

Occupational Visits Broad V1 **Definition Factsheet & Technical Brief**

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Definition Description:

The objective is to capture **work-related emergency department visits**, including injuries and illnesses, among youth and adults ages 14 years and older. The minimum age of employment is 14 with a few exceptions that may not be fully captured by this definition, such as agricultural jobs and working in a family business.

New or Revised Definition:

Revised Definition

Date Added to ESSENCE: July 2026

Use-Cases for Definition:

Case-finding: Secondary

Trend monitoring: Primary

Early outbreak detection: Not Intended as Use Case

Emergent Condition: Not Intended as Use Case

Justification:

There is not a “work-related” or “occupational” field in ESSENCE, and collection of occupation and industry data is not currently required by facilities that submit data to ESSENCE. The original occupational subsyndrome definition in ESSENCE was evaluated and determined to be too broad, capturing many non-cases.¹ A consistent, accurate, yet adaptable definition to identify work-related emergency department visits is essential for improving usefulness of ESSENCE for timely occupational health surveillance. It may also assist with disaster and outbreak responses where identifying the subset of work-related visits is important.

¹ Harduar Morano L, Kite Powell A, Luckhaupt SE. Evaluation and Revision of Historical ESSENCE Syndromic Surveillance Definition Used to Identify Work-Related Emergency Department Visits. *Public Health Rep.* 2025;140(2-3):192-202. doi:10.1177/00333549241287929

Data Source During Development: Emergency department visits. Chief Complaint Query Validation dataset (CCQV) in ESSENCE.

Validation Methods:

1. See Appendix for full evolution of definition development. A validation worksheet including the query syntax and questions regarding the query was created and introduced to the nine participating jurisdictions (KY, LA, MA, MI, NE, NJ, OR, WI, WA). Participants were asked to review visits between January 1, 2024 and December 31, 2024.
2. Initial review (Round 1) was completed by all nine jurisdictions.
3. After receiving feedback from these jurisdictions, a new iteration of the query was created.
4. Subsequent review (Round 2) was completed by six jurisdictions (KY, LA, MA, MI, WA, WI).

Validation Results: Jurisdictions calculated positive predictive value (PPV) by comparing visits that were deemed a true positive (i.e., a visit of interest) to all visits identified by the definition in a defined period. True positive criteria was based on Occupational Safety and Health Administration (OSHA) standards for recording and reporting occupational injuries and illnesses.² A visit was considered a true positive if it was an initial visit for an injury or illness that occurred while at work, OR an injury or illness that was exacerbated by work activities. At work or work activities means the individual was 1) working for income or pay, or 2) in a volunteer role, or 3) while in a training role (e.g. medical/nursing student, resident, apprentice, military training), or 4) doing agricultural production activities. Occurring at work was determined by clear language in the chief complaint to indicate this, or if worker's compensation (or a variant of worker's compensation) was present, or if the discharge diagnosis code was Y99.0 (civilian activity done for income or pay) or Y99.1 (military activity).

Round 1 of validation testing resulted in a PPV range of 44% to 99% across testing jurisdictions. Round 2 of testing on the updated definition resulted in a PPV range of 77% to 96% reflecting more consistent performance after modifications.

Limitations: This definition may capture some false positives, such as visits describing becoming ill at work due to non-work related concerns or existing conditions (particularly for conditions and symptoms such as seizures, chest pain, syncope/fainting). It is not always possible to determine whether these visits are truly work-related or not work-related based on the information reported to ESSENCE. It may also capture chronic injuries (regardless of work-relatedness), injuries sustained during recreational/hobby/home-based activities that are difficult to determine whether related to work done for pay, or repeat/follow-up visits for the same injury. There may be chief complaint terms and discharge diagnoses codes that are usually work-related in some jurisdictions, but not others (e.g. due to presence of certain industries/occupations, such as agricultural activities). Jurisdictions may need to make modifications tailored to their specific contexts as needed; this definition attempted to include work-related terms that would capture the most visits across settings. Additionally, WC is often used as an abbreviation for "worker's compensation", but there are instances when it instead refers to words such as "wheelchair". The definition does attempt to exclude the most common chief complaint terms associated with these cases but may not exclude all instances.

Plain Language Description: The definition uses free-text chief complaint terms and discharge diagnosis codes. The definition requires that an emergency department visit contains a reference to work-relatedness (including, but not limited to, reference to worker's compensation), OR a discharge diagnosis code (ICD-10-M or SNOMED CT code) that is usually associated with a work-related illness or injury. To ensure that only initial work-related visits are captured, we excluded records with chief complaint text or discharge diagnosis codes indicating follow-up visits for the same injury or illness.

Definition Fields and Structure:

The Chief Complaint Discharge Diagnosis (CCDD) parsed field and Chief Complaint Updates are used to query both the discharge diagnosis codes and chief complaint free text, and exclusions are incorporated as necessary.

- Inclusion based on work-relatedness in chief complaint free text terms. The visit is included if it contains:
 1. A chief complaint term related to work/work-relatedness—(examples: "at work", "work injury", "job injury", "work rela", "is employee", "while working", "coworker", "OTJ", "OJI", "employee exposure")

² [1904.5 - Determination of work-relatedness. | Occupational Safety and Health Administration](#)

