Study Report

P4-C1-002

DARWIN EU ® - Descriptive study of tetanus immunoglobulin use and tetanus-prone wounds in Europe

30/01/2026

Version 4.0

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Public

CONTENTS

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Study title	DARWIN EU® - Descriptive study of tetanus immunoglobulin use and tetanus-prone wounds in Europe
Study report version	V4.0
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Medicinal product	Not applicable
Research question and objectives	Research question What are the incidence and prevalence of tetanus immunoglobulin use and tetanus-prone wounds over time across Europe? Study objectives 1. To estimate incidence, prevalence, and treatment rate of tetanus immunoglobulin use in the general population, overall and stratified by calendar year. 2. To estimate incidence rate and prevalence of tetanus-prone wounds in the general population, overall and stratified by calendar year and type of wound.
Countries of study	Croatia, Germany, the Netherlands, Spain, the United Kingdom
Authors	Ellen Gerritsen, e.gerritsen@darwin-eu.org Dina Vojinovic, d.vojinovic@darwin-eu.org

1. TITLE

DARWIN EU® - Descriptive study of tetanus immunoglobulin use and tetanus-prone wounds in Europe

2. DESCRIPTION OF STUDY TEAM

Study team role	Names	Organisation
Principal Investigator	Ellen Gerritsen Dina Vojinovic	IQVIA
Data Scientist	Akram Mendez Gargi Jadhav Isabella Kaczmarczyk	IQVIA
Study Manager	Natasha Yefimenko	Erasmus MC
Data Partner*	**Names**	**Organisation**
NAJS	Ivan Pristaš Marko Čavlina Antea Jezidžić Jakov Vuković Anamaria Jurčević Karlo Pintarić	Croatian Institute for Public Health
InGef RDB	Annika Vivirito Josephine Jacob Raeleesha Norris Alexander Harms	InGef - Institut für angewandte Gesundheitsforschung Berlin GmbH
IPCI	Katia Verhamme Guido van Leeuwen Marcel de Wilde Mees Mosseveld	Erasmus University Medical Center
BIFAP	Alicia Peñaranda-Navazo Ana LIorente-Garcia Elisa Martin-Merino Miguel Angel Macia Martinez Virginia Arroyo-Nebreda	Agencia Española de Medicamentos y Productos Sanitarios
IMASIS	Juan Manuel Ramírez-Anguita Angela Leis Miguel-Angel Mayer	Consorci Mar Parc de Salut Barcelona
CPRD GOLD	Antonella Delmestri Hezekiah Omulo Mandickel Kamtengeni Marta Pineda Moncusí	University of Oxford

*Data partners do not have an investigator role. Data partners execute code at their data source, review and approve their results.

3. DATA SOURCES

The study was conducted using routinely collected data from 6 data sources in 6 European countries (5 EU countries and the United Kingdom). All sources had previously been mapped to the Observational Medical Outcomes Partnership Common Data Model (OMOP CDM).

1. Croatian National Public Health Information System (NAJS), Croatia
2. InGef Research Database (InGef RDB), Germany
3. Integrated Primary Care Information (IPCI), the Netherlands
4. Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público (BIFAP), Spain
5. Institut Municipal Assistència Sanitària Information System (IMASIS), Spain
6. Clinical Practice Research Datalink GOLD (CPRD GOLD), the United Kingdom

Detailed information on the data sources can be found in **Table 2**.

4. ABSTRACT

Title

DARWIN EU® - Descriptive study of tetanus immunoglobulin use and tetanus-prone wounds in Europe

Rationale and background

Tetanus is a rare but serious neurological condition caused by a neurotoxin from *Clostridium tetani,* typically introduced through contaminated wounds. Although vaccine-preventable, tetanus remains a public health concern due to the irreversible nature of the toxin once it enters neurons. Post-exposure prophylaxis, including wound care, tetanus immunoglobulin (TIG), and a booster vaccination, is critical for individuals with tetanus-prone injuries, depending on immunisation status. In 2022, 53 cases of tetanus were reported in the European Union (EU), underscoring the importance of timely and appropriate clinical intervention. This study aimed to describe the use of TIG as a proxy for post-exposure prophylaxis of tetanus, leveraging different types of DARWIN EU® real-world data sources to provide insight into prescribing patterns across Europe.

Research question and objectives

Research question

What are the incidence and prevalence of tetanus immunoglobulin use and tetanus-prone wounds over time across Europe?

Study objectives

1. To estimate incidence, prevalence, and treatment rate of tetanus immunoglobulin use in the general population, overall and stratified by calendar year.
2. To estimate incidence rate and prevalence of tetanus-prone wounds in the general population, overall and stratified by calendar year and type of wound.

Methods

Study design

This retrospective cohort study at the population level aimed to describe the incidence, prevalence, and treatment rate of tetanus immunoglobulin use (*objective 1*) and the incidence and prevalence of tetanus-prone wounds (*objective 2*).

Study period

1st of January 2017 to 31st of December 2023 (or the latest available date).

Population

Population-level drug utilisation analyses of TIG *(objective 1*) and population-level descriptive epidemiology of tetanus-prone wounds (*objective 2*) included all individuals registered in the respective data source between 1st of January 2017 and 31st of December 2023 (or the latest date available). To estimate incidence rates, individuals were required to have at least 1 year of data visibility prior to becoming eligible for study inclusion. However, no such requirement was applied for prevalence analyses and treatment rate. Children aged <1 year of age were excluded. For the hospital data source included in the prevalence analyses, the study population was defined by the hospital's catchment area.

Variables

Drugs of interest:

- Tetanus antitoxin, WHO ATC code J06AA02

- Tetanus immunoglobulin, WHO ATC code J06BB02

Condition of interest:

- Tetanus-prone wounds, categorised as:
  - SNOMED codes for probable high-risk and possible tetanus-prone wounds, combined with a RxNorm antibiotic prescription or a SNOMED wound procedure.
  - SNOMED codes for probable high-risk tetanus-prone wounds, combined with a RxNorm antibiotic prescription or a SNOMED wound procedure (narrow definition).
  - SNOMED codes for probable high-risk tetanus-prone wounds (broad definition).
  - SNOMED codes for possible tetanus-prone wounds, combined with a RxNorm antibiotics prescription or a SNOMED wound procedure.

Data source

1. Croatian National Public Health Information System (NAJS), Croatia
2. InGef Research Data source (InGef RDB), Germany
3. Integrated Primary Care Information (IPCI), the Netherlands
4. Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público (BIFAP), Spain
5. Institut Municipal Assistència Sanitària Information System (IMASIS), Spain
6. Clinical Practice Research Datalink GOLD (CPRD GOLD), the United Kingdom

Sample size

No sample size was calculated, as this was a descriptive study.

Statistical analysis

Objective 1: Overall and annual incidence rates (expressed as the number of new users of TIG per 1,000 person-years (PYs)) and overall and annual period prevalence (expressed as the proportion of individuals with TIG record in the study population) were calculated. In addition, the overall and annual treatment rate (expressed as the total number of TIG records in the study population per 1,000 PYs) were calculated. IMASIS was only included to estimate the prevalence of TIG use, as the denominator for this data source was based on the catchment area of the hospital. Results were reported per data source.

Objective 2: Overall and annual incidence rates (expressed as number of individuals newly diagnosed with tetanus-prone wounds per 1,000 PYs) and overall and annual period prevalence (expressed as proportion of individuals with tetanus-prone wounds in the study population) were calculated per wound category. IMASIS was only included to estimate the prevalence of tetanus-prone wounds, as the denominator for this data source was based on the catchment area of the hospital. Estimates for the narrow and broad definitions of 'probable high-risk tetanus-prone wounds' were also stratified into 'penetrating or puncture wounds', 'wounds with dirt, soil, faeces, or saliva', 'wounds with foreign bodies', and 'wounds containing devitalised tissue'. Results were reported per data source.

Meta-analyses by healthcare setting: A meta-analysis was conducted to pool incidence or prevalence estimates of the three primary care data sources (IPCI, BIFAP, CPRD GOLD).

For all analyses, a minimum cell count of 5 was used when reporting results, with any smaller counts masked.

Results

Incidence rates, treatment rate, and prevalence of TIG among the study population

This multi-data source study assessed the incidence rates of recorded TIG use among a total of 47,350,249 individuals, the treatment rate among 49,751,558 individuals, and the prevalence among 50,151,558 individuals between 2017 and 2023 (or the latest available date) across Europe.

The overall incidence rates of recorded TIG use during the study period were low. The registry data source NAJS reported the highest incidence rate, with an overall incidence of 1.91 per 1,000 PYs. In the primary care data sources, the incidence rates of TIG use ranged from 0.01 per 1,000 PYs in BIFAP to 0.44 per 1,000 PYs in IPCI. In the claims data source InGef RDB, the overall incidence rate was 0.03 per 1,000 PYs. Stratification by calendar year showed that the incidence rates of TIG declined during the study period in NAJS, IPCI, and CPRD GOLD, while incidence rates were low and stable in InGef RDB and BIFAP.

The overall treatment rates of TIG use were low. In the registry data source NAJS, the overall treatment rate was 2.01 per 1,000 PYs. Among primary care data sources, the treatment rate ranged from 0.01 per 1,000 PYs in BIFAP to 0.46 per 1,000 PYs in IPCI. In the claims data source InGef RDB the overall treatment rate was 0.03 per 1,000 PY. In general, the annual treatment rates were low and declined in NAJS, IPCI, and CPRD GOLD, while incidence rates were low and stable in InGef RDB and BIFAP during the study period.

The overall prevalence of TIG records across the included data sources was low between 2017 and 2023 (or the latest available date). The prevalence was 1.04% in registry data source NAJS during the study period. In primary care data sources, the overall prevalence ranged from 0.01% in BIFAP and CPRD GOLD to 0.18% in IPCI. In the claims data source InGef RDB the overall prevalence was 0.02%, while in hospital data source IMASIS the prevalence was 0.16%. Stratification by calendar year shows that, in general, the prevalence of TIG records declined in NAJS, IPCI, IMASIS, and CPRD GOLD, while prevalence was low and stable in InGef RDB and BIFAP during the study period.

Incidence rates and prevalence of tetanus-prone wounds among the study population

A total of 38,214,927 individuals were included to assess the incidence rates of probable high-risk and possible tetanus-prone wounds, and the prevalence of probable high-risk and possible tetanus-prone wounds was assessed among 40,492,762 individuals between 2017 and 2023 (or the latest available date) in various data sources across Europe.

The annual incidence rates of probable high-risk and possible tetanus-prone wounds that involved an antibiotic treatment or a wound procedure among the study population showed distinct trends across the four data sources during the study period. In NAJS, incidence rates started at 18.68 per 1,000 PYs in 2017, followed by a decline to 14.40 per 1,000 PYs in 2022. In IPCI, incidence rates ranged between 18.02 per 1,000 PYs in 2017 and 13.6 per 1,000 PYs in 2023. In BIFAP, incidence rates of tetanus-prone wounds increased over time, starting at 5.35 per 1,000 PYs in 2017, and peaking at 9.05 per 1,000 PYs in 2023. In CPRD GOLD, annual incidence rates ranged between 7.63 per 1,000 PYs in 2017 and 4.31 per 1,000 PYs in 2023.

The annual incidence rates of possible tetanus-prone wounds involving an antibiotic treatment or a wound procedure were slightly lower than the annual incidence rates of probable high-risk and possible tetanus-prone wounds, and the trends during the study period remained consistent per data source.

The annual incidence rates of probable high-risk tetanus-prone wounds that involved an antibiotic treatment or a wound procedure varied across the data sources. In NAJS, annual incidence rates started at 6.62 per 1,000 PYs in 2017 and subsequently decreased to 4.71 per 1,000 PYs in 2022. In IPCI and CPRD GOLD, the incidence rates were stable during the study period, ranging from 1.05 per 1,000 PYs in 2017 to 1.08 per 1,000 PYs in 2023 in IPCI and from 0.80 per 1,000 PYs in 2017 to 0.66 per 1,000 PYs in 2023 in CPRD GOLD. In BIFAP, incidence rates subtly increased, starting at 0.40 per 1,000 PYs in 2017, followed by a

decline to 0.31 per 1,000 PYs in 2018, and an increase to 1.30 per 1,000 PYs in 2023. Wound-type stratified incidence rates show that incident 'wounds with foreign bodies' and/or 'wounds with dirt, soil, faeces, or saliva' were most frequently reported. Removing the criterion of requiring antibiotic treatment or a wound-specific procedure around the time of diagnosing a probable high-risk tetanus-prone wound led to a subtle increase in the incidence of these wounds across all data sources, while the trends per data source remained consistent.

The annual prevalence of probable high-risk and possible tetanus-prone wounds involving an antibiotic treatment or a wound procedure among the study population was low across the five data sources between 2017 and 2023 (or the latest date available). In NAJS, the annual prevalence ranged between 1.87% in 2017 and 1.77% in 2022. In IPCI, the prevalence ranged between 1.69% in 2017 and 1.67% in 2023. In BIFAP, the prevalence ranged between 0.52% in 2017 and 0.94% in 2023. In IMASIS, the prevalence ranged between 0.14% in 2017 and 0.20% in 2023. In CPRD GOLD, the prevalence fluctuated between 0.70% in 2017 and 0.46% in 2023.

Although the annual prevalence of possible tetanus-prone wounds involving an antibiotic treatment or a wound procedure was slightly lower than the annual prevalence of probable high-risk and possible tetanus-prone wounds combined, the trends during the study period remained consistent per data source.

The annual prevalence of probable high-risk tetanus-prone wounds that involved an antibiotic treatment or a wound procedure varied across the data sources. In NAJS, the annual prevalence declined from 0.67% in 2017 to 0.59% in 2022. In IPCI and CPRD GOLD, the prevalence was stable during the study period, ranging between 0.10% in 2017 and 0.10% in 2023 in IPCI, and between 0.07% in 2017 and 0.06% in 2023 in CPRD GOLD. In BIFAP, the prevalence subtly increased, starting at 0.04% in 2017 to 0.13% in 2023. In IMASIS, the prevalence ranged between 0.03% in 2017 and 0.05% in 2023. Wound-type stratified prevalence showed that 'wounds with foreign bodies' and/or 'wounds with dirt, soil, faeces, or saliva' were most frequently reported in IPCI, BIFAP, and CPRD GOLD, while 'wounds containing devitalised tissue' were most frequently recorded in IMASIS. Removing the criterion of requiring antibiotic treatment or a wound-specific procedure around the time of diagnosing a probable high-risk tetanus-prone wound led to an increased prevalence across all data sources.

Discussion

This multi-data source study provides evidence on TIG prescribing patterns and the epidemiology of tetanus-prone wounds among real-world data sources across Europe between 2017 and 2023.. Although the recorded use of TIG and the annual prevalence of tetanus-prone wounds remained low during the study period, the results varied considerably between data sources. The NAJS registry reported the highest TIG use compared to the other data sources, which had less comprehensive coverage of healthcare settings. This heterogeneity highlights the need for increased coverage of both primary and secondary care to gain better insight into the use of prophylaxis of this life-threatening rare disease.

