47.5]
- 77% admitted ($n = 49$)
- 69% with a fracture ($n = 44$)
 - Tibia, Fibula, Hip, Vertebra
 - Wrist, Nose, Ribs, Scapula
- 26% with mild head injury ($n = 17$)
 - Concussion ($n = 12$)
 - Subdural/Subarachnoid bleed ($n = 5$)
- 39% required OR procedure ($n = 25$)
- 72% unhelmeted ($n = 46$)

First three years of new codes: Trauma patients @ JHMC

Rider on Micromobility Struck by Vehicle



V03.031: Pedestrian on standing electric scooter injured in collision with car, pick-up or van in nontraffic accident

V03.131: Pedestrian on standing electric scooter injured in collision with car, pick-up or van in traffic accident

V03.138: Pedestrian on other standing micro-mobility pedestrian conveyance injured in collision with car, pick-up or van in traffic accident

V03.931: Pedestrian on foot injured in collision with rider of standing electric scooter

V04.031: Pedestrian on standing electric scooter injured in collision with heavy transport vehicle or bus in nontraffic accident

V04.931: Pedestrian on standing electric scooter injured in collision with heavy transport vehicle or bus, unspecified whether traffic or nontraffic accident

V06.031: Pedestrian on standing electric scooter injured in collision with other nonmotor vehicle in nontraffic accident

Take home points

- Minimal involvement of alcohol intoxication (10%; 11/106) among injured
- Minimal involvement of drugs (16%; 17/106) among injured
- Micromobility users that fell/struck an object were more likely to go to the OR for treatment than those that were struck by a vehicle (+25%; 64% vs. 39%; 95%CI [6.4% - 44.0%]; $p = 0.011$)
- No significant difference in age between micromobility users that fell/struck an object (41y [28 – 52]) vs. those that were struck by a vehicle (36y [24 – 47.5]; $p = 0.22$)
- Majority of micromobility users were male (86%; 89/104; $p < 0.001$)
- Unadjusted hospital LOS was longer among micromobility users that fell/struck an object (5d [3-6]) vs. those that were struck by a vehicle (3d [2-6]), but regression models showed injury severity to be the only significant mediator.
- More specificity in ICD10 v-codes allows registrars to accurately code micromobility device used
- The specificity afforded by these new codes will enable better study of injuries/risks
- Detailed study of injury patterns & accident details associated with different devices may also lead to better injury prevention efforts