- a. Nested exclusions include: “not work rela”/”not OTJ”/”not occupational exposure”; “labwork related/bloodwork related/paperwork related”; “while working out” **OR**
 - 2. A chief complaint term related to worker’s compensation—(“workers comp”, “work comp”, “workm[ae]ns co”, “wcomp”, “wc”)
 - a. Nested exclusions include: “not worker comp”, and wheelchair-related terms: “declined wc”, “bib wc”, “his wc”, “to wc”, “arrives wc”; and other non-work-related terms that use wc as abbreviation: “well child”, “wound check” **OR**
- Inclusion based on ICD-10-CM discharge diagnosis codes that may be work-related (initial encounters where specified). The visit is included if it contains any of the following:
 - 1. Codes for work-related external causes of morbidity (examples below—see Detailed Definition Components table for full list):
 - a. V69.4[09]XA: Driver of heavy transport vehicle injured in collision, initial encounter **OR**
 - b. W12.XXXA: Fall on and from scaffolding, initial encounter **OR**
 - c. W30.[012389]XXA Exposure to industrial wiring, appliances and electrical machinery, initial encounter **OR**
 - d. W30.[012389]XXA: Contact with agricultural machinery, initial encounter **OR**
 - e. Y35.91XA: Legal intervention, means unspecified, law enforcement official injured, initial encounter **OR**
 - 2. Place of occurrence factors:
 - a. Y92.6 Industrial and construction area **OR**
 - b. Y92.13 Military base **OR**
 - c. Y92.84 Military training ground **OR**
 - d. Y92.86 Slaughter house **OR**
 - 3. Activities related to causes of morbidity classified elsewhere
 - a. Y93.H3 Activity, building and construction
 - b. Y93.81 Activity, refereeing a sports activity **OR**
 - 4. External cause status (work status codes)
 - a. Y99.0 Civilian activity done for income or pay **OR**
 - b. Y99.1 Military activity **OR**
 - 5. Factors influencing health status and contact with health services
 - a. Z04.2: Encounter for examination and observation following work accident **OR**
 - b. Z57: Occupational exposure to risk factors **OR**
- Inclusion based on SNOMED CT codes (examples below—see Detailed Definition Components table for full list). The visit is included if it contains any of the following:
 - 371128008: Occupational injury **OR**
 - 84063009: Traumatic deafness, occupational (disorder) **OR**
 - 16090571000119109: Occupational exposure to toxic agent (event) **OR**
 - 402587003: Occupational dermatitis (disorder) **OR**
 - 897036007: Occupational exposure to severe acute respiratory syndrome coronavirus 2 (event) **OR**
 - 57607007: Occupational asthma (disorder) **ANDNOT**
- All of the above must exclude:
 - Terms indicating a non-initial visit for the complaint—(“recheck”, “re eval”, “revisit”, follow up”, etc.) **OR**
 - “Social work”, “case work”, “firework” **OR**
 - Terms related to commute to/from work—(“way to work”, “traveling to work”, “late for work”, etc.)

Detailed Definition Components

Table 1. Inclusion and exclusion terms

Terms	Description
<i>Inclusion</i>	
International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)	
V6[0-9][05]XXA	Driver or passenger of heavy transport vehicle injured in collision, initial encounter
V694[09]XA	Driver of heavy transport vehicle injured in collision, initial encounter
V79[04][09]XA	Driver of bus injured in collision, initial encounter
V83[01456]XXA	Occupant of special industrial vehicle injured, initial encounter
V8[45][01456]XXA	Occupant of special agricultural or construction vehicle injured, initial encounter
V86[05][14]XA	Occupant of special all-terrain or off-road motor vehicle injured (ambulance or military vehicle), initial encounter
V954[1-59]XA	Spacecraft accident injuring occupant, initial encounter
W12XXA	Fall on and from scaffolding, initial encounter
W30[012389]XXA	Contact with agricultural machinery, initial encounter
W318[23]XA	Contact with other commercial machinery or special construction vehicle, initial encounter
W861XXA	Exposure to industrial wiring, appliances and electrical machinery, initial encounter
W890XXA	Exposure to welding light (arc), initial encounter
Y926	Industrial and construction area as the place of the occurrence of the external cause
Y9213	Military base as the place of occurrence of the external cause
Y928[46]	Military training ground, or slaughter house as the place of occurrence of the external cause
Y9381	Activity, refereeing a sports activity
Y99[01]	Civilian activity done for income or pay or Military activity
Y351[0129]1A	Legal intervention involving explosives, law enforcement officer, bystander, or unspecified person injured, initial encounter
Y352[0129]1A	Legal intervention involving gas, law enforcement officer, bystander, or unspecified person injured, initial encounter
Y35[34][019]1A	Legal intervention involving blunt objects, law enforcement officer, bystander, or unspecified person injured, initial encounter
Y358[19]1A	Legal intervention involving manhandling or other specified means, initial encounter
Y3591XA	Legal intervention, means unspecified, law enforcement official injured, initial encounter
Y360[0-59]0A	War operations involving explosion of marine weapons, initial encounter
Y361[0-490]0A	War operations involving destruction of aircraft, initial encounter
Y362[0-79]0A	War operations involving other explosions and fragments, initial encounter
Y363[01239]0A	War operations involving fires, conflagrations and hot substances, initial encounter
Y364[1-79]0A	War operations involving firearm discharge and other forms of conventional warfare, initial encounter
Y365[012349]0A	War operations involving nuclear weapons, initial encounter
Y36[67]X0A	War operations involving biological or chemical weapons, initial encounter
Y368[1289]0A	War operations occurring after cessation of hostilities, initial encounter
Y370[0-59]0A	Military operations involving explosion of marine weapons, initial encounter
Y371[012349]0A	Military operations involving destruction of aircraft, initial encounter, initial encounter
Y372[0-79]0A	Military operations involving other explosions and fragments, initial encounter