5. LIST OF ABBREVIATIONS

Acronyms/term	Description
AEMPS	Spanish Agency of Medicines and Medical Devices
ATC	Anatomical Therapeutic Chemical
BIFAP	Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público
CDM	Common Data Model
CM	Clinical Modification
CPRD GOLD	Clinical Practice Research Datalink GOLD
DARWIN EU®	Data Analysis and Real World Interrogation Network
DQD	Data Quality Dashboard
DUS	Drug Utilisation Study
ED	Emergency Department
EHR	Electronic Health Records
EMA	European Medicines Agency
ENCePP	European Network of Centres for Pharmacoepidemiology and Pharmacovigilance
EU	European Union
GP	General Practitioner
GDPR	General Data Protection Regulation
ICD	International Classification of Diseases
ID	Index date
IMASIS	Institut Municipal Assistència Sanitària Information System
InGef RDB	InGef Research Database
IP	Inpatient
IPCI	Integrated Primary Care Information
NA	Not applicable
NAJS	Croatian National Public Health Information System
OHDSI	Observational Health Data Sciences and Informatics
OMOP	Observational Medical Outcomes Partnership
OP	Outpatient
OT	Other
PAS	Post-Authorization Studies
PCP	Primary care physicians
PYs	Person-years
SD	Standard deviation
SHI	Statutory Health Insurance provider
SNOMED	Systematized Nomenclature of Medicine
SNS	Spanish National Health Service

Acronyms/term	Description
TIG	Tetanus immunoglobulin
WHO	World Health Organisation

6. AMENDMENTS AND UPDATES

Number	Date	Section of study protocol	Amendment orupdate	Reason
1	September 2025	Outcomes	Adjusted wound categories and strata	Wound-related disease codes lacked sufficient granularity to reliably identify relevant cases eligible for TIG administration. To mitigate this limitation, wound codes were categorised into 'probable high-risk tetanus-prone wounds' and 'possible tetanus-prone wounds'. To improve specificity, these codes were used in combination with antibiotics or wound-specific procedures (narrow definition). The occurrence of 'probable high-risk tetanus-prone wounds' was also assessed without requiring antibiotics treatment or wound-specific procedures (broad definition). Additionally, based on Cohort Diagnostics results, some strata had very low event counts. Therefore, wound strata were adapted based on the CDC classification to enhance clinical relevance and support risk stratification.
2	September 2025	Main statistical methods	Treatment rate is reported per 1,000 (person-years) PYs instead of as a proportion	Calculating proportions based on multiple treatment records per individual can result in proportions exceeding 100%. To ensure interpretable reporting, treatment rates were expressed per 1,000 PYs

7. MILESTONES

Study deliverable	Timelines (planned)	Timelines (actual)
Draft Study Protocol	25th June 2025	25th June 2025
Final Study Protocol	27th July 2025	28th July 2025
Creation of Analytical code	July/August 2025	August/September 2025
Execution of Analytical Code on the data	September 2025	October 2025
Draft Study Report	24th October 2025	24th October 2025
Final Study Report	To be confirmed by EMA	30th January 2026

8. RATIONALE AND BACKGROUND

Tetanus is a life-threatening neurological disorder [1]. In 2022, there were 53 reported tetanus cases in the European Union [2]. It is caused by a neurotoxin produced by *Clostridium tetani*, a spore forming bacterium commonly found in soil and animal faeces. Infections occur when spores enter the body via wounds, burns and bites, following injecting drug use, or during surgical procedures. Depending on the type of wound, the symptoms typically appear within a few days to several weeks after infection. Once in the body, the neurotoxin produced by the spores affects the nervous system, leading to muscle spasms and rigidity [3]. Despite being vaccine-preventable [4], tetanus remains a public health concern due to the inability of antitoxin treatments to neutralise the toxin once it has entered neurons. Therefore, timely clinical management is essential [5]. For individuals presenting with tetanus-prone wounds, post-exposure prophylaxis may include thorough wound cleansing, surgical debridement, and administration of tetanus immunoglobulin (TIG), depending on the individual's immunisation history. A reinforcing dose of a tetanus-containing vaccine may also be indicated [5, 6].

This study aimed to describe the use of TIG as a proxy for post-exposure prophylaxis of tetanus, leveraging different types of DARWIN EU® real-world data sources to provide insight into prescribing patterns across Europe.

9. RESEARCH QUESTION AND OBJECTIVES

Research question

What are the incidence and prevalence of tetanus immunoglobulin use and tetanus-prone wounds over time across Europe?

Study objectives

1. To estimate incidence, prevalence, and treatment rate of tetanus immunoglobulin use in the general population, overall and stratified by calendar year.
2. To estimate incidence rate and prevalence of tetanus-prone wounds in the general population, overall and stratified by calendar year and type of wound.

Description of the study objectives is shown in **Table 1**.

Table 1. Primary and secondary research questions and objectives.

A. Study objective 1.

Objective:	To estimate incidence, prevalence, and treatment rate of tetanus immunoglobulin use in the general population, overall and stratified by calendar year.
Hypothesis:	Not applicable
Population *(mention key inclusion-exclusion criteria):*	All individuals registered in the respective data source between 1st of January 2017 and 31st of December 2023 (or the latest date available). For the estimation of incidence rates, individuals were required to have at least 1 year of data visibility prior to becoming eligible for study inclusion. However, no such requirement was applied for prevalence and treatment rate analyses. Children aged <1 year of age were excluded.
Exposure#:	Not applicable
Comparator:	None
Outcome#:	Tetanus immunoglobulins (TIG)
Time *(when follow up begins and ends):*	Follow-up, i.e., when an individual enters the denominator population, started when study participants fulfilled inclusion criteria. For incidence analyses, follow-up started on the respective date of the latest of the following: 1) study start date (1st of January 2017) or 2) date at which individual had 1 year of prior history. For treatment rate and prevalence analyses, follow-up started on the respective date of latest of the following: 1) study start date (1st of January 2017) or 2) start of observation period. End of follow-up was defined as the earliest of the following: 1) end of study period (31st of December 2023), 2) end of data availability, 3) loss to follow up, or 4) death, whichever came first. For the estimation of incidence rates of the outcome of interest, the first occurrence of the outcome of interest after follow-up was also included as a censoring criterion.
Setting:	Primary care, registry, claims, inpatient, and outpatient specialist care setting using data from 6 data sources: NAJS (Croatia), InGef RDB (Germany), IPCI (the Netherlands), BIFAP (Spain), IMASIS (Spain), and CPRD GOLD (UK). IMASIS was only included to estimate prevalence of TIG use.
Main measure of effect:	Number of new/incident records of TIG overall reported per data source.

	Overall and annual incidence rates of TIG use (expressed as the number of new users of TIG per 1,000 PYs), reported per data source. Overall and annual period prevalence of TIG use (expressed as the proportion of individuals with a TIG record in the study population), reported per data source. Overall and annual treatment rate of TIG (expressed as the total number of TIG records in the study population per 1,000 PYs), reported per data source.

= 'Exposure' refers to drugs that influence outcomes, e.g., drugs used for characterisation, while 'Outcome' refers to drug use as outcome. PYs = person-years

B. Study objective 2.

Objective:	To estimate incidence rate and prevalence of tetanus-prone wounds in the general population, overall and stratified by calendar year and type of wound.
Hypothesis:	Not applicable
Population ***(mention key inclusion-exclusion criteria):***	All individuals registered in the respective data sources between 1st of January 2017 and 31st of December 2023 (or the latest date available). For estimation of incidence rates, eligible individuals were required to have at least 1 year of data visibility prior to becoming eligible for study inclusion. However, no such requirement was applied for prevalence analyses. Children <1 year of age were excluded.
Exposure:	Not applicable
Comparator:	None
Outcome:	Tetanus-prone wounds categorised into probable high-risk and possible tetanus-prone wounds (narrow definition), probable high-risk tetanus-prone wounds (narrow definition), probable high-risk tetanus-prone wounds (broad definition), and possible tetanus-prone wounds (narrow definition).
Time ***(when follow up begins and ends):***	Follow-up, i.e., when an individual enters the denominator population, started when study participants fulfilled inclusion criteria. For incidence analyses, follow-up started on the respective date of the latest of the following: 1) study start date (1st of January 2017) or 2) date at which individual has 1 year of prior history. For prevalence analyses, follow-up started on the respective date of latest of the following: 1) study start date (1st of January 2017) or 2) start of observation period. End of follow-up was defined as the earliest of the following: 1) end of study period (31st of December 2023), 2) end of data availability, 3) loss to follow up or 4) death, whichever came first. For estimation of incidence rates of outcome of interest, the first occurrence of the outcome of interest was also treated as a censoring criterion.
Setting:	Primary care, registry, claims, inpatient, and outpatient specialist care setting using data from 5 data sources: NAJS (Croatia), IPCI (Netherlands), BIFAP (Spain), IMASIS (Spain), and CPRD GOLD (UK). IMASIS was only included to estimate prevalence of tetanus-prone wounds.
Main measure of effect:	Number of new/incident tetanus-prone wounds per wound category, reported per data source. Overall and annual incidence rates (expressed as number of individuals newly diagnosed with tetanus-prone wounds per 1,000 PYs) per wound category, reported per data source. Estimates for the narrow and broad definitions of 'probable high-risk tetanus-prone wounds' were also stratified by type of wound, Overall and annual period prevalence of number of individuals diagnosed with tetanus-prone wounds (expressed as proportion of individuals with a tetanus-prone wound diagnosis in the study population) per wound category, reported

	per data source. Estimates for the narrow and broad definitions of 'probable high-risk tetanus-prone wounds' were also stratified by type of wound.

PYs = person-years

10. RESEARCH METHODS

10.1. Study type and study design

A cohort study was conducted using routinely collected health data from 6 data sources. The study comprised a population-level drug utilisation of TIG (*objective 1*) and a population-level descriptive epidemiology of tetanus-prone wounds (*objective 2*).

10.2. Study setting and data sources

The study was conducted using routinely collected data from 6 data sources in 5 European countries (4 EU countries and the United Kingdom). All data sources had previously been mapped to the Observational Medical Outcomes Partnership Common Data Model (OMOP CDM).

1. Croatian National Public Health Information System (NAJS), Croatia
2. InGef Research Database (InGef RDB), Germany
3. Integrated Primary Care Information (IPCI), the Netherlands
4. Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público (BIFAP), Spain
5. Institut Municipal Assistència Sanitària Information System (IMASIS), Spain
6. Clinical Practice Research Datalink GOLD (CPRD GOLD), the United Kingdom

For this study, we selected 6 data sources that were considered fit for purpose from the data sources available in the DARWIN EU® Database Catalogue. The selection process was based on several key criteria. Firstly, the number of records for TIG and for tetanus-prone wounds was assessed for each data source. Secondly, the geographical distribution of the data sources was considered to ensure a diverse and representative sample. Additionally, we selected data sources that cover the relevant setting for the particular outcomes of interest (primary care, registry, claims, inpatient hospital care, and outpatient hospital or specialist care settings). The experience gained from data sources that had previously participated in similar DARWIN EU® studies was considered, leveraging their proven reliability and data quality.

Information on data sources used with a justification for their choice in terms of ability to capture the relevant data is described in **Table 2**.

When assessing the reliability of data sources, the data partners were asked to describe their internal data quality process on the source data as part of the DARWIN EU® onboarding procedure. To further ensure data quality, we utilised the *Achilles* tool, which systematically characterised the data and presented it in a dashboard format that was inspected. The generated data characteristics such as age distribution, condition prevalence per year, data density, and measurement value distribution were compared against expectations for the data. Additionally, the data quality dashboard (DQD) provided more objective checks on plausibility consistently across the data sources. In terms of relevance, more general-purpose diagnostic tools, *CohortDiagnostics* (https://github.com/darwin-eu-dev/CohortDiagnostics) and *DrugExposureDiagnostics* (https://darwin-eu.github.io/DrugExposureDiagnostics/), were developed. The *CohortDiagnostic* R package evaluated phenotype algorithms for OMOP CDM datasets, offering a standard set of analytics for understanding patient capture including data generation. It provided additional insights into cohort characteristics, record counts, and index event misclassification. The *DrugExposureDiagnostics* R package assessed ingredient specific diagnostics for drug exposure records. Furthermore, timeliness was

guarded by extracting the release dates for each dataset in the network and monitoring when data were out-of-date with the expected refresh cycle (typically quarterly or half-yearly). In addition, it was important to have a clear understanding of the time period covered by each released data source, as this can vary across different domains. To facilitate this, the *CdmOnboarding* (and Achilles) packages contained a 'data density' plot. This plot displayed the number of records per OMOP domain on a monthly basis. This allowed getting insights when data collection started, when new sources of data were added, and until when data was included.

Table 2. Description of the selected data sources.

Country	Name of data source	Justification for inclusion	Health care setting	Type of data	Total number of individuals observed in each data source	Calendar period covered by each data source
Croatia	NAJS	Data source covers a healthcare setting where prescriptions for TIG and diagnoses of tetanus-prone wounds may be recorded	Primary care, outpatient specialist care, and inpatient hospital care	EHR, registries	4.8 million	01-01-2014 to 31-12-2022
Germany	InGef RDB	Data source covers a healthcare setting where prescriptions for TIG and diagnoses of tetanus-prone wounds may be recorded	Pharmacists, primary care, outpatient specialist care, and inpatient hospital care	Claims	10.5 million	01-01-2015 to 31-12-2024
The Netherlands	IPCI	Data source covers a healthcare setting where prescriptions for TIG and diagnoses of tetanus-prone wounds may be recorded	Primary care	EHR	2.9 million	01-01-2006 to 31-12-2024
Spain	BIFAP	Data source covers a healthcare setting where prescriptions for TIG and diagnoses of tetanus-prone wounds may be recorded	Primary care, hospital inpatient care	EHR, registries	30.3 million	01-07-1998 to 17-02-2025
Spain	IMASIS	Data source covers a healthcare setting where prescriptions for TIG and diagnoses of tetanus-prone wounds may be recorded	Outpatient and inpatient hospital care	EHR	1.8 million	01-01-1990 to 10-01-2025
The United Kingdom	CPRD GOLD	Data source covers a healthcare setting where prescriptions for TIG and diagnoses of tetanus-prone wounds may be recorded	Primary care, hospital outpatient, and inpatient care	EHR	17.5 million	09-09-1987 to 12-12-2024

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; EHR = Electronic Health Record; IMASIS = Institut Municipal Assistència Sanitària Information System; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; TIG = tetanus immunoglobulin.

National Public Health Information System (NAJS), Croatia

The National Public Health Information System (Nacionalni javnozdravstveni informacijski sustav - NAJS) is an organised system of information services by the Croatian Institute of Public Health. This data source was established in 1998, with nationwide coverage, representing approximately 5.4 million inhabitants. Settings covered include public primary, secondary/outpatient, and inpatient care. Data is retrieved primarily from EHR and holds information on demographics, inpatient and outpatient visits, conditions and procedures, drugs (outpatient and inpatient prescriptions), measurements, and inpatient and outpatient dates of death. NAJS provides linkage between medical and public health data collected and stored in health registries and other health data collections, including cancer registry, mortality, work injuries, occupational diseases, communicable and non-communicable diseases, health events, disabilities, psychosis and suicide, diabetes, drug abuse, and others. The CDM population comprises all publicly insured persons residing in Croatia starting in 2015. NAJS provided data from 2017 onwards only, as prior data might include information on duplicated patients. Data is included up to the end of 2022, which is the end of secondary conciliatory care data availability.

InGef Research Database (InGef RDB), Germany

The InGef data source comprises anonymised longitudinal claims data of about 10 million individuals across more than 50 statutory health insurance providers (SHIs) throughout Germany. Data are longitudinally linked over a period of currently ten years. Patients can be traced across health care sectors. All patient-level and provider-level data in the InGef research database are anonymised to comply with German data protection regulations and German federal law. German SHI claims data available in the InGef database includes information on demographics (year of birth, gender, death date if applicable, region of residence on administrative district level); hospitalisations; outpatient services (diagnoses, treatments; specialities of physicians); dispensing of drugs; dispensing of remedies and aids; and sick leave and sickness allowance times. Drugs dispensed in an inpatient setting are generally not captured, except for some drug administrations, which are coded as procedures. In the outpatient setting, diagnostic codes and procedures are recorded only at the end of each quarter. In addition, costs or cost estimates from SHI perspective are available for all important cost elements. All diagnoses in Germany are coded using the International Classification of Diseases, version 10 in the German Modification (ICD-10-GM). The persistence (membership over time) is rather high in the InGef data source: During a time period of 5 years (2009 to 2013), 70.6% of insurance members survived and remained insured with the same SHI without any gap in their observational time. Persons leaving one of the participating SHIs and entering another participating SHI can be linked during yearly database consistency updates and are thus not lost over time. The InGef data source is dynamic in nature, i.e., claims data are updated in an ongoing process and new SHIs may join or leave the data source. By law, only the last 10 years of data are allowed to be used. At every new release this window shifts, dropping older data and adding new data.

Integrated Primary Care Information (IPCI), the Netherlands

The Integrated Primary Care Information (IPCI) data source is a longitudinal observational data source containing routinely collected data from computer-based patient records of a selected group of GPs throughout the Netherlands (N=723). These records include demographic information, complaints and symptoms, diagnoses, laboratory test results, lifestyle factors (in limited amount), and correspondence with secondary care, such as referral and discharge letters. IPCI was started in 1992 by the department of Medical Informatics of the Erasmus University Medical Center in Rotterdam with the objective of enabling better post marketing surveillance of drugs. The current data source includes patient records from 2006 on, when the size of the data source started to increase significantly. In 2016, IPCI was certified as Regional Data Center. Since 2019 the data is also standardised to the Observational Medical Outcomes Partnership common data model (OMOP CDM), enabling collaborative research in a large network of data sources within the Observational Health Data Sciences and Informatics (OHDSI) community. The primary goal of

IPCI is to enable medical research. In addition, reports are generated to inform GPs and their organisations about the provided care. Contributing GPs are encouraged to use this information for their internal quality evaluation. The IPCI data source is registered on the European Medicines Agency (EMA) ENCePP resources database (https://catalogues.ema.europa.eu/node/994).

Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público (BIFAP), Spain

BIFAP (http://www.bifap.org/index_EN.html) is a longitudinal population-based data source of medical patient records of the Spanish National Health Service (SNS) from 9 participating Regions throughout Spain out of the 17 Spanish Regions. The population currently included represents 36% of the total Spanish population. Spain has a SNS that provides universal access to health services through the Regional Healthcare Services. Primary care physicians (PCPs), both general practitioners and paediatricians, have a central role. They act as gatekeepers of the system and also exchange information with other levels of care to ensure the continuity of care. Most (98.9%) of the population is registered with a PCP and, in addition, most drug prescriptions are written at the primary care level. BIFAP includes a collection of data sources linked at individual patient level. The main one is the Primary care Database given the central role of PCPs in the SNS. Linked, there are additional important structural data sources like the medicines dispensed at community pharmacies and the patients' hospital diagnosis at discharge. 7 out of the 9 regions have linkage to hospital data. However, hospital data is available for different time periods for each region. From 2014 onwards, linkage to hospital data is available for more than 68% of patients. Linkage to SARS-CoV-2 diagnostics test and COVID-19 vaccination registries are also included. Additional data sources are also linked for a subset of patients (cause of death registry). BIFAP program is a non-profit program financed by the Spanish Agency of Medicines and Medical Devices (AEMPS), a government agency belonging to the Ministry of Health in collaboration with the regional health authorities.

Institut Municipal Assistència Sanitària Information System (IMASIS), Spain

The Institut Municipal Assistència Sanitària Information System (IMASIS) is the Electronic Health Record (EHR) system of Parc de Salut Mar Barcelona which is a complete healthcare services organisation. Currently, this information system includes and shares the clinical information of two general hospitals (Hospital del Mar and Hospital de l'Esperança), one mental health care centre (Centre Dr. Emili Mira) and one social-healthcare centre (Centre Fòrum) including emergency room settings, which are offering specific and different services in the Barcelona city area (Spain). At present, IMASIS includes clinical information from around 1 million individuals with at least one diagnosis and who have used the services of this healthcare system since 1990 and from different settings such as admissions, outpatients, emergency room, and major ambulatory surgery. The diagnoses are coded using The International Classification of Diseases ICD-9-CM and ICD-10-CM. The average follow-up period per patient in years is 6.37 (SD±6.82).

Clinical Practice Research Datalink GOLD (CPRD GOLD), the United Kingdom

The Clinical Practice Research Datalink (CPRD) GOLD is a data source of anonymised electronic health records (EHR) from General Practitioner (GP) clinics in the UK that use the Vision® software system for their management.[7] In the UK, 98% of the population is registered with GPs responsible for non-emergency care and referrals. Participating GPs provide CPRD EHR for all registered patients who did not specifically request to opt out of data sharing. Covering 4.3% of the current UK population, GOLD includes 4.9% of contributing GP practices, providing comprehensive information within its defined source population. GOLD contains data from all four UK constituent countries, and the current regional distribution of its GP practices is 0.89% in England, 61.13% in Scotland, 26.41% in Wales, and 11.57% in Northern Ireland (January 2025).

CPRD GOLD data include patient's demographic, biological measurements, clinical symptoms and diagnoses, referrals to specialists/hospital and their outcome, laboratory tests/results, and prescribed medications. GPs receive information about patient contacts with secondary care, but this information

must be manually entered into the patient record and therefore, may be incomplete. GOLD has been assessed and found broadly representative of the UK general population in terms of age and sex.[7] GOLD has been widely used internationally for observational research to produce nearly 3,000 peer-reviewed publications, making CPRD GOLD the most influential UK clinical data source so far.[8-10]

In terms of quality checks, the integrity, structure, and format of the data are reviewed. Collection-level validation ensures integrity by checking that data received from practices contain only expected data files and ensures that all data elements are of the correct type, length, and format. Duplicate records are identified and removed. Transformation-level validation checks for referential integrity between records ensure that there are no orphan records included in the data source (for example, that all event records link to a patient), while research-quality-level validation covers the actual content of the data. CPRD GOLD provides a patient-level data quality metric in the form of a binary 'acceptability' flag. This is based on recording and internal consistency of key variables, including date of birth, practice registration date and transfer out date.

10.3. Study period

The study period was from 1st of January 2017 until 31st of December 2023 (or the latest date available) (please see **Table 2** for more details on the last update for each data source).

10.4. Follow-up

Follow-up started when study participants fulfilled inclusion criteria. For incidence estimations, individuals were required to have available data records between 1st of January 2017 and 31st of December 2023 (or the latest date available), and at least 1 year of data visibility prior to becoming eligible for study inclusion. For prevalence and treatment rate estimations, individuals with available data records between 1st of January 2017 and 31st of December 2023 (or the latest date available) were included. End of follow-up was defined as earliest of 1) end of study period (31st of December 2023), 2) end of data availability, 3) loss to follow-up, or 4) death, whichever came first. For the estimation of incidence rates of outcomes of interest, the first occurrence of the outcome of interest was also included as a censoring criterion.

The operational definition of the index date and other primary time anchors are presented by means of **Table 3**.

Table 3. Operational definition of time 0 (index date) and other primary time anchors.

Study population names	Time Anchor Description	Number of entries	Type of entry	Washout window	Care Setting[1]	Code Type[2]	Diagnosis position	Incident with respect to…	Measurement characteristics/ validation	Source of algorithm
All participants from the respective data source eligible for the study – Incident use of TIG	Study entry date	Singly entry	Incident	[-365, -1]	IP, OP, OT	RxNorm	n/a	Prior use of TIG	n/a	n/a
All participants from the respective data source eligible for the study – Prevalent use of TIG	Study entry date	Participants can be considered multiple times	Prevalent	n/a	IP, OP, OT	RxNorm	n/a	n/a	n/a	n/a
All participants from the respective data source eligible for the study – Treatment rate of TIG	Study entry date	Multiple entries	Prevalent	n/a	IP, OP, OT	RxNorm	n/a	n/a	n/a	n/a
All participants from the respective data source eligible for the study – Incident diagnosis of tetanus prone wounds	Study entry date	Single entry	Incident	[-180, -1]	IP, OP, OT	SNOMED	n/a	Prior diagnosis of tetanus-prone wounds	n/a	n/a
All participants from the respective data	Study entry date	Participants can be considered	Prevalent	n/a	IP, OP, OT	SNOMED	n/a	n/a	n/a	n/a

Study population names	Time Anchor Description	Number of entries	Type of entry	Washout window	Care Setting[1]	Code Type[2]	Diagnosis position	Incident with respect to…	Measurement characteristics/ validation	Source of algorithm
source eligible for the study – Prevalent diagnosis of tetanus prone wounds		multiple times								

TIG = tetanus immunoglobulin; [1] IP = inpatient, OP = outpatient, OT = other, n/a = not applicable.

Incidence, prevalence, and treatment rate all required an appropriate denominator population. For prevalence and treatment rate, individuals entered the denominator population on the respective date of the latest of the following: 1) study start date or 2) start of observation period. An example of entry and exit into the denominator population for incidence calculations is shown in **Figure 1**. In this example, person ID 1 has already sufficient prior history before the study start date, and the observation period ends after the study end date, so they contribute during the complete study period. Person ID 2 and ID 4 enter the study only when they have sufficient prior history. Person ID 3 leaves when exiting the data source (the end of observation period). Lastly, person ID 5 has two observation periods in the data source. The first period contributes time from the study start until the end of observation period, the second starts contributing time again once sufficient prior history is reached and exits at the study end date.

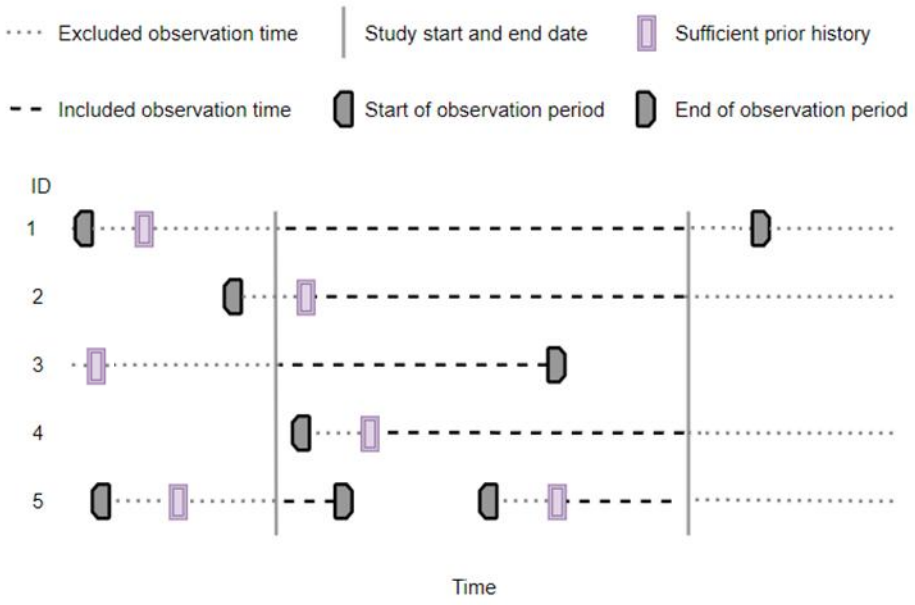

Figure 1. Included observation time for the denominator population of incidence calculations.

10.5. Study population with inclusion and exclusion criteria

The study population included all individuals registered in the data source between the 1st of January 2017 and 31st of December 2023 (or the latest date available). For incidence calculations, individuals were required to have at least 1 year of data visibility prior to becoming eligible for study inclusion. Additionally, for incidence calculations of TIG use, individuals were not allowed to have a record of TIG in the 365 days prior to study inclusion. For incidence calculations of tetanus-prone wounds, individuals were not allowed to have a diagnosis of tetanus-prone wounds in the 180 days prior to study inclusion. For prevalence and treatment rate calculations, no prior data visibility was required.

The operational definitions of inclusion criteria are presented by means of **Table 4.**

Table 4. Operational definitions of inclusion criteria.

Criterion	Details	Order of application*	Assessment window	Care Settings[1]	Code Type	Diagnosis position[2]	Applied to study populations:	Measurement characteristics/ validation	Source for algorithm
Observational period in the data source during the period 01/01/2017–31/12/2023 (or the latest date available)	All individuals present in the data source during the period 2017–2023 (or the latest date available)	n/a	n/a	IP, OP, OT	n/a	n/a	All participants from the respective data source eligible for the study	n/a	n/a
Prior data source history required for incidence calculations	Study participants were required to have 365 days of prior history observed before contributing observation time for incidence calculations, to enable the identification of incident records, i.e., no record during the respective period	Prior	[-365, 0]	IP, OP, OT	n/a	n/a	All participants from the respective data source eligible for the study	n/a	n/a
Washout period TIG required for incidence calculations	Study participants were required to have no record of TIG in the 365 days prior to contributing observation time for incidence calculations, to enable the identification of incident TIG records[#]	After	[-365, -1]	IP, OP, OT	RxNorm	n/a	All participants from the respective data source eligible for the study initiating treatment with TIG	n/a	n/a
Washout period tetanus-prone wound required for incidence calculations	Study participants were required to have no record of tetanus-prone wounds in the 180 days prior to contributing observation time for incidence calculations, to enable the identification of incident wound records[#]	After	[-180, -1]	IP, OP, OT	SNOMED	n/a	All participants from the respective data source eligible for the study diagnosed with tetanus-prone wound	n/a	n/a

TIG = tetanus immunoglobulin; [1] IP = inpatient, OP = outpatient, OT = other, n/a = not applicable. [2] Specify whether a diagnosis code is required to be in the primary position (main reason for encounter). *Order of application specifies whether the eligibility criterion is applied before or after selection of the study entry date. For example, selecting “before” means that all possible study entry dates are identified, and then one or more is chosen. For instance, selecting 'after' means that the first possible study entry date is chosen, followed by the application of the inclusion and/or exclusion criteria. If the patient does not meet the criterion, then the patient drops out. [#] = For incidence calculations of TIG, an assessment period of 365 days was applied

during which individuals were not allowed to have a TIG record to ensure incident TIG use. Individuals receiving TIG will also receive a tetanus vaccination [11, 12], making it unlikely that an individual would receive more than 1 TIG within a year. For incidence calculations of tetanus-prone wounds, an assessment period of 180 days was applied during which individuals were not allowed to have a wound record to decrease the chance of including chronic wounds.

10.6. Variables

10.6.1. Exposure

Not applicable.

10.6.2. Outcomes

Objective 1:

The outcome for *objective 1* was use of TIG, defined as a recorded RxNorm prescription or SNOMED procedure code for TIG, among individuals meeting the inclusion criteria during the study period.

Objective 2:

Tetanus prone wounds were classified into probable high-risk and possible categories to reflect varying levels of clinical concerns and likelihood of requiring tetanus prophylaxis, given the limited availability of clinical details in real-world data mapped to OMOP CDM, where granular wound characteristics (e.g., contamination level, depth) are often not captured in coded data. Probable high-risk wounds were defined using concept IDs corresponding to injuries likely to meet CDC criteria for dirty or major wounds [13], while possible tetanus-prone wounds were defined using concept IDs for less severe injuries where tetanus risk cannot be excluded but is lower, or where clinical details were missing. Prespecified antibiotics or wound specific procedures were used as proxies to provide clinical context for wounds where detailed characteristics (e.g., contamination) were not available, helping to identify those more likely to be tetanus prone.[11-13] The outcomes for *objective 2* were as follows:

- Occurrence of probable high-risk and possible tetanus-prone wounds among individuals meeting the inclusion criteria during the study period, defined as:
  - A SNOMED code for a tetanus-prone wound, in combination with any of the following:
    - An RxNorm prescription record of systemic antibiotics (either IV or oral broad-spectrum) within 7 days prior or following the tetanus-prone wound record.
    - A SNOMED code for pre-specified procedures within ±3 days prior or following the tetanus-prone wound record.
- Occurrence of probable high-risk tetanus-prone wounds among individuals meeting the inclusion criteria during the study period, defined based on any of the following:
  - A SNOMED code for a probable high-risk tetanus-prone wound (broad definition).
  - A SNOMED code for a probable high-risk tetanus-prone wound, in combination with any of the following (narrow definition):
    - An RxNorm prescription record of systemic antibiotics (either IV or oral broad-spectrum) within 7 days prior or following the tetanus-prone wound record.
    - A SNOMED code for pre-specified procedures within 3 days prior or following the tetanus-prone wound record.
- Occurrence of possible tetanus-prone wounds among individuals meeting the inclusion criteria during the study period, defined as:
  - A SNOMED code for a possible tetanus-prone wound, in combination with any of the following:
    - An RxNorm prescription record of systemic antibiotics (either IV or oral broad-spectrum) within 7 days prior or following the tetanus-prone wound record.