Y373[01239]0A	Military operations involving fires, conflagrations and hot substances, initial encounter
Y374[1-79]0A	Military operations involving firearm discharge and other forms of conventional warfare, initial encounter
Y375[012349]0A	Military operations involving nuclear weapons, initial encounter
Y37[67]X0A	Military operations involving biological or chemical weapons, initial encounter
Y38[0-7]X1A	Terrorism involving explosion of marine weapons, destruction of aircraft, other explosions and fragments, fires, conflagrations, and hot substances, firearm discharge and other forms of conventional warfare, biological or chemical weapons, initial encounter
Y388[19]1A	Terrorism involving suicide bomber or other means, public safety official injured, initial encounter
Y389X1A	Terrorism, secondary effects, public safety official injured
Z042	Examination and observation following work accident
Z57	Occupational exposure to risk factors
ICD-10-CM Discharge Diagnosis Codes (Nested together with ANDNOT)	
Y35.91XA (Legal intervention, means unspecified, law enforcement official injured)	"By police" or "By law enforcement"
SNOMED Concepts	
371128008	Occupational injury (disorder)
65339005	Disorder due to work-related activity accident (disorder)
95865009	Effects of exposure to extreme temperature, occupational (disorder)
95863002	Effects of occupational exposure to radiation (disorder)
9665009	Occupational friction injury of tooth (disorder)
724872001	Occupational injury of skin caused by corrosive substance (disorder)
84063009	Traumatic deafness, occupational (disorder)
16090691000119109	Occupational exposure to dust (event)
897036007	Occupational exposure to severe acute respiratory syndrome coronavirus 2 (event)
16090451000119101	Occupational exposure to radiation (event)
735932007	Occupational exposure to vibration (event)
102445001	Occupational exposure to toxic dust (event)
16090571000119109	Occupational exposure to toxic agent (event)
102439009	Occupational exposure to toxic waste (event)
102425009	Occupational exposure to polluted air (event)
102433005	Occupational exposure to polluted soil (event)
102428006	Occupational exposure to polluted water (event)
1290521000000109	Occupational exposure to monkeypox virus (event)
102436002	Occupational exposure to chemical pollution (event)
765226004	Occupational exposure to extreme temperature (event)
102422007	Occupational exposure to environmental pollution (event)
102442003	Occupational exposure to toxic agricultural agent (event)
16090771000119104	Occupational exposure to environmental tobacco smoke (event)
698482005	Occupational disorder of upper limb (disorder)
86157004	Occupational lung disease (disorder)
57607007	Occupational asthma (disorder)
115966001	Occupational disorder
49691004	Occupational bronchitis (disorder)
17542004	Accident while engaged in work-related activity (event)
16090771000119104	Occupational exposure to environmental tobacco smoke (event)

402587003	Occupational dermatitis (disorder)
12441000132105	Occupational skin disease (disorder)
238713002	Occupational vitiligo (disorder)
201220003	Occupational acne (disorder)
733211007	Occupational contact urticaria (disorder)
Chief Complaint Terms	
"At work" or "At wrok" or "Works comp" or "From work" or "During work" or "Sent by work" or "Secondary to work" or "At job" or "Job rela" or "Job exposure" or "On job" or "Worker s comp" or "Worker mans comp" or "Worker man s comp" or "Worker on nduty" or "At worked" or "Coworker" or "Employee exposure" or "Employee acci" or "Employee injury" or "Employee complains of" or "Employee rela" or "Employee health" or "Exposure employee" or "Injury employee" or "Is an employee" or "Is employee" or "Employee" or "WCOMP" or "Occupational health" or "Wrk inj" or "Wrk injury" or "Wrk acci" or "Workplace" or "Work injury" or "Work acci" or "Job injury" or "Injury work" or "Job acci" or "Work incident" or "Accident work" or "Work rela" or "Work comp" or "Workers comp" or "While working" or "OJI" or "OTJ" or "Occupational exposure" or "Occupational injury" or "Wrk comp" or "WORKM[AE]N S CO" or "WORKM[AE]NS CO" or "WORKM[AE]N CO" or "WC"	
Chief Complaint (Nested together with AND)	
Employee	"Needle" or "Bodily Fluid" or "Body Fluid" or "On duty"
Chief Complaint (Nested together with ANDNOT)	
Work rela	"Not work rela" or "Non work rela" or "Bloodwork rela" or "Lab work rela" or "Labwork rela" or "Paper work rela" or "Paperwork rela"
Work comp	Labwork comp Bloodwork comp Lab work comp Blood work comp Works comp
Worker comp	Not worker comp
Workers comp	Not workers comp
While working While working	"Working out" or "Working at home" or "At home while working" or "Working_yard" or "Working_kitchen" or "Working_shed" or "Working on" or "Working with pcp" or "Working with ortho" or "Working with PT"
"Work injury" or "Work accident" or "Job injury" or "Injury work" or "Job acci" or "Work incident" or "Accident work" or "Work acci"	"Chronic" or "History of"
OJI	Not OJI
OTJ	Not OTJ
Occupational exposure	No occupational exposure
Occupational Injury	Not Occupational Injury
Work rela	Not work rela
Wrk rela	Not wrk rela
Wrk comp	Not wrk comp
WORKM[AE]N S CO	not WORKM[AE]N S CO
WORKM[AE]NS CO	Not WORKM[AE]NS CO
WORKM[AE]N CO	not WORKM[AE]N CO
"WC" or "W/C"	"wound check" or "well child" or "not wc" or "not w/c" or "WC dependent" or "W/C dependant" or "Patient a WC" or "Patient a W/C" or "wheelchair" or "wheel chair" or "by wheelchair" or "seeing WC" or "seeing W/C" or "WC center" or "W/C center" or "personal WC" or "personal W/C" or "p[re][er]scription for WC" or "p[re][er]scription for W/C" or "arrives WC" or "arrives W/C" or "arrived with wc" or "arrived with w/c" or "refusing wc" or