- A SNOMED code for pre-specified procedures within ±3 days prior or following the tetanus-prone wound record.

The concept sets used for the identification of the outcomes of interest are described in **Annex I**. The final code lists were determined following input from EMA. The operational definition of the outcomes is presented in **Table 5**.

10.6.3. Other covariates, including confounders, effect modifiers, and other variables

Covariate for stratification in population-level utilisation of TIG (*objective 1*) included:

- Calendar year

Covariates for stratification in population-level descriptive epidemiology of any tetanus-prone wounds category (*objective 2*) included:

- Calendar year

In addition, probable high-risk tetanus-prone wounds (*objective 2*) were stratified into:

- Type of wound: Overall, 'penetrating or puncture wounds', 'wounds with dirt, soil, faeces, or saliva', 'wounds with foreign bodies', 'wounds containing devitalised tissue'

The operational definition of the covariates is described in **Table 6**. The list of concepts for the type of wounds is provided in **Annex I**.

Table 5. Operational definitions of outcome.

Outcome name	Details	Primary outcome?	Type of outcome	Washout window	Care Settings[1]	Code Type	Diagnosis Position[2]	Applied to study populations	Measurement characteristics/validation	Source of algorithm
TIG - first incident record during study period	Code lists provided in **Annex I**	Yes	Count	[-365, -1]	IP, OP, OT	RxNorm	n/a	All individuals present in data source during study period	n/a	n/a
TIG - prevalence and treatment rate	Code lists provided in **Annex I**	Yes	Count	n/a	IP, OP, OT	RxNorm	n/a	All individuals present in data source during study period	n/a	n/a
Tetanus-prone wounds - first incident diagnosis during study period	Code lists provided in **Annex I**	Yes	Count	[-180, -1]	IP, OP, OT	SNOMED	n/a	All individuals present in data source during study period	n/a	n/a
Tetanus-prone wounds - prevalence	Code lists provided in **Annex I**	Yes	Count	n/a	IP, OP, OT	SNOMED	n/a	All individuals present in data source during study period	n/a	n/a

TIG = tetanus immunoglobulin; [1] IP = inpatient, OP = outpatient, OT = other, n/a = not applicable; [2] Specify whether a diagnosis code is required to be in the primary position (main reason for encounter).

Table 6. Operational definitions of covariates.

Characteristic	Details	Type of variable	Assessment window	Care Settings[1]	Code Type	Diagnosis Position[2]	Applied to study populations	Measurement characteristics/ validation	Source for algorithm
Calendar year	Results are stratified per calendar year	Categorical	0	IP, OP, OT	n/a	n/a	All study populations	n/a	n/a
Type of wound	Code lists provided in **Annex I**	Categorical	0	IP, OP, OT	SNOMED	n/a	All participants from the respective data source eligible for the study diagnosed with tetanus-prone wound	n/a	n/a

[1] IP = inpatient, OP = outpatient, OT = other, n/a = not applicable
[2] Specify whether a diagnosis code is required to be in the primary position (main reason for encounter).

10.7. Study size

No formal sample size calculation was conducted for this descriptive study, as the objective was to describe the incidence, prevalence, and treatment rate of TIG records and tetanus-prone wounds among the study population, irrespective of sample size. Based on a preliminary feasibility assessment, the expected number of TIG person counts differed across data sources and ranged from 1,500 in IMASIS to 64,800 in NAJS, and the number of person counts for tetanus-prone wounds varied by wound type.

10.8. Data transformation

Analyses were conducted separately for each data source. Before study initiation, test runs of the analytics were performed on a subset of the data sources and on a simulated set of patients, and quality control checks were performed. After all the tests had passed, the final package was released in the version-controlled study repository for execution against all the participating data sources. The data partners locally executed the analytics against the OMOP CDM in R Studio and reviewed and approved the, by default, aggregated results. The study results of all data sources were checked, after which they were made available to the team, and the Dissemination Phase started. All results were locked and timestamped for reproducibility and transparency.

10.9. Statistical methods

10.9.1. Patient privacy protection

Cell suppression was applied, as required by data sources, to protect individual's privacy. Cell counts <5 were masked.

10.9.2. Main statistical methods

The type of analysis by study type was fixed and can be observed in **Table 7**.

Table 7. Description of study types and type of analysis.

Study type	Type of analysis
Population Level DUS	• Number of TIG records • Population-based incidence rates of TIG • Population-based treatment rates of TIG • Population-based prevalence of TIG prescriptions
Population-level descriptive epidemiology	• Number of tetanus-prone wounds, estimated per wound category (described in **section 10.6.2**) and stratified by wound type (described in **section 10.6.3**) • Incidence rates of tetanus-prone wounds, estimated per wound category (described in **section 10.6.2**) and stratified by wound type (described in **section 10.6.3**) • Prevalence of tetanus-prone wounds, estimated per wound category (described in **section 10.6.2**) and stratified by wound type (described in **section 10.6.3**)

DUS = Drug Utilisation Study; TIG = Tetanus immunoglobulin.

R-packages

The incidence, prevalence, and treatment rate of TIG records, and the incidence and prevalence of tetanus-prone wounds among the study population were calculated based on OMOP CDM mapped data using the *IncidencePrevalence* R package, developed by DARWIN EU® (https://github.com/darwin-eu/IncidencePrevalence).

Number of TIG records and tetanus-prone wounds

The overall number of new TIG prescriptions and of new tetanus-prone wounds were provided.

Incidence calculations of TIG use and tetanus-prone wounds

Overall and annual incidence rates of TIG use were calculated as the number of new users of TIG per 1,000 PYs of the population at risk of getting exposed during the overall study period and per calendar year. In addition, overall and annual incidence rates of tetanus-prone wounds were calculated per wound category (probable high-risk and possible tetanus-prone wounds, probable high-risk tetanus-prone wounds (narrow definition), probable high-risk tetanus-prone wounds (broad definition), and possible tetanus-prone wounds) as the number of newly diagnosed individuals per 1,000 PYs of the population at risk of getting exposed. Estimates for the narrow and broad definitions of 'probable high-risk tetanus-prone wounds' were also stratified into 'penetrating or puncture wounds', 'wounds with dirt, soil, faeces, or saliva', 'wounds with foreign bodies', and 'wounds containing devitalised tissue'. Results were reported per data source. For each individual, at least 1 year of data visibility was required prior to study inclusion. For incidence calculations of TIG use, individuals were not allowed to have a TIG record in the 365 days prior to study inclusion. For incidence calculations of tetanus-prone wounds, individuals were not allowed to have a tetanus-prone wound diagnosis in the 180 days prior to study inclusion. Those study participants who entered the denominator population then contributed time-at-risk up to the start of their new outcome of interest during the study period. Only the first prescription record and wound diagnosis record of a participant during the study period contributed to the incidence rate, with participants' time contributions censored as soon as they experienced the outcome of interest. Participants without the outcome of interest contributed time-at-risk as described above. Time-at-risk of subjects who died was censored at the time of death. Similarly, time-at-risk of subjects who were lost to follow-up was censored at the time of loss to follow-up (last contact). Subjects with data until the end of the study period without experiencing the outcome of interest were administratively censored at the end of the study period. Incidence rates are given together with 95% Poisson confidence intervals.

An illustration of the calculation of incidence of the outcome of interest is shown below in **Figure 2**. Participant ID 1 and ID 4 contributed time-at-risk up to their first event during the study period. Patient ID 2 and ID 5 did not have the outcome of interest and so contributed time-at-risk but no incident outcomes. Meanwhile, participant ID 3 first contributed time-at-risk starting at the day when the washout period of a previous exposure, before study start, had ended, and ended when the next occurrence of the outcome of interest started. Repeated events were not taken into consideration, which means that time-at-risk after experiencing the outcome of interest during the study period was excluded.

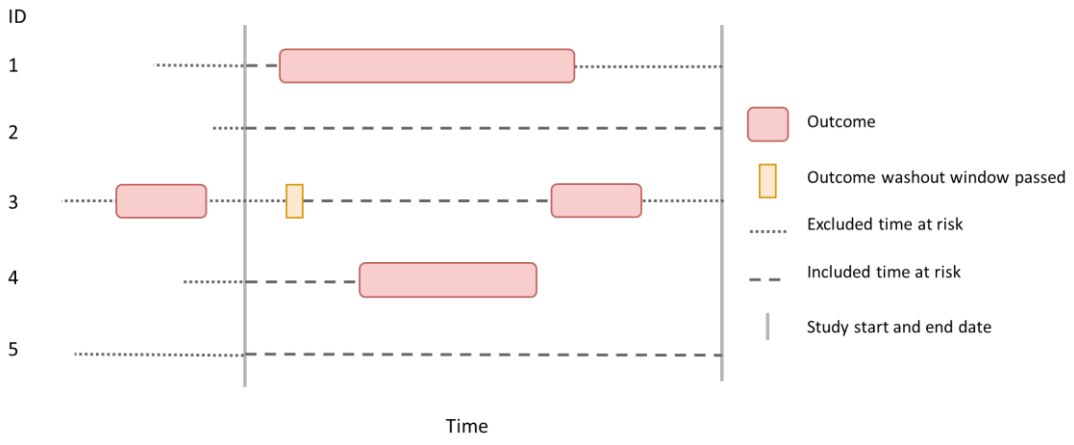

Figure 2. Incidence example.

In the current study, the denominator counts for the hospital-based IMASIS data source were derived from the hospital's catchment area, rather than from a hospital data source population with known person-time-at-risk. Consequently, the person-time-at-risk of TIG use or tetanus-prone wound diagnosis was unknown; for this reason, IMASIS was excluded from the incidence calculations.

Treatment rate calculations of TIG

Treatment rates were calculated both overall and annually, expressed as the total number of TIG records during a given period per 1,000 PYs of the population at risk of getting exposed to TIG during that period. Multiple TIG records per individual were allowed. Study participants contributed time-at-risk from study entry until the occurrence of the outcome of interest during the study period. As all prescriptions during the study period contributed to the treatment rate, study participants contributed time-at-risk again after a TIG record. Participants without the outcome of interest contributed time-at-risk as described above. Time-at-risk of subjects who died were censored at the time of death. Similarly, time-at-risk of subjects who were lost to follow-up were censored at the time of loss to follow-up (last contact). Subjects with data until the end of the study period without experiencing the outcome of interest were administratively censored at the end of the study period. Treatment rates were given together with 95% Poisson confidence intervals.

An illustration of the calculation of treatment rate is shown below in **Figure 3**. Participant ID 1 and ID 4 contributed time-at-risk up to their first event during the study period and continue contributing time-at-risk after the outcome of interest had ended. Participant ID 2 and ID 5 did not have the outcome of interest and so contributed time-at-risk but no outcomes. Meanwhile, participant ID 3 did not have any observation time, i.e., time-at-risk, prior to the first exposure, so this patient started contributing time-at-risk after the first exposure during the study period up until the second outcome of interest and contributed time-at-risk again after the second outcome of interest.

In the current study, the denominator counts for the hospital-based IMASIS data source were derived from the hospital's catchment area, rather than from a hospital data source population with known person-time-at-risk. Consequently, the person-time-at-risk of TIG use or tetanus-prone wound diagnosis was unknown; for this reason, IMASIS was excluded from the treatment rate calculations.

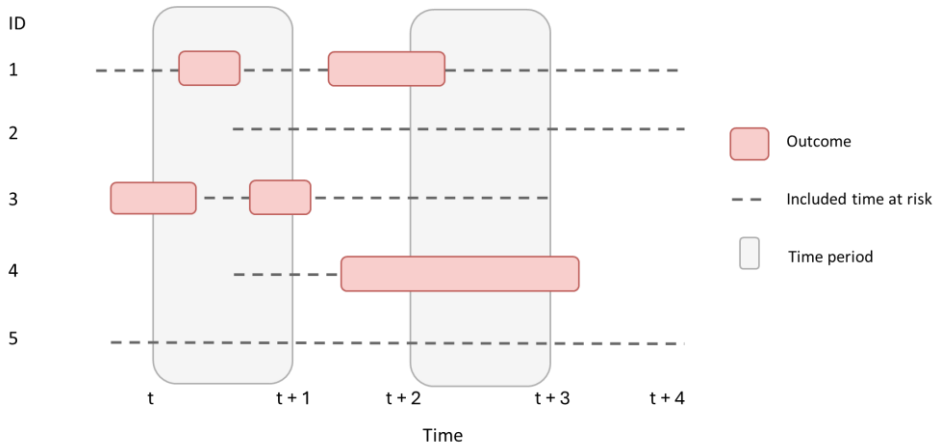

Figure 3. Treatment rate example.

Prevalence calculations of TIG use and tetanus-prone wounds

Prevalence was calculated as overall and annual period prevalence, which summarised the total number of individuals with an outcome of interest during a given period divided by the population at risk of getting exposed during that period per outcome of interest. Therefore, period prevalence represented the proportion of individuals experiencing the outcome at any time during a specified interval. Binomial 95%

confidence intervals were calculated. Prevalence estimates of tetanus-prone wounds were provided per wound category: probable high-risk and possible tetanus-prone wounds, probable high-risk tetanus-prone wounds (narrow definition), probable high-risk tetanus-prone wounds (broad definition), and possible tetanus-prone wounds. Estimates for the narrow and broad definitions of 'probable high-risk tetanus-prone wounds' were also stratified into 'penetrating or puncture wounds', 'wounds with dirt, soil, faeces, or saliva', 'wounds with foreign bodies', and 'wounds containing devitalised tissue'. Results were reported per data source.

An illustration of the calculation of period prevalence is shown below in **Figure 4**. Between time t+2 and t+3, two of the five study participants experienced the outcome of interest, giving a prevalence of 40%. Meanwhile, for the period t to t+1, all five also had some observation time during the year with one of the five study participants experiencing the outcome of interest, giving a prevalence of 20%.

The catchment area of hospital data source IMASIS was used as the denominator of this data source.

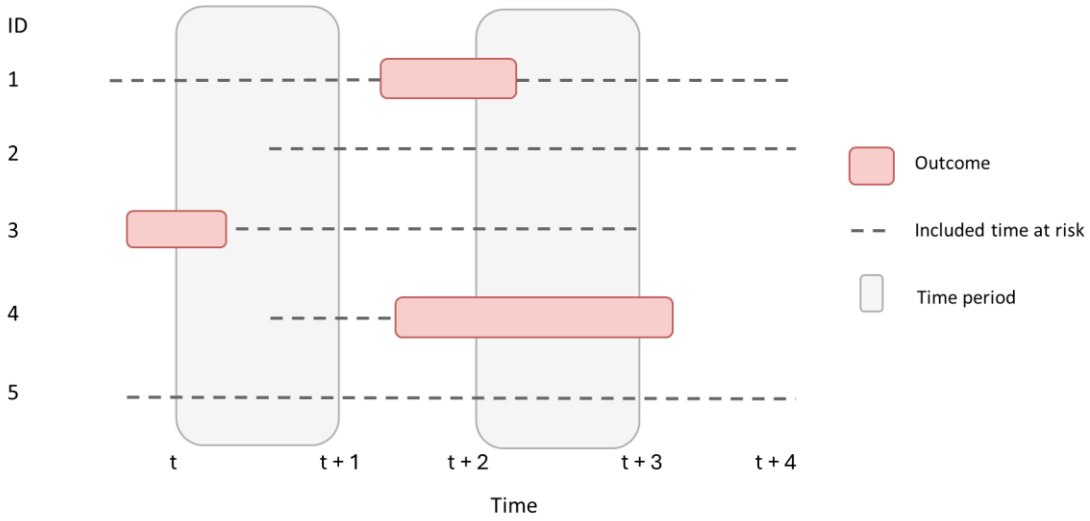

Figure 4. Prevalence example.

Meta-analysis of incidence and prevalence estimates

Results from incidence and prevalence analyses were presented separately for each data source. Additionally, a random-effect meta-analysis to pool incidence or prevalence estimates from ≥2 data sources per healthcare setting was performed.

10.9.3. Missing values

We assumed that the absence of a prescription record in the data source means that the person did not receive TIG. Similarly, for assessment of wounds, we assumed that the absence of a recorded diagnostic code for a given wound means that that condition was not present or not recorded in the context of routine clinical care.

10.9.4. Sensitivity analysis

Not applicable.

11. DATA MANAGEMENT

11.1. Data management

All data sources were mapped to the OMOP CDM. This enabled the use of standardised analytics and tools across the network since the structure of the data, and the terminology system was harmonised. The OMOP CDM is developed and maintained by the Observational Health Data Sciences and Informatics (OHDSI) initiative and is described in detail on the wiki page of the CDM: https://ohdsi.github.io/CommonDataModel and in The Book of OHDSI: http://book.ohdsi.org.

The analytic code for this study was written in R. Each data partner executed the study code against their data source containing patient-level data and then returned the results set which only contained aggregated data. The results from each of the contributing data sites were then combined in tables and figures for the study report.

11.2. Data storage and protection

For this study, participants from various EU member states processed personal data collected from individuals in national/regional electronic health record data sources. Due to the sensitive nature of this personal medical data, it was important to be fully aware of ethical and regulatory aspects and to strive to take all reasonable measures to ensure compliance with ethical and regulatory issues on privacy.

All data sources used in this study had already been used for pharmaco-epidemiological research and had a well-developed mechanism to ensure that European and local regulations dealing with ethical use of the data and adequate privacy control were adhered to. In agreement with these regulations, rather than combining person-level data and performing only a central analysis, local analyses were run, which generated non-identifiable aggregate summary results.

12. QUALITY CONTROL

General database quality control

A number of open-source quality control mechanisms for the OMOP CDM have been developed (see Chapter 15 of The Book of OHDSI http://book.ohdsi.org/DataQuality.html). In particular, it is expected that data partners have run the OHDSI *DataQualityDashboard* tool (https://github.com/OHDSI/DataQualityDashboard). This tool provided numerous checks relating to the conformance, completeness, and plausibility of the mapped data. Conformance focused on checks that describe the compliance of the representation of data against internal or external formatting, relational, or computational definitions, completeness in the sense of data quality was solely focused on quantifying missingness, or the absence of data, while plausibility seeks to determine the believability or truthfulness of data values. Each of these categories had one or more subcategories and were evaluated in two contexts: validation and verification. Validation related to how well data align with external benchmarks with expectations derived from known true standards, while verification related to how well data conform to local knowledge, metadata descriptions, and system assumptions.

Study specific quality control

When defining cohorts for medicinal products, a systematic search of possible codes for inclusion was identified using *CodelistGenerator* R package (https://github.com/darwin-eu/CodelistGenerator). This software allowed the user to define a search strategy and queried the vocabulary tables of the OMOP common data model so as to find potentially relevant codes.

The study code was based on the *IncidencePrevalence* R package. This package included numerous automated unit tests to ensure the validity of the codes, alongside software peer review and user testing. The R package will be made publicly available via GitHub.

13. RESULTS

The full set of the results from this study can be assessed through an interactive web application ("Shiny app") at EUPAS1000000685.

13.1. Participants

A total of 47,350,249 individuals who met all inclusion criteria during the study period were retained in the final study population to assess the incidence of TIG use (NAJS: 4,504,387; InGef RDB: 9,131,625; IPCI: 1,946,249; BIFAP: 26,148,442; CPRD GOLD: 5,619,546). InGef RDB and BIFAP contributed the largest proportion of included individuals during the study period, accounting for 19.3% and 55.2%, respectively (**Table 8**). The treatment rate of TIG during the study period was assessed among 49,751,558 individuals who met all inclusion criteria (NAJS: 4,556,202; InGef RDB: 9,658,796; IPCI: 2,163,147; BIFAP: 27,287,867; CPRD GOLD: 6,085,546). InGef RDB and BIFAP contributed the largest proportion of included individuals for treatment rate analyses during the study period, accounting for 19.4% and 54.8%, respectively (**Table 9**).The prevalence of TIG was assessed in the same study population as for treatment rate, with the addition of 400,000 individuals included in the catchment area of IMASIS.

Separate incidence rates were calculated for each category of tetanus-prone wounds. A total of 38,214,927 individuals who met all inclusion criteria during the study period were retained in the final study population to assess the incidence of probable high-risk and possible tetanus-prone wounds involving an antibiotic treatment or wound procedure (NAJS: 4,503,945; IPCI: 1,945,698, BIFAP: 26,146,639, CPRD GOLD: 5,618,645). BIFAP contributed the largest proportion of included individuals during the study period, accounting for 68.4%.For probable high-risk tetanus-prone wounds involving antibiotic treatment or a wound procedure, the study population included 38,217,938 individuals (NAJS: 4,504,469; IPCI: 1,946,095; BIFAP: 26,148,036; CPRD GOLD: 5,619,338). For probable high-risk tetanus-prone wounds without the requirement for an antibiotic treatment or wound procedure, the study population included 38,218,199 individuals (NAJS: 4,504,114; IPCI: 1,946,266; BIFAP: 26,148,320; CPRD GOLD: 5,619,499). Finally, for possible tetanus-prone wounds involving an antibiotic treatment or a wound procedure, 38,215,219 individuals were included (NAJS: 4,503,998; IPCI: 1,945,729; BIFAP: 26,146,740; CPRD GOLD: 5,618,752) (**Table 10**).

In separate analyses assessing the prevalence of tetanus-prone wounds, a total of 40,492,762 individuals who met all inclusion criteria during the study period were retained in the final study population (NAJS: 4,556,202; IPCI: 2,163,147; BIFAP: 27,287,867; IMASIS: 400,000; CPRD GOLD: 6,085,546). BIFAP contributed the largest proportion of included individuals during the study period, accounting for 67.4% (**Table 11**).

Table 8. Study attrition of included participants to assess the incidence of tetanus immunoglobulin use between 2017 and 2023, presented by data source.

Criteria	NAJS (n)*	InGef RDB (n)*	IPCI (n)*	BIFAP (n)*	CPRD GOLD (n)*
Starting population	4,853,340	10,512,283	2,984,928	30,311,044	17,526,900
Missing year of birth	4,853,340	10,512,283	2,984,928	30,311,044	17,526,900
Missing sex	4,853,340	10,512,283	2,984,928	30,311,044	17,526,900
Cannot satisfy age criteria during the study period based on year of birth	4,753,358	10,423,421	2,958,118	30,016,249	17,478,501
No observation time available during study period	4,556,568	9,674,926	2,173,707	27,306,417	6,116,557
Prior history requirement not fulfilled during study period	4,504,530	9,131,728	1,946,388	26,148,450	5,619,603
Starting analysis population	4,504,530	9,131,634	1,946,297	26,148,450	5,619,603
Apply washout criteria of 365 days (note, additional records may be created for those with an outcome)	4,504,387	9,131,625	1,946,249	26,148,442	5,619,546

*n = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

Table 9. Study attrition of included participants to assess the prevalence and treatment rate of tetanus immunoglobulin use between 2017 and 2023, presented by data source.

Criteria	NAJS (n)*	InGef RDB (n)*	IPCI (n)*	BIFAP (n)*	IMASIS (n)*#	CPRD GOLD (n)*
Starting population	4,853,340	10,512,283	2,984,928	30,311,044	400,000	17,526,900
Missing year of birth	4,853,340	10,512,283	2,984,928	30,311,044	n/a	17,526,900
Missing sex	4,853,340	10,512,283	2,984,928	30,311,044	n/a	17,526,900
Cannot satisfy age criteria during the study period based on year of birth	4,753,358	10,423,421	2,958,118	30,016,249	n/a	17,478,501
No observation time available during study period	4,556,568	9,674,926	2,173,707	27,306,417	n/a	6,116,557
Starting analysis population	4,556,202	9,658,796	2,163,147	27,287,867	400,000	6,085,546

*n = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; n/a = not applicable. # Please note that the catchment area of IMASIS is only used for prevalence analyses and no attrition steps were applied.

Table 10. Study attrition of included participants to assess the incidence of tetanus-prone wounds between 2017 and 2023, presented by wound category and by data source.

Criteria	Probable high-risk and possible tetanus-prone wounds				Probable high-risk tetanus-prone wounds (narrow)#				Probable high-risk tetanus-prone wounds (broad)#				Possible tetanus-prone wounds			
	NAJS (n)*	IPCI (n)*	BIFAP (n)*	CPRD GOLD (n)*	NAJS (n)*	IPCI (n)*	BIFAP (n)*	CPRD GOLD (n)*	NAJS (n)*	IPCI (n)*	BIFAP (n)*	CPRD GOLD (n)*	NAJS (n)*	IPCI (n)*	BIFAP (n)*	CPRD GOLD (n)*
Starting population	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900
Missing year of birth	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900
Missing sex	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900	4,853,340	2,984,928	30,311,044	17,526,900
Cannot satisfy age criteria during the study period based on year of birth	4,753,358	2,958,118	30,016,249	17,478,501	4,753,358	2,958,118	30,016,249	17,478,501	4,753,358	2,958,118	30,016,249	17,478,501	4,753,358	2,958,118	30,016,249	17,478,501
No observation time available during study period	4,556,568	2,173,707	27,306,417	6,116,557	4,556,568	2,173,707	27,306,417	6,116,557	4,556,568	2,173,707	27,306,417	6,116,557	4,556,568	2,173,707	27,306,417	6,116,557
Prior history requirement not fulfilled during study period	4,504,530	1,946,388	26,148,450	5,619,603	4,504,530	1,946,388	26,148,450	5,619,603	4,504,530	1,946,388	26,148,450	5,619,603	4,504,530	1,946,388	26,148,450	5,619,603
Starting analysis population	4,504,530	1,946,297	26,148,450	5,619,603	4,504,530	1,946,297	26,148,450	5,619,603	4,504,530	1,946,297	26,148,450	5,619,603	4,504,530	1,946,297	26,148,450	5,619,603
Apply washout criteria of 180 days (note, additional records may be created for those with an outcome)	4,503,945	1,945,698	26,146,639	5,618,645	4,504,469	1,946,095	26,148,036	5,619,338	4,504,114	1,946,266	26,148,320	5,619,499	4,503,998	1,945,729	26,146,740	5,618,752

= the narrow definition is defined as a probable high-risk tetanus-prone wound in combination with an antibiotic treatment or wound procedure, while the broad definition is defined as any probable high-risk tetanus-prone wound; *n = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System. Please note that the number of individuals included per data source is affected by the washout criteria of the respective wound category, causing differences in numbers between these wound categories.

Table 11. Study attrition of included participants to assess the prevalence of tetanus-prone wounds between 2017 and 2023, presented by data source.

Criteria	NAJS (n)*	IPCI (n)*	BIFAP (n)*	IMASIS (n)*#	CPRD GOLD (n)*
Starting population	4,853,340	2,984,928	30,311,044	400,000	17,526,900
Missing year of birth	4,853,340	2,984,928	30,311,044	n/a	17,526,900
Missing sex	4,853,340	2,984,928	30,311,044	n/a	17,526,900
Cannot satisfy age criteria during the study period based on year of birth	4,753,358	2,958,118	30,016,249	n/a	17,478,501
No observation time available during study period	4,556,568	2,173,707	27,306,417	n/a	6,116,557
Starting analysis population	4,556,202	2,163,147	27,287,867	400,000	6,085,546

*n = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; n/a = not applicable. # Please note that the catchment area of IMASIS is used for prevalence analyses and no attrition steps were applied.

13.2. Incidence rates of TIG use

The incidence of TIG was assessed across the various data sources, among eligible individuals who did not have a TIG record within 365 days prior to cohort entry. Overall, the incidence rates were low during the study period. The registry data source NAJS reported the highest incidence rate, with an overall incidence of 1.91 per 1,000 PYs, corresponding to 46,366 events over 24,318,672 PYs during the study period. In the primary care data sources, the incidence rates of TIG use ranged from 0.01 per 1,000 PYs in BIFAP to 0.44 per 1,000 PYs in IPCI. In the claims data source InGef RDB, the overall incidence rate was 0.03 per 1,000 PYs (**Table 12**). The pooled incidence rate based on incidence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 0.05 per 1,000 PYs (95% CI: 0.0004 – 6.50), as can be observed in the Shiny app at EUPAS1000000685.

Stratification by calendar year showed that the incidence rates of TIG fluctuated in NAJS, declined in IPCI and CPRD GOLD, while incidence rates were low and stable in InGef RDB and BIFAP during the study period. In NAJS, annual incidence rates started at 2.18 per 1,000 PYs in 2017, followed by a decline to 1.64 per 1,000 PYs in 2020, and a subsequent increase to 1.92 per 1,000 PYs in 2022. Annual incidence rates ranged from 0.04 per 1,000 PYs in 2017 to 0.03 per 1,000 PYs in 2023 in InGef RDB, and from 0.02 per 1,000 PYs in 2017 to 0.01 per 1,000 PYs in 2023 in BIFAP. In IPCI the incidence rate started at 0.58 per 1,000 PYs in 2017, corresponding to 640 events over 1,101,769 PYs, and decreased to 0.32 per 1,000 PYs in 2023, corresponding to 366 events over 1,158,993 PYs. CPRD GOLD reported 446 events over 3,997,672 PYs in 2017, which corresponded to an incidence rate of 0.11 per 1,000 PYs, followed by 44 reported events over 3,807,753 in 2018 and a subtle decline during the remaining calendar years (**Figure 5, Table S1**). Detailed information about the number of events and PYs per calendar year can be found in the Shiny app.

Table 12. Incidence rate of TIG, overall, during the study period, per data source.

Data source	Number of persons	Number of events	Person years (PYs)	Incidence rate per 1,000 PYs	95% CI (lower; upper CI)
NAJS	4,504,387	46,366	24,318,672	1.91	1.89; 1.92
InGef RDB	9,131,625	1,677	50,651,552	0.03	0.03; 0.03
IPCI	1,946,249	3,567	8,072,924	0.44	0.43; 0.46
BIFAP	26,148,442	1,332	133,222,626	0.01	0.01; 0.01
CPRD GOLD	5,619,546	600	23,525,417	0.03	0.02; 0.03

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; PYs = person years.