	"refusing w/c" or "refused wc" or "refused w/c" or "ems wc" or "ems w/c" or "decline wc" or "decline w/c" or "WC roll" or "W/C roll" or "follow up" or "recheck" or "from wc" or "from w/c" or "by wc" or "by w/c" or "in wc" or "in w/c" or "to wc" or "to w/c" or "via wc" or "via w/c" or "of wc" or "of w/c" or "his wc" or "his w/c" or "her wc" or "her w/c" or "own wc" or "bib wc" or "power wc" or "motorized wc" or "electric wc" or "electric w/c" or "hospital wc" or "hospital w/c" or "wc van" or "w/c van" or "wc transport" or "w/c transport" or "into wc" or "into w/c" or "per wc" or "per w/c" or "OR wc" or "OR w/c" or "or wc" or "or w/c" or "and wc" or "and w/c" or "Duncan" or "Bound" or "bring wc" or "bring w/c" or "sitting in wc" or "sitting in w/c" or "wc assistance" or "w/c assistance" or "offered wc" or "offered w/c" or "uses wc at home" or "uses w/c at home" or "typically uses wc" or "typically uses w/c" or "uses wc for mobility" or "uses w/c for mobility" or "uses a wc" or "uses a w/c" or "wc to" or "w/c to" or "declined wc" or "declined w/c" or "!MRI!" or "!CT!" or "!CTA!"
Exclusion	
Chief Complaint Terms	
"History of seizure" or "Does not work" or "Way to work" or "Way home from work" or "Traveling from work" or "Traveling from home" or "Traveling to work" or "Traveling home" or "Driving from work" or "Injury at home" or "Late for work" or "Work complains" or "Work of breath" or "Firework" or "Firwork" or "Social work" or "Case work" or "Well child" or "paperwork" or "Workout" or "Work out" or "Workup" or "Work up" or "Followup" or "Recheck" or "Re check" or "Re visit" or "Revisit" or "Re eval" or "Reeval" or "For same complaint" or "Working out"	
Chief Complaint (Nested together with AND)	
Chronic	pain
"His" or "Her" or "My" or "Our"	"Car" or "Truck" or "Motor"
Chief Complaint (Nested together with ANDNOT)	
Follow up	"follow up with" or "follow up as noted" or "follow up app" or "follow up instruction" or "had follow up"
Paperwork	WC paperwork
Working at home	Working at home depot
Discharge diagnosis codes block (ICD-10-CM and SNOMED Concepts)	"Way to work" or "Workout" or "Work out" or ("Follow up" ANDNOT ("Follow up with" or "Follow up as noted" or "Follow up app")) or "Follow-up" or "Recheck" or "Re check" or "Re-check" or "Re visit" or "Revisit" or "Re-visit" or "Re eval" or "Re-eval" or "Working out"