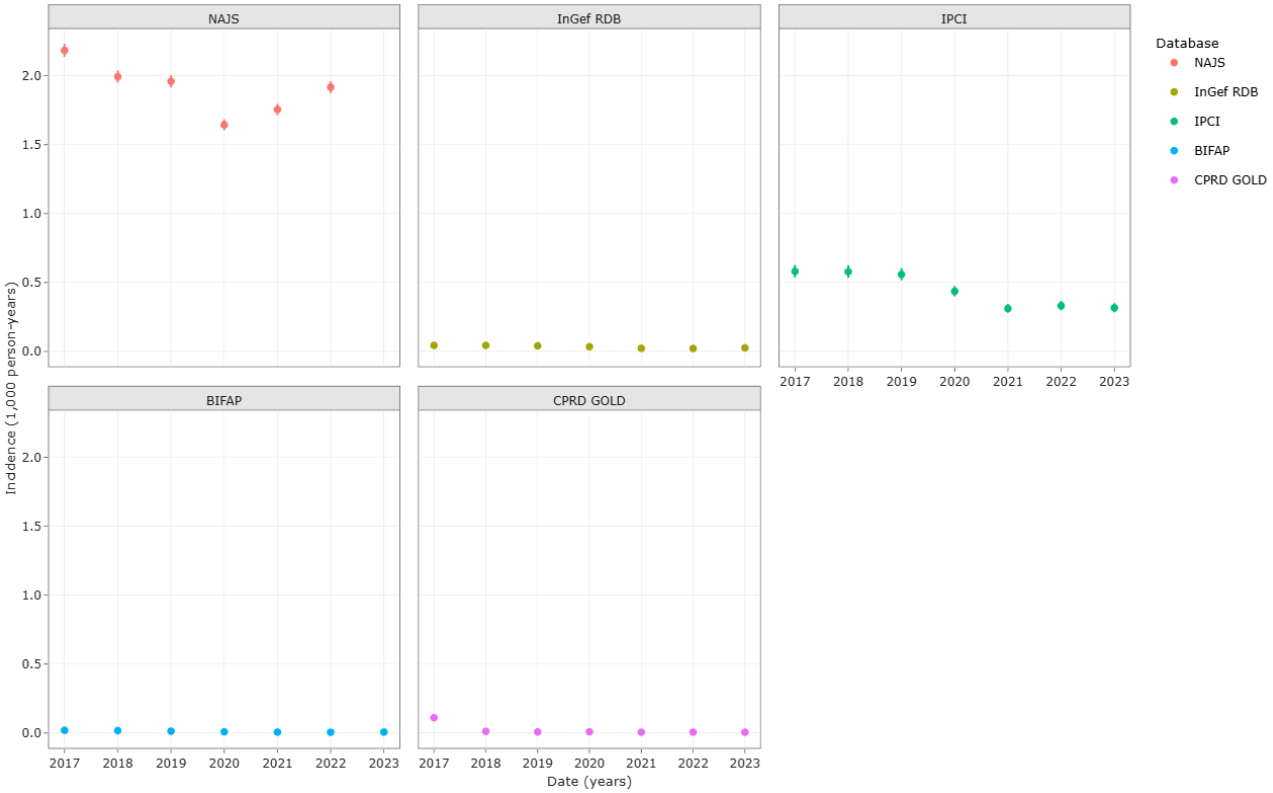

Figure 5. Annual incidence rate of TIG among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

13.3. Treatment rates of TIG use

The overall treatment rates of TIG use among the study population between 2017 and 2023 were low across the various data sources. In the registry data source NAJS, the overall treatment rate was 2.01 per 1,000 PYs. Among primary care data sources the treatment rate ranged from 0.01 per 1,000 PYs in BIFAP to 0.46 per 1,000 PYs in IPCI. In the claims data source InGef RDB the overall treatment rate was 0.03 per 1,000 PY(**Table 13**).

In general, the annual treatment rates declined in NAJS, IPCI, and CPRD GOLD, while treatment rates were low and stable in InGef RDB and BIFAP during the study period (**Figure 6, Table S2**).

Table 13. Treatment rate of TIG, overall, during the study period, per data source.

Data source	Number of persons	Number of events	Person years (PYs)	Treatment rate per 1,000 PYs	95% CI (lower; upper CI)
NAJS	4,556,202	50,015	24,843,691.04	2.01	2.00; 2.03
InGef RDB	9,658,796	1,759	52,401,030	0.03	0.03; 0.04
IPCI	2,163,147	4,081	8,941,771	0.46	0.44; 0.47
BIFAP	27,287,867	1,497	145,572,622	0.01	0.01; 0.01
CPRD GOLD	6,085,546	654	24,907,761	0.03	0.02; 0.03

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; PYs = person years.

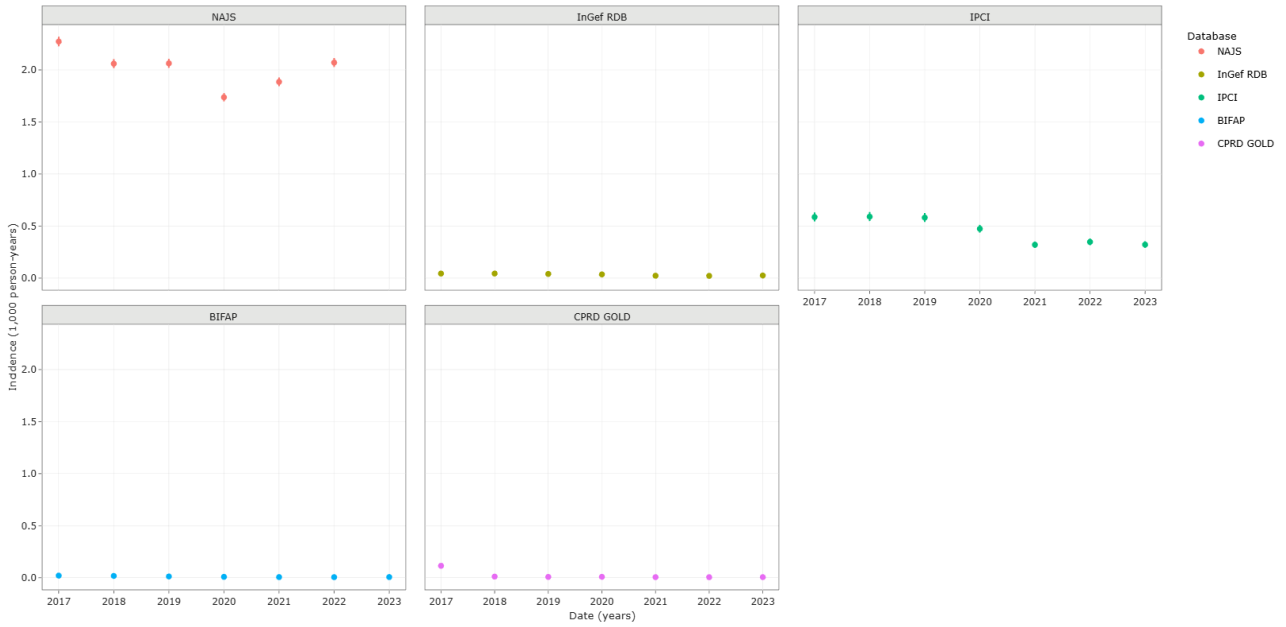

Figure 6. Annual treatment rate of TIG among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

13.4. Prevalence of TIG use

The overall prevalence of TIG use between 2017 and 2023 was low across the data sources. The prevalence was 1.04% in registry data source NAJS during the study period. In primary care data sources, the overall prevalence ranged from 0.01% in BIFAP and CPRD GOLD to 0.18% in IPCI. In the claims data source InGef RDB the overall prevalence was 0.02%, while in hospital data source IMASIS the prevalence was 0.16% (**Table 14**). The pooled prevalence based on overall prevalence from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 0.02% (95% CI: 0.001 – 0.607), as can be observed in the Shiny app at EUPAS1000000685.

Stratification by calendar year showed that, in general, the prevalence of TIG records was low and declined in NAJS, IPCI, IMASIS, and CPRD GOLD, while prevalence remained low and stable in InGef RDB and BIFAP during the study period (**Figure 7, Table S3**).

Table 14. Prevalence of TIG, overall, during the study period, per data source.

Data source	Number of persons	Number of events	Prevalence, % (95% CI)
NAJS	4,556,202	47,522	1.04 (1.03 to 1.05)
InGef RDB	9,658,796	1,727	0.02 (0.02 to 0.02)
IPCI	2,163,147	3,873	0.18 (0.17 to 0.19)
BIFAP	27,287,867	1,473	0.01 (0 to 0.01)
IMASIS	400,000	627	0.16 (0.14 to 0.17)
CPRD GOLD	6,085,546	650	0.01 (0.01 to 0.01)

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; PYs = person years.

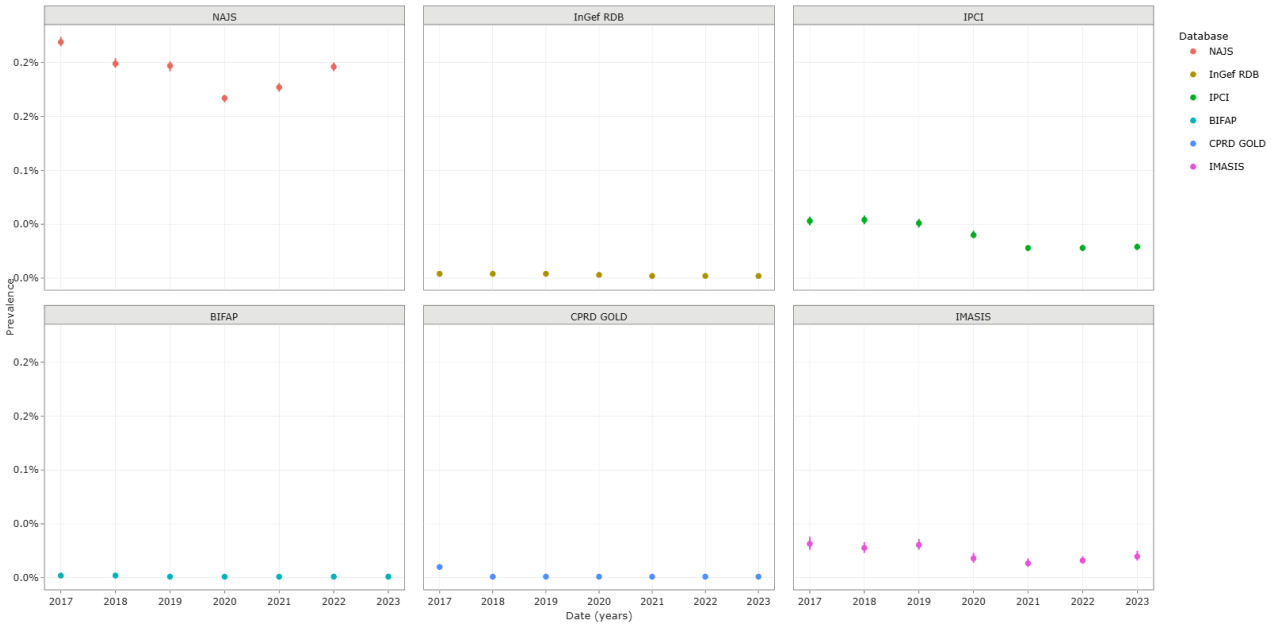

Figure 7. Annual prevalence of TIG among the study population during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

13.5. Incidence rates of tetanus-prone wounds

13.5.1. Incidence rates of probable high-risk and possible tetanus-prone wounds

Incidence rates of tetanus-prone wounds that involved either antibiotic treatment or a wound procedure among the study population showed distinct trends across the various data sources between 2017 and 2023 (**Figure 8**). In NAJS, incidence rates started at 18.68 per 1,000 PYs in 2017, followed by a decline to 14.40 per 1,000 PYs in 2022. In IPCI, incidence rates started at 18.02 per 1,000 PYs in 2017, peaked at 18.80 per 1,000 PYs in 2018, then declined to 13.60 per 1,000 PYs in 2021, and with a subsequent increase to

16.16 per 1,000 PYs in 2023. In BIFAP, incidence rates of tetanus-prone wounds increased during the study period, starting at 5.35 per 1,000 PYs in 2017, followed by a small decline to 5.18 per 1,000 PYs in 2018, and a subsequent increase during the remainder of the study period to an incidence rate of 9.05 per 1,000 PYs in 2023. In CPRD GOLD, the incidence rate of tetanus-prone wounds started at 7.63 per 1,000 PYs in 2017, followed by a decline to 3.27 per 1,000 PYs in 2021, and an increase to 4.31 per 1,000 PYs in 2023 (**Figure 8, Table S4**). The pooled incidence rate based on overall incidence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 8.30 per 1,000 PYs (95% CI: 1.95–35.36), as can be observed in the Shiny app at EUPAS1000000685.

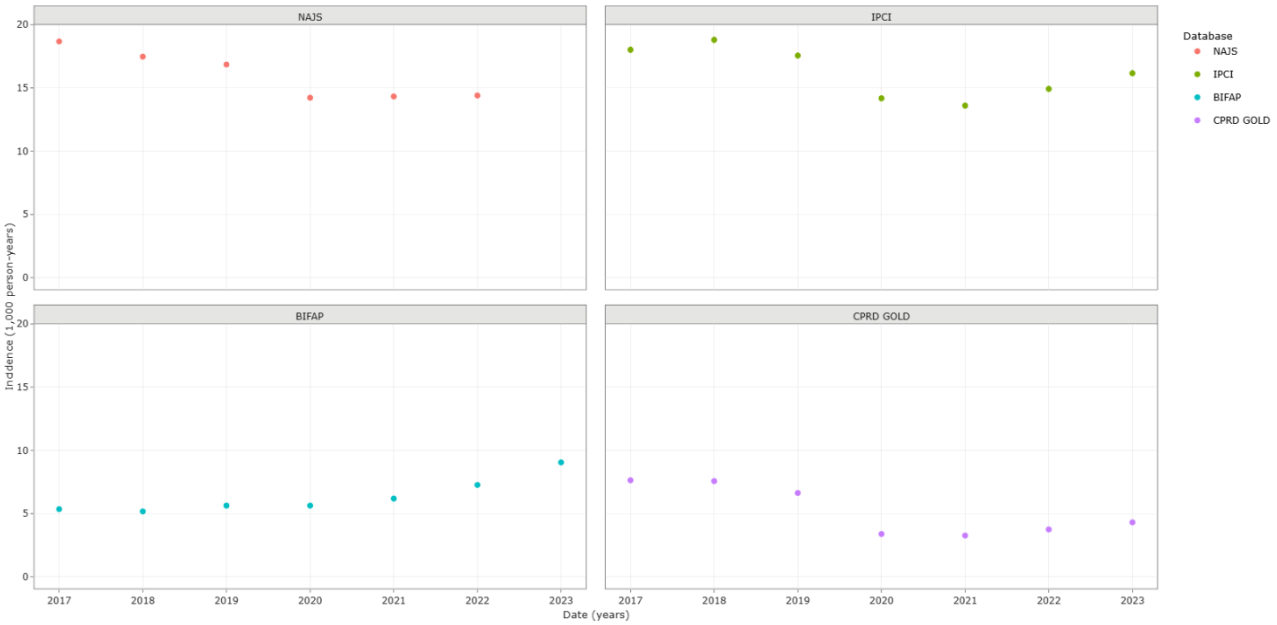

Figure 8. Annual incidence rate of probable high-risk and possible tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

13.5.2. Incidence rates of probable high-risk tetanus-prone wounds

The annual incidence rates of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure showed distinct trends across the various data sources during the study period.

In NAJS, annual incidence rates started at 6.62 per 1,000 PYs in 2017 and subsequently decreased to 4.71 per 1,000 PYs in 2022. In IPCI, annual incidence rates started at 1.05 per 1,000 PYs in 2017, fluctuated between 1.00 per 1,000 PYs in 2018 and 1.23 per 1,000 PYs in 2022, and declined to 1.08 per 1,000 PYs in 2023 (**Figure 9**). In BIFAP, incidence rates started at 0.40 per 1,000 PYs in 2017, declined to 0.31 per 1,000 PYs in 2018, followed by an increase to 1.30 per 1,000 PYs in 2023. In CPRD GOLD, incidence rates varied slightly across the years, starting at 0.80 per 1,000 PYs in 2017, peaking at 0.83 per 1,000 PYs in 2018, decreasing to 0.54 per 1,000 PYs in 2020 and increasing to 0.66 per 1,000 PYs in 2023 (**Figure 9, Table S5**). The pooled incidence rate based on overall incidence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 0.87 per 1,000 PYs (95% CI: 0.52 – 1.46).

The incidence of probable high-risk tetanus-prone wounds was also assessed per wound type. In NAJS, stratification of the annual incidence rates by type of wound showed that 'wounds with foreign bodies' were most frequently recorded. The incidence rates of 'wounds with foreign bodies' ranged from 6.16 per

1,000 PYs in 2017 to 4.34 per 1,000 PYs in 2022. The incidence rates of 'wounds containing devitalised tissue' ranged from 0.45 per 1,000 in 2017 to 0.37 per 1,000 PYs in 2022, the annual incidence of 'penetrating or puncture wounds' ranged from 0.05 per 1,000 PYs in 2017 and 2018 to 0.04 per 1,000 PYs in 2022, and the incidence rate of 'wounds containing dirt, soil, faeces, or saliva' was 0.01 per 1,000 PYs between 2017 and 2021 and 0.02 per 1,000 PYs in 2022 (**Figure S1**).

In IPCI, stratification by type of wound showed that 'wounds with foreign bodies' and 'wounds containing dirt, soil, faeces, or saliva' were most frequently recorded. The incidence rates of 'wounds with foreign bodies' ranged from 0.59 per 1,000 PYs in 2017 to 0.49 per 1,000 PYs in 2023. The incidence rates of 'wounds with dirt, soil, faeces, or saliva' ranged from 0.45 per 1,000 PYs in 2017 to 0.57 per 1,000 PYs in 2023. There were no records of 'penetrating or puncture wounds', and of 'wounds containing devitalised tissue' (**Figure S1**).

In BIFAP, stratification by type of wound showed that 'wounds with foreign bodies' were most frequently recorded, with annual incidence rates starting at 0.18 per 1,000 PYs in 2017 and increasing to 0.70 per 1,000 in 2022 and 2023. The annual incidence rates of 'wounds with dirt, soil, faeces, or saliva' started at 0.20 per 1,000 PYs in 2017, decreased to 0.10 per 1,000 PYs and subsequently increased to 0.40 per 1,000 PYs in 2023. The annual incidence rates of 'penetrating or puncture wounds' were measurable from 2018, starting at 0.01 per 1,000 PYs in 2018, and increasing to 0.15 per 1,000 PYs in 2023, and the annual incidence rates of 'wounds containing devitalised tissue' ranged between 0.01 per 1,000 PYs and 0.09 per 1,000 PYs during the study period (**Figure S1**).

In CPRD GOLD, stratification by type of wound showed that 'wounds with dirt, soil, faeces, or saliva' were most frequently recorded, with annual incidence rates starting at 0.71 per 1,000 PYs in 2017 and 0.72 per 1,000 PYs in 2018, decreasing to 0.48 per 1,000 PYs in 2020, followed by an increase to 0.57 per 1,000 PYs in 2023. The annual incidence rates of 'wounds with foreign bodies' ranged between 0.05 per 1,000 PYs and 0.09 per 1,000 PYs during the study period. The annual incidence rates of 'penetrating or puncture wounds' were below 0.01 per 1,000 PYs, and of 'wounds containing devitalised tissue' ranged between 0.01 and 0.02 per 1,000 PYs during the study period (**Figure S1**).

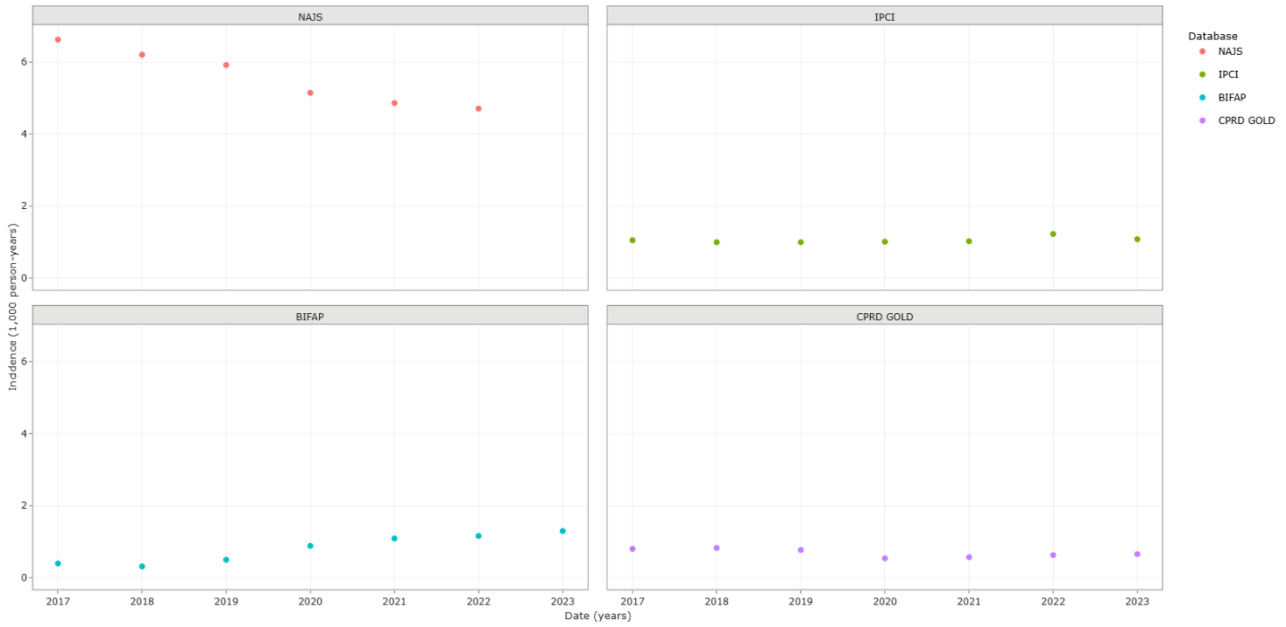

Figure 9. Annual incidence rate of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

Removing the criterion of requiring antibiotic treatment or a wound-specific procedure around the time of diagnosing a probable high-risk tetanus-prone wound resulted in an increase in the incidence of overall probable high-risk tetanus-prone wounds across all data sources, while the trend per data source remained consistent (**Figure S2**). Removal of this criterion also resulted in an increase in wound type-stratified incidence rates of probable high-risk tetanus-prone wounds, except for 'penetrating or puncture wounds' and 'wounds containing devitalised tissue' in IPCI and for 'penetrating or puncture wounds' in CPRD GOLD (**Figure S3**). Detailed information about the number of events and PYs per calendar year can be found in the Shiny app.

13.5.3. Incidence rates of possible tetanus-prone wounds

The annual incidence rates of possible tetanus-prone wounds that involved either antibiotic treatment or a wound procedure showed distinct trends across the data sources between 2017 and 2023.

In NAJS, annual incidence rates started at 12.64 per 1,000 PYs in 2017, declined to 9.63 per 1,000 PYs in 2020, followed by an increase to 10.28 per 1,000 PYs in 2022. In IPCI, annual incidence rates started at 17.00 per 1,000 PYs in 2017, peaked at 17.85 per 1,000 PYs in 2018, declined to 12.63 per 1,000 PYs in 2021 and increased to 15.16 per 1,000 PYs in 2023. In BIFAP, incidence rates started at 4.96 per 1,000 PYs in 2017, fluctuated between 4.87 per 1,000 PYs and 5.26 per 1,000 PYs between 2018 and 2021, and subsequently increased to 6.30 per 1,000 PYs in 2022 and 7.95 per 1,000 PYs in 2023. In CPRD GOLD, incidence rates started at 6.85 per 1,000 PYs in 2017, declined to 2.73 per 1,000 PYs in 2021, followed by an increase to 3.70 per 1,000 PYs in 2023 (**Figure 10**). Detailed information about the number of events and PYs per calendar year can be found in the Shiny app. The pooled incidence rate based on overall incidence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 7.47 per 1,000 PYs (95% CI: 1.60 – 34.82) , as can be observed in the Shiny app at EUPAS1000000685.

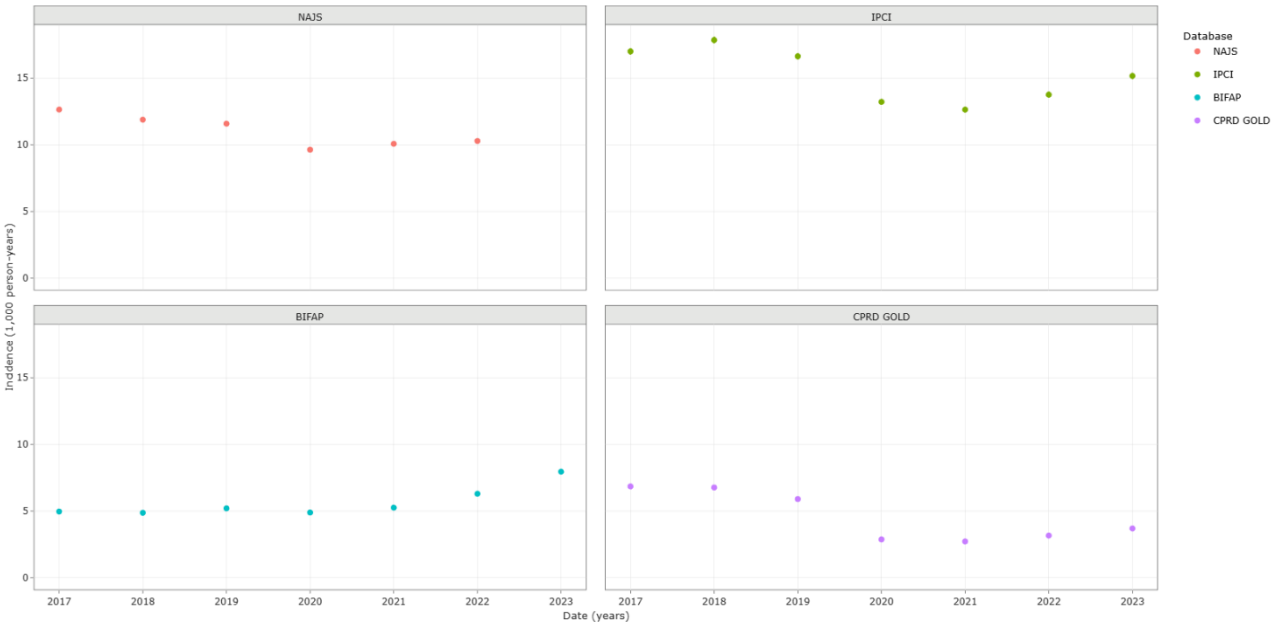

Figure 10. Annual incidence rate of possible tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

13.6. Prevalence of tetanus-prone wounds

13.6.1. Prevalence of probable high-risk and possible tetanus-prone wounds

The prevalence of tetanus-prone wounds that involved antibiotic treatment or a wound procedure among the study population, stratified by calendar year, was very low across the data sources during the study period.

In NAJS, the annual prevalence was 1.87% in 2017, peaked at 1.90% in 2019, followed by a decline to 1.77% in 2022. In IPCI, the prevalence was 1.69% in 2017, peaked at 1.86% in 2018, followed by a decline to 1.37% in 2021, and a subsequent increase to 1.67% in 2023. In BIFAP, the prevalence started at 0.52% in 2017, fluctuated between 0.54% and 0.74% between 2018 and 2022, and was 0.94% in 2023. In IMASIS, the prevalence ranged between 0.14% in 2017 and 0.20% in 2023. In CPRD GOLD, the prevalence was 0.70% in 2017, peaked at 0.74% in 2018, followed by a decline to 0.34% in 2021, and a subsequent increase to 0.46% in 2023 (**Figure 11, Table S6**). The pooled prevalence based on overall prevalence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 3.70% (95% CI: 1.23 – 10.58).

Figure 11. Annual prevalence of probable high-risk and possible tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

13.6.2. Prevalence of probable high-risk tetanus-prone wounds

The annual prevalence of probable high-risk tetanus-prone wounds involving antibiotic treatment or a wound procedure was low across the data sources between 2017 and 2023. In NAJS, the annual prevalence started at 0.67% in 2017 and declined to 0.59% in 2022. In IPCI, the annual prevalence was stable, ranging between 0.10% in 2017 and 0.10% in 2023. In BIFAP, the prevalence started at 0.04% in 2017, increased to 0.11% in 2019, decreased to 0.09% in 2020, and increased to 0.13% in 2023. In IMASIS, the prevalence ranged between 0.03% in 2017 and 0.05% in 2023. In CPRD GOLD, the annual prevalence was stable, ranging between 0.07% in 2017 and 0.06% in 2023 (**Figure 12, Table S7**). The pooled prevalence based on

overall prevalence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 0.40% (95% CI: 0.22 – 0.74).

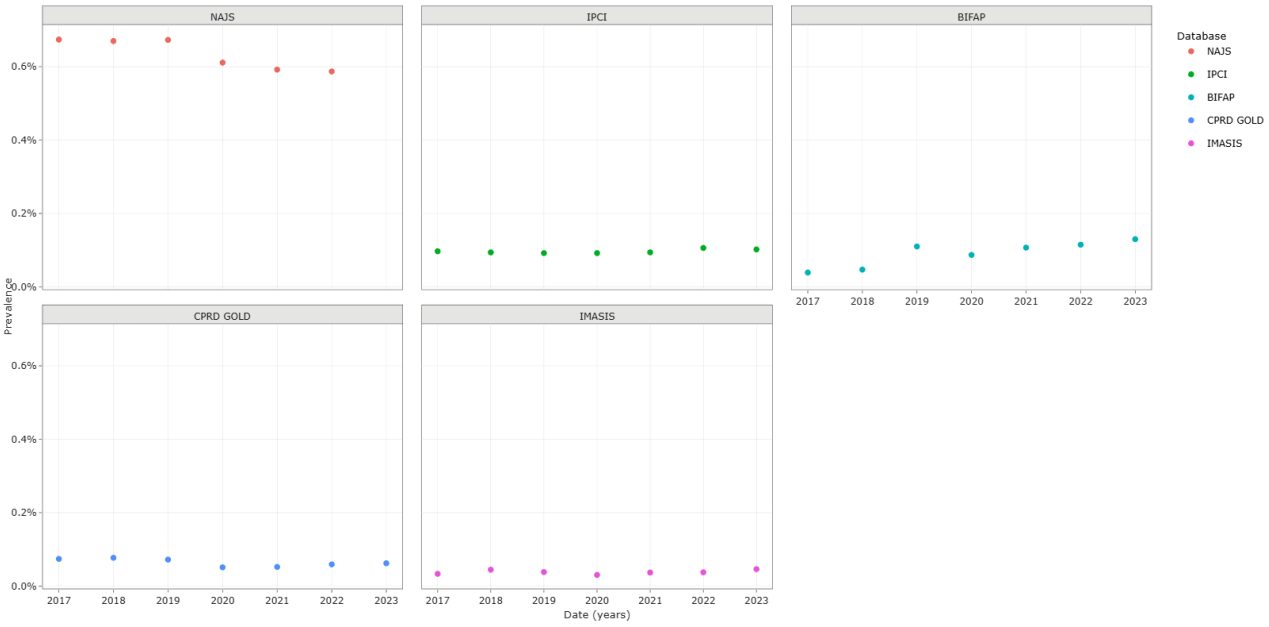

Figure 12. Annual prevalence of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

The prevalence of probable high-risk tetanus-prone wounds was also assessed per wound type. In NAJS, stratification by type of wound showed that 'wounds with foreign bodies' were most frequently recorded, with an annual prevalence ranging from 0.63% in 2017 to 0.54% in 2022. The annual prevalence of 'wounds containing devitalised tissue' was 0.05% between 2017 and 2019, and 0.04% between 2020 and 2022. The annual prevalence of 'penetrating or puncture wounds' was 0.005% or less, and of 'wounds with dirt, soil, faeces, or saliva' was 0.002% or less (**Figure S4**).

In IPCI, stratification by wound type shows that 'wounds with foreign bodies' and 'wounds containing dirt, soil, faeces, or saliva' were most frequently recorded. The annual prevalence of 'wounds with foreign bodies' ranges between 0.04% and 0.05% during the study period. The annual prevalence of 'wounds with dirt, soil, faeces, or saliva' ranged between 0.04% and 0.05%. There were no records of 'penetrating or puncture wounds' and of 'wounds containing devitalised tissue' (**Figure S4**).

In BIFAP, stratification by type of wound showed that 'wounds with foreign bodies' were most frequently recorded, with an annual prevalence ranged between 0.02% and 0.07% during the study period. The annual prevalence of 'wounds with dirt, soil, faeces, or saliva' ranged between 0.01% and 0.04%. The annual prevalence of 'penetrating or puncture wounds' and of 'wounds containing devitalised tissue' was 0.01% or less (**Figure S4**).