Table 2. ESSENCE syntax

CC and DD Parsed Free Text, also apply to Chief Complaint Updates field:
(, (, at work^, OR, ^ at work^, OR, ^ at wrk^, OR, (, ^work injury^, OR, ^work accident^, OR, ^job injury^, OR, ^injury work^, OR, ^job acci^, OR, ^work incident^, OR, ^work acci^, OR, ^accident work^,), ANDNOT, (, ^chronic^, OR, ^history of^,), OR, ^work rela^, ANDNOT, (, ^not work rela^, OR, ^non work rela^, OR, ^bloodwork rela^, OR, ^blood work rela^, OR, ^lab work rela^, OR, ^labwork rela^, OR, ^paper work rela^, OR, ^paperwork rela^,), OR, ^work comp^, ANDNOT, (, ^labwork comp^, OR, ^bloodwork comp^, OR, ^lab work comp^, OR, ^blood work comp^,), OR, ^works comp^, OR, ^from work^, OR, ^during work^, OR, ^sent by work^, OR, ^secondary to work^, OR, at job^, OR, ^ at job^, OR, ^job rela^, OR, ^job exposure^, OR, on job^, OR, ^ on job^, OR, ^WORKER COMP^, ANDNOT, ^not worker comp^, OR, ^WORKERS COMP^, ANDNOT, ^not workers comp^, OR, ^WORKER S COMP^, OR, ^WORKER MANS COMP^, OR, ^WORKER MAN S COMP^, OR, ^WORKER ON DUTY^, OR, AT WORKED^, OR, ^ AT WORKED^, OR, ^COWORKER^, OR, ^employee exposure^, OR, ^employee acci^, OR, ^employee injury^, OR, ^employee complains of^, OR, ^employee rela^, OR, ^employee health^, OR, ^exposure employee^, OR, ^injury employee^, OR, ^ is an employee^, OR, ^ is employee^, OR, ^employee, OR, (, ^employee^, AND, (, ^needle^, OR, ^bodily fluid^, OR, ^body fluid^, OR, ^ on duty^, OR, on duty^,),), OR, (, ^while wroking^, OR, ^while working^, ANDNOT, (, ^working out ^, OR, ^working out, OR, ^working at home^, ANDNOT, ^working at home depot^, OR, ^at home while working^, OR, ^working^yard^, OR, ^working^kitchen^, OR, ^working^shed^, OR, ^working on^, AND, (, (, ^his^, OR, ^her^, OR, ^my^, OR, ^our^,), AND, (, ^car^, OR, ^truck^, OR, ^motor^,),), OR, ^working garden^, OR, ^working on^, OR, ^working with pcp^, OR, ^working with ortho^, OR, ^working with PT^, OR, ^working his yard^, OR, ^working her yard^, OR, ^working my yard^, OR, ^working his garden^, OR, ^working her^, OR, ^working my garden^,),), OR, !WCOMP!, OR, !OJ!! ANDNOT, ^not oji^, OR, !OTJ! ANDNOT, ^not otj^, OR, ^occupational exposure^, ANDNOT, ^no occupational exposure^, OR, ^OCCUPATIONAL INJURY ^, ANDNOT, ^not occupational injury^, OR, ^OCCUPATIONAL HEALTH^, OR, ^ wrk inj^, OR, wrk inj, OR, wrk inj^, OR, !WRK INJURY!, OR, WRK ACCI^, OR, ^ WRK ACCI^, OR, WRK REL^, OR, ^ WRK REL^, ANDNOT, ^not wrk rela^, OR, WRK COMP^, OR, ^ WRK COMP^, ANDNOT, ^not wrk comp^, OR, ^workplace^, OR, WORKM[AE]N CO^, OR, ^ WORKM[AE]N CO^, ANDNOT, ^not WORKM[AE]N CO^, OR, WORKM[AE]NS CO^, OR, ^ WORKM[AE]NS CO^, ANDNOT, ^not WORKM[AE]NS CO^, OR, WORKM[AE]N S CO^, OR, ^ WORKM[AE]N S CO^, ANDNOT, ^not WORKM[AE]N S CO^, OR, (, !WC!, OR, WC, OR, ^ WC, OR, WC ^, OR, ^ WC ^, OR, W/C, OR, ^ W/C, OR, W/C ^, OR, ^ W/C ^,), ANDNOT, (, wound check^, OR, ^well child^, OR, ^not wc^, OR, ^not w/c^, OR, ^WC dependent^, OR, ^W/C dependant^, OR, ^Patient^a WC^, OR, ^Patient^a W/C^, OR, ^wheelchair^, OR, ^wheel chair^, OR, ^by wheelchair^, OR, ^seeing WC^, OR, ^seeing W/C^, OR, ^WC center^, OR, ^W/C center^, OR, ^personal WC^, OR, ^personal W/C^, OR, ^p[re][er]scription for WC^, OR, ^p[re][er]scription for W/C^, OR, ^arrives WC, OR, ^arrives W/C, OR, ^arrived with wc^, OR, ^arrived with w/c^, OR, ^refusing wc^, OR, ^refusing w/c^, OR, ^refused wc^, OR, ^refused w/c^, OR, ^ems wc^, OR, ^ems w/c^, OR, ^decline^ wc^, OR, ^decline^ w/c^, OR, ^WC roll^, OR, ^W/C roll^, OR, ^follow up^, OR, ^recheck^, OR, ^from wc^, OR, ^from w/c^, OR, ^by wc^, OR, ^by w/c^, OR, ^ in wc^, OR, in wc^, OR, ^ in w/c^, OR, in w/c^, OR, ^to wc^, OR, ^to w/c^, OR, ^via wc^, OR, ^via w/c^, OR, ^of wc^, OR, ^of w/c^, OR, his wc^, OR, his w/c^, OR, ^ his wc^, OR, ^ his w/c^, OR, her wc^, OR, her w/c^, OR, ^ her wc^, OR, ^ her w/c^, OR, ^own wc^, OR, ^own wc^, OR, ^bib wc^, OR, ^bib wc^, OR, ^power wc^, OR, ^power wc^, OR, ^motorized wc^, OR, ^motorized wc^, OR, ^electric wc^, OR, ^electric w/c^, OR, ^hospital wc^, OR, ^hospital w/c^, OR, ^wc van^, OR, ^w/c van^, OR, ^wc transport^, OR, ^w/c transport^, OR, ^into wc^, OR, ^into w/c^, OR, ^per wc^, OR, ^per w/c^, OR, OR wc^, OR, OR w/c^, OR, ^ or wc^, OR, ^ or w/c^, OR, ^and wc^, OR, ^and w/c^, OR, ^Duncan^, OR, ^Bound^, OR, ^bring wc^, OR, ^bring w/c^, OR, ^sitting in wc^, OR, ^sitting in w/c^, OR, ^wc assistance^, OR, ^w/c assistance^, OR, ^offered wc^, OR, ^offered w/c^, OR, ^wc van^, OR, ^w/c van^, OR, ^uses wc at home^, OR, ^uses w/c at home^, OR, ^typically uses wc^, OR, ^typically uses w/c^, OR, ^uses wc for mobility^, OR, ^uses w/c for mobility^, OR, ^uses a wc^, OR, ^uses a w/c^, OR, ^wc to^, OR, ^w/c to^, OR, ^declined wc^, OR, ^declined w/c^, OR, !MRI!, OR, !CT!, OR, !CTA!,),), ANDNOT, (, ^history of seizure^, OR, ^chronic^, and, ^pain^, OR, ^does not work^, OR, ^way to work^, OR, ^way home from work^, OR, ^traveling from work^, OR, ^traveling from home^, OR, ^traveling to work^, OR, ^traveling home^, OR, ^driving from work^, OR, ^injury at home^, OR, ^late for work^, OR, ^work complains^, OR, ^work of breath^, OR, ^firework^, OR, ^firwork^, OR, ^social work^, OR, ^case work^, OR, ^well child^, OR, ^paperwork^, ANDNOT, ^WC paperwork^, OR, ^workout^, OR, ^working out^, OR, ^work

out^,OR,^workup^,OR,^work up ^,OR,^followup^,OR,^follow up^,ANDNOT,(^follow up with^,OR,^follow up as noted^,OR,^follow up app^,OR,^follow up instruction^,OR,^had follow up^),OR,^recheck^,OR,^ re check^,OR,^re check^,OR,^ re visit^,OR,^re visit^,OR,^revisit^,OR,^ re eval^,OR,^re eval^,OR,^reeval^,OR,^for same complaint^,),),

OR,

(,^(,^371128008;^,OR,^;65339005;^,OR,^;95865009;^,OR,^;95863002;^,OR,^;9665009;^,OR,^;724872001;^,OR,^;84063009;^,OR,^;16090691000119109;^,OR,^;897036007;^,OR,^;16090451000119101;^,OR,^;735932007;^,OR,^;102445001;^,OR,^;16090571000119109;^,OR,^;102439009;^,OR,^;102425009;^,OR,^;102433005;^,OR,^;102428006;^,OR,^;1290521000000109;^,OR,^;102436002;^,OR,^;765226004;^,OR,^;102422007;^,OR,^;102442003;^,OR,^;16090771000119104;^,OR,^;698482005;^,OR,^;86157004;^,OR,^;57607007;^,OR,^;115966001;^,OR,^;49691004;^,OR,^;17542004;^,OR,^;16090771000119104;^,OR,^;402587003;^,OR,^;12441000132105;^,OR,^;238713002;^,OR,^;201220003;^,OR,^;733211007;^,OR,^;V6[0-9][05]XXA^,OR,^;V694[09]XA^,OR,^;V79[04][09]XA^,OR,^;V83[01456]XXA^,OR,^;V8[45][01456]XXA^,OR,^;V86[05][14]XA^,OR,^;V954[1-59]XA^,OR,^;W12XXXA^,OR,^;W30[012389]XXA^,OR,^;W318[23]XA^,OR,^;W861XXA^,OR,^;W890XXA^,OR,^;Y926^,OR,^;Y9213^,OR,^;Y928[46]^,OR,^;Y9381^,OR,^;Y99[01]^,OR,^;Y351[0129]1A^,OR,^;Y352[0129]1A^,OR,^;Y35[34][019]1A^,OR,^(,^Y358[19]1A^,OR,^;Y3591XA^),ANDNOT,(^by police^,OR,^by law enforcement^),OR,^Y360[0-59]0A^,OR,^;Y361[0-490]0A^,OR,^;Y362[0-79]0A^,OR,^;Y363[01239]0A^,OR,^;Y364[1-79]0A^,OR,^;Y365[012349]0A^,OR,^;Y36[67]X0A^,OR,^;Y368[1289]0A^,OR,^;Y370[0-59]0A^,OR,^;Y371[012349]0A^,OR,^;Y372[0-79]0A^,OR,^;Y373[01239]0A^,OR,^;Y374[1-79]0A^,OR,^;Y375[012349]0A^,OR,^;Y37[67]X0A^,OR,^;Y38[0-7]X1A^,OR,^;Y388[19]1A^,OR,^;Y389X1A^,OR,^;Z042^,OR,^;Z57^),ANDNOT,(^way to work^,OR,^workout^,OR,^working out^,OR,^work out^,OR,^follow up^,ANDNOT,(^follow up with^,OR,^follow up as noted^,OR,^follow up app^),OR,^followup^,OR,^recheck^,OR,^ re check^,OR,^re check^,OR,^ re visit^,OR,^re visit^,OR,^revisit^,OR,^ re eval^,OR,^re eval^,),)

Addendum: Modified Syntax

If using a local version of ESSENCE (other than NSSP), please use the appropriate corresponding fields/coding to best match this factsheet. If you are using the CC and DD field instead of CC and DD Parsed, we recommend using the below syntax that expands ICD-10-CM codes to include both versions with and without decimal points.

CC and DD, also apply to Chief Complaint Updates field:

(,^(,^at work^,OR,^ at work^,OR,^at wrok^,OR,^(^work injury^,OR,^work accident^,OR,^job injury^,OR,^injury work^,OR,^job acci^,OR,^work incident^,OR,^accident work^),ANDNOT,(^chronic^,OR,^history of^),OR,^work rela^,ANDNOT,(^not work rela^,OR,^non work rela^,OR,^bloodwork rela^,OR,^blood work rela^,OR,^lab work rela^,OR,^labwork rela^,OR,^paper work rela^,OR,^paperwork rela^),OR,^work acci^,OR,^work comp^,ANDNOT,(^labwork comp^,OR,^bloodwork comp^,OR,^lab work comp^,OR,^blood work comp^),OR,^works comp^,OR,^from work^,OR,^during work^,OR,^sent by work^,OR,^secondary to work^,OR,^at job^,OR,^ at job^,OR,^job rela^,OR,^job exposure^,OR,^on job^,OR,^ on job^,OR,^WORKER COMP^,ANDNOT,^not worker comp^,OR,^WORKERS COMP^,ANDNOT,^not workers comp^,OR,^WORKER S COMP^,OR,^WORKER MANS COMP^,OR,^WORKER MAN S COMP^,OR,^WORKER ON DUTY^,OR,^AT WORKED^,OR,^ AT WORKED^,OR,^COWORKER^,OR,^employee exposure^,OR,^employee acci^,OR,^employee injury^,OR,^employee complains of^,OR,^employee rela^,OR,^employee health^,OR,^exposure employee^,OR,^injury employee^,OR,^ is an employee^,OR,^ is employee^,OR,^employee,OR,^(^employee^,AND,^(^needle^,OR,^bodily fluid^,OR,^body fluid^,OR,^ on duty^,OR,^on duty^),),OR,^while wroking^,OR,^while working^,ANDNOT,(^working out^,OR,^working out,OR,^working at home^,ANDNOT,^working at home depot^,OR,^at home while working^,OR,^working^yard^,OR,^working^kitchen^,OR,^working^shed^,OR,^working on^,AND,^(,^his^,OR,^her^,OR,^my^,OR,^our^),AND,^(^car^,OR,^truck^,OR,^motor^),),OR,^working garden^,OR,^working on^,OR,^working with pcp^,OR,^working with ortho^,OR,^working with PT^,OR,^working his

yard^,OR,^working her yard^,OR,^working my yard^,OR,^working his garden^,OR,^working her^,OR,^working my garden^,),OR,WCOMP ^,OR,^ WCOMP,OR, ^ WCOMP ^,OR,WCOMP,OR,(,OJI ^,OR,^ OJI,OR, ^ OJI ^,OR,OJI,),ANDNOT,^not oji^,OR,!OJI!,ANDNOT,^not oji^,OR,(,OTJ ^,OR,^ OTJ,OR, ^ OTJ ^,OR,OTJ,),ANDNOT,^not otj^,OR,!OTJ!,ANDNOT,^not otj^,OR,^occupational exposure^,ANDNOT,^no occupational exposure^,OR,^OCCUPATIONAL INJURY ^,ANDNOT,^not occupational injury^,OR,^OCCUPATIONAL HEALTH^,OR,^ wrk inj^,OR,wrk inj,OR,wrk inj^,OR,WRK INJURY ^,OR,^ WRK INJURY,OR,^ WRK INJURY ^,OR,WRK INJURY,OR,!WRK INJURY!,OR,WRK ACCI^,OR,^ WRK ACCI^,OR,WRK RELA^,OR,^ WRK RELA^,ANDNOT,^not wrk rela^,OR,WRK COMP^,OR,^ WRK COMP^,ANDNOT,^not wrk comp^,OR,^workplace^,OR,WORKM[AE]N CO^,OR,^ WORKM[AE]N CO^,ANDNOT,^not WORKM[AE]N CO^,OR,WORKM[AE]NS CO^,OR,^ WORKM[AE]NS CO^,ANDNOT,^not WORKM[AE]NS CO^,OR,WORKM[AE]N S CO^,OR,^ WORKM[AE]N S CO^,ANDNOT,^not WORKM[AE]N S CO^,OR,(,!WC!,OR,WC ^,OR,^ WC,OR, ^ WC ^,OR,WC,OR,W/C,OR,^ W/C,OR,W/C ^,OR,^ W/C ^,),ANDNOT,(^wound check^,OR,^well child^,OR,^not wc^,OR,^not w/c^,OR,^WC dependent^,OR,^W/C dependant^,OR,^Patient^a WC^,OR,^Patient^a W/C^,OR,^wheelchair^,OR,^wheel chair^,OR,^by wheelchair^,OR,^seeing WC^,OR,^seeing W/C^,OR,^WC center^,OR,^W/C center^,OR,^personal WC^,OR,^personal W/C^,OR,^p[re][er]scription for WC^,OR,^p[re][er]scription for W/C^,OR,^arrives WC,OR,^arrives W/C,OR,^arrived with wc^,OR,^arrived with w/c^,OR,^refusing wc^,OR,^refusing w/c^,OR,^refused wc^,OR,^refused w/c^,OR,^ems wc^,OR,^ems w/c^,OR,^decline^ wc^,OR,^decline^ w/c^,OR,^WC roll^,OR,^W/C roll^,OR,^follow up^,OR,^recheck^,OR,^from wc^,OR,^from w/c^,OR,^by wc^,OR,^by w/c^,OR,^ in wc^,OR,in wc^,OR,^ in w/c^,OR,in w/c^,OR,^to wc^,OR,^to w/c^,OR,^via wc^,OR,^via w/c^,OR,^of wc^,OR,^of w/c^,OR,his wc^,OR,his w/c^,OR,^ his wc^,OR,^ his w/c^,OR,her wc^,OR,her w/c^,OR,^ her wc^,OR,^ her w/c^,OR,^own wc^,OR,^own wc^,OR,^bib wc^,OR,^bib wc^,OR,^power wc^,OR,^power wc^,OR,^motorized wc^,OR,^motorized wc^,OR,^electric wc^,OR,^electric w/c^,OR,^hospital wc^,OR,^hospital w/c^,OR,^wc van^,OR,^w/c van^,OR,^wc transport^,OR,^w/c transport^,OR,^into wc^,OR,^into w/c^,OR,^per wc^,OR,^per w/c^,OR,OR wc^,OR,OR w/c^,OR,^ or wc^,OR,^ or w/c^,OR,^and wc^,OR,^and w/c^,OR,^Duncan^,OR,^Bound^,OR,^bring wc^,OR,^bring w/c^,OR,^sitting in wc^,OR,^sitting in w/c^,OR,^wc assistance^,OR,^w/c assistance^,OR,^offered wc^,OR,^offered w/c^,OR,^wc van^,OR,^w/c van^,OR,^uses wc at home^,OR,^uses w/c at home^,OR,^typically uses wc^,OR,^typically uses w/c^,OR,^uses wc for mobility^,OR,^uses w/c for mobility^,OR,^uses a wc^,OR,^uses a w/c^,OR,^wc to^,OR,^w/c to^,OR,^declined wc^,OR,^declined w/c^,OR,!MRI!,OR,!CT!,OR,!CTA!,),),ANDNOT,(^history of seizure^,OR,^chronic^,and,^pain^,OR,^does not work^,OR,^way to work^,OR,^way home from work^,OR,^traveling from work^,OR,^traveling from home^,OR,^traveling to work^,OR,^traveling home^,OR,^driving from work^,OR,^injury at home^,OR,^late for work^,OR,^work complains^,OR,^work of breath^,OR,^firework^,OR,^firwork^,OR,^social work^,OR,^case work^,OR,^well child^,OR,^paperwork^,ANDNOT,^WC paperwork^,OR,^workout^,OR,^working out^,OR,^work out^,OR,^workup^,OR,^work up ^,OR,^followup^,OR,^follow up^,ANDNOT,(^follow up with^,OR,^follow up as noted^,OR,^follow up app^,OR,^follow up instruction^,OR,^had follow up^,),OR,^recheck^,OR,^ re check^,OR,^re check^,OR,^ re visit^,OR,^re visit^,OR,^revisit^,OR,^ re eval^,OR,^re eval^,OR,^reeval^,OR,^for same complaint^,)),

OR,

((,^;371128008;^,OR,^;65339005;^,OR,^;95865009;^,OR,^;95863002;^,OR,^;9665009;^,OR,^;724872001;^,OR,^;84063009;^,OR,^;16090691000119109;^,OR,^;897036007;^,OR,^;16090451000119101;^,OR,^;735932007;^,OR,^;102445001;^,OR,^;16090571000119109;^,OR,^;102439009;^,OR,^;102425009;^,OR,^;102433005;^,OR,^;102428006;^,OR,^;1290521000000109;^,OR,^;102436002;^,OR,^;765226004;^,OR,^;102422007;^,OR,^;102442003;^,OR,^;16090771000119104;^,OR,^;698482005;^,OR,^;86157004;^,OR,^;57607007;^,OR,^;115966001;^,OR,^;49691004;^,OR,^;17542004;^,OR,^;16090771000119104;^,OR,^;402587003;^,OR,^;12441000132105;^,OR,^;238713002;^,OR,^;201220003;^,OR,^;733211007^,OR,^;V6[0-9][05]XXA^,OR,^;V694[09]XA^,OR,^;V79[04][09]XA^,OR,^;V83[01456]XXA^,OR,^;V8[45][01456]XXA^,OR,^;V86[05][14]XA^,OR,^;V954[1-59]XA^,OR,^;W12XXXA^,OR,^;W30[012389]XXA^,OR,^;W318[23]XA^,OR,^;W861XXA^,OR,^;W890XXA^,OR,^;Y926^,OR,^;Y9213^,OR,^;Y928[46]^,OR,^;Y9381^,OR,^;Y99[01]^,OR,^;Y351[0129]1A^,OR,^;Y352[0129]1A^,OR,^;Y35[34][019]1A^,OR,(^;Y358[19]1A^,OR,^;Y3591XA^,OR,^;Y35.8[19]1A^,OR,^;Y35.91XA^,),ANDNOT,(^by police^,OR,^by law enforcement^,),OR,^Y360[0-59]0A^,OR,^;Y361[0-490]0A^,OR,^;Y362[0-

79]0A^,OR,^;Y363[01239]0A^,OR,^;Y364[1-79]0A^,OR,^;Y365[0-
 49]0A^,OR,^;Y36[67]X0A^,OR,^;Y368[1289]0A^,OR,^;Y370[0-59]0A^,OR,^;Y371[0-49]0A^,OR,^;Y372[0-
 79]0A^,OR,^;Y373[01239]0A^,OR,^;Y374[1-79]0A^,OR,^;Y375[0-49]0A^,OR,^;Y37[67]X0A^,OR,^;Y38[0-
 7]X1A^,OR,^;Y388[19]1A^,OR,^;Y389X1A^,OR,^;Z042^,OR,^;V6[0-
 9].[05]XXA^,OR,^;V69.4[09]XA^,OR,^;V79.[04][09]XA^,OR,^;V83.[01456]XXA^,OR,^;V8[45].[01456]XXA^,OR,^;V
 86.[05][14]XA^,OR,^;V95.4[1-
 59]XA^,OR,^;W12.XXXA^,OR,^;W30.[012389]XXA^,OR,^;W31.8[23]XA^,OR,^;W86.1XXA^,OR,^;W89.0XXA^,OR,
 ^;Y92.6^,OR,^;Y92.13^,OR,^;Y92.8[46]^,OR,^;Y93.81^,OR,^;Y99.[01]^,OR,^;Y35.1[0129]1A^,OR,^;Y35.2[0129]1
 A^,OR,^;Y35.[34][019]1A^,OR,^Y36.0[0-59]0A^,OR,^;Y36.1[0-490]0A^,OR,^;Y36.2[0-
 79]0A^,OR,^;Y36.3[01239]0A^,OR,^;Y36.4[1-79]0A^,OR,^;Y36.5[0-
 49]0A^,OR,^;Y36.[67]X0A^,OR,^;Y36.8[1289]0A^,OR,^;Y37.0[0-59]0A^,OR,^;Y37.1[0-49]0A^,OR,^;Y37.2[0-
 79]0A^,OR,^;Y37.3[01239]0A^,OR,^;Y37.4[1-79]0A^,OR,^;Y37.5[0-49]0A^,OR,^;Y37.[67]X0A^,OR,^;Y38.[0-
 7]X1A^,OR,^;Y38.8[19]1A^,OR,^;Y38.9X1A^,OR,^;Z04.2^,OR,^;Z57^,),ANDNOT,(,^way to
 work^,OR,^workout^,OR,^working out^,OR,^work out^,OR,^follow-up^,OR,^follow up^,ANDNOT,(,^follow up
 with^,OR,^follow up as noted^,OR,^follow up app^,),OR,^followup^,OR,^recheck^,OR,^re-check^,OR,^ re
 check^,OR,^re check^,OR,^ re visit^,OR,^re visit^,OR,^revisit^,OR,^re-visit^,OR,^ re eval^,OR,^re eval^,OR,^re-
 eval^,),)

Appendix

Definition Evolution During Development

1. A revised work-related definition was developed from the original, previously unevaluated occupational subsyndrome definition in ESSENCE which uses weighted inclusion and exclusion keywords. Records identified by the original work-related definition were evaluated against ICD-10-CM work-status codes (Y99.0/Y99.1). Additional candidate inclusion and keywords were then examined, and the revised definition was evaluated.
 - a. For full details on the process of this initial revised definition, see: Harduar Morano L, Kite Powell A, Luckhaupt SE. Evaluation and Revision of Historical ESSENCE Syndromic Surveillance Definition Used to Identify Work-Related Emergency Department Visits. *Public Health Rep.* 2025;140(2-3):192-202. doi:10.1177/00333549241287929
2. Addition of discharge diagnosis codes: a team including CDC and state-based ESSENCE users (including occupational SMEs) developed a list of potentially work-related discharge diagnosis codes (ICD-10-CM and SNOMED codes). They then performed manual reviews of records to determine which codes to retain in the revised work-related definition.
 - a. This list was informed by: Bush AM, Bunn TL, Liford M. Identification of work-related injury emergency department visits using International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes. *Inj Prev.* 2021;27(S1):i3-i8. doi:10.1136/injuryprev-2019-043507.
3. Two work-related definitions were developed: a broad definition (current definition) to capture all work-related visits, and a narrow one focused on injuries only. Additional inclusion and exclusion terms were added to the respective definitions in an iterative process.
4. The definitions were then tested by the nine participating jurisdictions (KY, LA, MA, MI, NE, NJ, OR, WI, WA), and CDC at the national level. (See Validation Methods above)
5. Feedback from the testers informed changes to refine inclusion/exclusion chief complaint terms and discharge diagnosis codes.
 - a. Major changes included:
 - b. Removed ICD10 code Y93H[39] which were often undetermined visits and reported problematic by multiple states
 - c. Added “chronic”, “history of” as exclusion terms for work injury terms to attempt to exclude old/chronic (>1 yr old) injuries
 - d. Added “not” versions of inclusions terms, such as “not work rela”, “not workers comp”, etc.
 - e. Additional exclusion terms for WC (which is a common abbreviation for worker’s compensation) such as well child, wound check, and additional wheelchair-related terms
 - f. Additional exclusions for home-based/hobbies/recreational, non-work activities (e.g. working on his/her car, working in the yard, etc.).
 - g. Exclusions for social work, labwork, bloodwork, paperwork as the mention of “work” in the chief complaint
6. Updated definitions were tested by a subset of the original nine jurisdictions to obtain a final PPV.