In IMASIS, stratification by wound type showed that 'wounds containing devitalised tissue' were most frequently recorded, with low and stable annual prevalence of 0.02% from 2017 until 2022 and an annual prevalence of 0.03% in 2023. The annual prevalence of the other three wound types was 0.01% or less (**Figure S4**).

In CPRD GOLD, stratification by type of wound showed that 'wounds with dirt, soil, faeces, or saliva' were most frequently recorded, with an annual prevalence ranging between 0.04% and 0.07% during the study period. The annual prevalence of 'wounds with foreign bodies' was 0.01% or less. The annual prevalence of 'penetrating or puncture wounds' and of 'wounds containing devitalised tissue' was 0.002% or less (**Figure S4**).

Removing the criterion of requiring antibiotic treatment or a wound-specific procedure around the time of diagnosing a probable high-risk tetanus-prone wound resulted in an increase in the prevalence of probable high-risk tetanus-prone wounds across all data sources. In NAJS, the annual prevalence started at 1.50% in 2017 and declined to 1.24% in 2022, while the annual prevalence rates remained below 1% in IPCI, BIFAP, IMASIS, and CPRD GOLD. The annual trend within each data source remained consistent, except for IMASIS, where it showed a more fluctuating trend (**Figure S5**). Removal of the criterion of requiring antibiotic treatment or a wound-specific procedure also resulted in an increase in wound type-stratified prevalence of probable high-risk tetanus-prone wounds, except for 'penetrating or puncture wounds' in CPRD GOLD, and for 'penetrating or puncture wounds' and 'wounds containing devitalised tissue' in IPCI (**Figure S6**). Detailed information about the number of events and corresponding denominator per calendar year can be found in the Shiny app.

13.6.3. Prevalence of possible tetanus-prone wounds

The annual prevalence of possible tetanus-prone wounds that involved either antibiotic treatment or a wound procedure was low and showed distinct trends across the various data sources during the study period.

In NAJS, the annual prevalence was 1.26% in 2017, peaked at 1.30% in 2019, declined to 1.13% in 2020, followed by an increase to 1.23% in 2022. In IPCI, the prevalence was 1.60% in 2017, peaked at 1.77% in 2018, followed by a decline to 1.28% in 2021 and 2022, and a subsequent increase to 1.57% in 2023. In BIFAP, the prevalence started at 0.49% in 2017, fluctuated between 0.48% and 0.67% between 2018 and 2022, and was 0.82% in 2023. In IMASIS, the prevalence fluctuated between 0.12% in 2017 and 2020, and 0.16% in 2023. In CPRD GOLD, the prevalence was 0.63% in 2017, peaked at 0.66% in 2018, followed by a decline to 0.29% in 2021, and a subsequent increase to 0.40% in 2023 (**Figure 13**). Detailed information about the number of events and corresponding denominator per calendar year can be found in the Shiny app. The pooled prevalence based on overall prevalence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 3.34% (95% CI: 1.03 – 10.28) , as can be observed in the Shiny app at EUPAS1000000685.

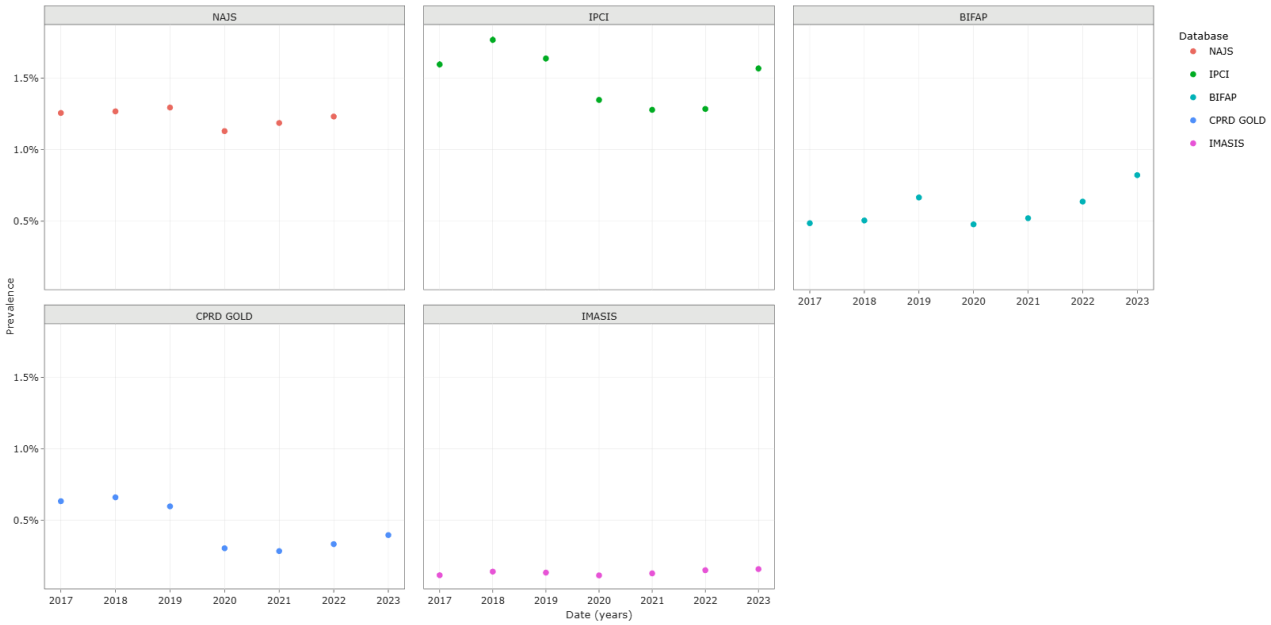

Figure 13. Annual prevalence of possible tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

14. MANAGEMENT AND REPORTING OF ADVERSE EVENTS/ADVERSE REACTIONS

Adverse events/adverse reactions were not collected or analysed as part of this evaluation. The nature of this non-interventional evaluation, through the use of secondary data, did not fulfil the criteria for reporting adverse events, according to module VI, VI.C.1.2.1.2 of the Good Pharmacovigilance Practices (https://www.ema.europa.eu/en/documents/regulatory-procedural-guideline/guideline-good-pharmacovigilance-practices-gvp-module-vi-collection-management-submission-reports_en.pdf).

15. DISCUSSION

15.1. Key results

Incidence rates, treatment rate, and prevalence of TIG among the study population

This multi-data source study assessed the incidence rates of recorded TIG use among a total of 47,350,249 individuals, the treatment rate among 49,751,558 individuals, and prevalence among 50,151,558 individuals between 2017 and 2023 across Europe.

The overall incidence rates of TIG records during the study period were low. The registry data source NAJS reported the highest incidence rate, with an overall incidence of 1.91 per 1,000 PYs. In the primary care data sources, the incidence rates of TIG use ranged from 0.01 per 1,000 PYs in BIFAP to 0.44 per 1,000 PYs in IPCI. In the claims data source InGef RDB, the overall incidence rate was 0.03 per 1,000 PYs . The pooled incidence rate based on incidence estimates from three primary care based data sources covering the complete study period, which observe individuals from registration until deregistration (IPCI, BIFAP, CPRD GOLD) was 0.05 per 1,000 PYs (95% CI: 0.0004 – 6.50).

The overall treatment rates of TIG use were low across the five data sources. In the registry data source NAJS, the overall treatment rate was 2.01 per 1,000 PYs. Among primary care data sources, the treatment rate ranged from 0.01 per 1,000 PYs in BIFAP to 0.46 per 1,000 PYs in IPCI. In the claims data source InGef RDB the overall treatment rate was 0.03 per 1,000 PY. The overall prevalence of TIG records was low across the six data sources. The prevalence was 1.04% in registry data source NAJS during the study period. In primary care data sources, the overall prevalence ranged from 0.01% in BIFAP and CPRD GOLD to 0.18% in IPCI. In the claims data source InGef RDB the overall prevalence was 0.02%, while in hospital data source IMASIS the prevalence was 0.16%. The pooled prevalence based on overall prevalence from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 0.02% (95% CI: 0.001777 – 0.607).

Incidence rates, and prevalence of tetanus-prone wounds among the study population

A total of 38,214,927 individuals were included to assess the incidence rates of probable high-risk and possible tetanus-prone wounds, and the prevalence of probable high-risk and possible tetanus-prone wounds was assessed among 40,492,762 individuals between 2017 and 2023 in various data sources across Europe.

The annual incidence rates of probable high-risk and possible tetanus-prone wounds that involved an antibiotic treatment or a wound procedure among the study population showed distinct trends across the four data sources during the study period. In NAJS, incidence rates started at 18.68 per 1,000 PYs in 2017, followed by a decline to 14.40 per 1,000 PYs in 2022. In IPCI, incidence rates ranged between 18.02 per 1,000 PYs in 2017 and 13.6 per 1,000 PYs in 2023. In BIFAP, incidence rates of tetanus-prone wounds increased over time, starting at 5.35 per 1,000 PYs in 2017, and peaking at 9.05 per 1,000 PYs in 2023. In CPRD GOLD, annual incidence rates ranged between 7.63 per 1,000 PYs in 2017 and 4.31 per 1,000 PYs in 2023. The pooled incidence rate based on overall incidence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 8.30 per 1,000 PYs (95% CI: 1.95 – 35.36).

The annual incidence rates of possible tetanus-prone wounds involving an antibiotic treatment or a wound procedure were lower than the annual incidence rates of probable high-risk and possible tetanus-prone wounds, and the trends during the study period remained consistent per data source.

The annual incidence rates of probable high-risk tetanus-prone wounds that involved an antibiotic treatment or a wound procedure varied across the data sources. In NAJS, annual incidence rates started at 6.62 per 1,000 PYs in 2017 and subsequently decreased to 4.71 per 1,000 PYs in 2022. In IPCI and CPRD GOLD, the incidence rates were stable during the study period, ranging from ranging from 1.05 per 1,000 PYs in 2017 to 1.08 per 1,000 PYs in 2023 in IPCI and from 0.80 per 1,000 PYs in 2017 to 0.66 per 1,000 PYs in 2023. In BIFAP, incidence rates subtly increased, starting at 0.40 per 1,000 PYs in 2017, followed by a decline to 0.31 per 1,000 PYs in 2018, and an increase to 1.30 per 1,000 PYs in 2023. Wound-type stratified incidence rates show that incident ‘wounds with foreign bodies’ and/or ‘wounds with dirt, soil, faeces, or saliva’ were most frequently reported. Removing the criterion of requiring antibiotic treatment or a wound-specific procedure around the time of diagnosing a probable high-risk tetanus-prone wound led to a subtle increase in the incidence of these wounds across all data sources, while the trends per data source remained consistent.

The annual prevalence of tetanus-prone wounds involving an antibiotic treatment or a wound procedure among the study population was low across the data sources between 2017 and 2023. In NAJS, the annual prevalence ranged between 1.87% in 2017 and 1.77% in 2022. In IPCI, the prevalence ranged between 1.69% in 2017 and 1.67% in 2023. In BIFAP, the prevalence ranged between 0.52% in 2017 and 0.94% in 2023. In IMASIS, the prevalence ranged between 0.14% in 2017 and 0.20% in 2023. In CPRD GOLD, the prevalence ranged between 0.70% in 2017 and 0.46% in 2023. The pooled prevalence based on overall prevalence estimates from three primary care based data sources (IPCI, BIFAP, CPRD GOLD) was 3.70% (95% CI: 1.23 – 10.58).

Although the annual prevalence of possible tetanus-prone wounds involving an antibiotic treatment or a wound procedure was slightly lower than the annual prevalence of probable high-risk and possible tetanus-prone wounds combined, the trends during the study period remained consistent per data source.

The annual prevalence of probable high-risk tetanus-prone wounds that involved an antibiotic treatment or a wound procedure varied across the data sources. In NAJS, the annual prevalence declined from 0.67% in 2017 to 0.59% in 2022. In IPCI and CPRD GOLD, the prevalence was stable during the study period, ranging between 0.10% in 2017 and 0.10% in 2023 in IPCI, and between 0.07% in 2017 and 0.06% in 2023 in CPRD GOLD. In BIFAP, the prevalence subtly increased, starting at 0.04% in 2017 to 0.13% in 2023. In IMASIS, the prevalence ranged between 0.03% in 2017 and 0.05% and 2023. Wound-type stratified prevalence show that 'wounds with foreign bodies' and/or 'wounds with dirt, soil, faeces, or saliva' are most frequently reported in IPCI, BIFAP, and CPRD GOLD, while 'wounds containing devitalised tissue' were most frequently recorded in IMASIS. Removing the criterion of requiring antibiotic treatment or a wound-specific procedure around the time of diagnosing a probable high-risk tetanus-prone wound led to an increased prevalence across all data sources.

15.2. Limitations of the research methods

It is important to consider several factors that may influence the interpretation of the results. First of all, the study was informed by routinely collected healthcare data, i.e., this data was not necessarily collected for research purposes. As such, the level of granularity of the available data can be insufficient.

Data sources/setting: This study utilised data from six data sources: BIFAP, CPRD GOLD, IMASIS, InGef RDB, IPCI, and NAJS. The results derived from these data sources may not be representative of prescriptions and diagnosis in other countries or data sources and settings. Additionally, discrepancies may arise due to differences in how observation periods are handled across data sources. For instance, some data sources use the last interaction with the healthcare system to define the end of the observation period. As a result, infrequent users may have shorter follow-up periods, decreasing the time-at-risk (i.e., the denominator) for incidence rate calculations. This could lead to an overestimation of incidence rates in the final months of the study period, as users are fully captured by the end of the study.

The type of healthcare setting captured by each data source may influence the observed incidence, prevalence, and treatment rates of tetanus immunoglobulin use and tetanus-prone wounds, as the health care system likely determines where TIG is usually administered, and this may differ across the included data sources. It is therefore not possible to predict the direction or extent of bias. Consequently, inclusion of data sources that do not or partially include hospital records, i.e., BIFAP, CPRD GOLD, InGef RDB, and IPCI, may lead to incomplete capture of tetanus-prone wounds and associated TIG use occurring in settings outside their scope. In contrast, hospital-based data source, i.e., IMASIS, may not capture episodes managed in primary care, including some tetanus-prone wounds for which TIG could be considered. The registry data source NAJS is the most comprehensive data source included in this study, covering EHR data from primary care, outpatient, and inpatient settings.

Drug prescriptions: A recorded prescription does not necessarily indicate that the patient actually took the drug. Therefore, assumptions of actual use were made. Of note, TIG is usually administered by a healthcare practitioner.

Catchment area of hospital data source: The denominator counts of the hospital-based IMASIS data source were based on the catchment area of the hospital. The hospital data source is linked to a defined catchment area corresponding to Parc de Salut Mar, which includes several facilities and theoretically serves a population of approximately 400,000 residents in Barcelona. The catchment area is defined by an aggregation of postal codes covering districts within Barcelona and the broader Catalonia region. However, only an estimated 50–60% of patients originate from this area, with the remainder coming from other parts

of Barcelona and neighbouring municipalities such as Badalona and Hospitalet. This may affect the representativeness of the study population and limit the generalisability of prevalence and incidence estimates to the broader catchment population. Additionally, due to the lack of reliable person-time-at-risk data in IMASIS, incidence rates could not be calculated for this source. Therefore, IMASIS was used solely for prevalence analyses.

Phenotype of tetanus-prone wounds: There is no diagnostic code available for tetanus-prone wounds, and guidelines state that individual risk assessment is required for each wound. Available ICD or SNOMED codes often lack the granularity needed to distinguish tetanus-prone wounds from non-tetanus prone wounds. For example, general wound codes may not specify characteristics, such as contamination with soil or faeces, depth, or tissue devitalisation, or mechanism (e.g., crush, puncture, laceration). Additionally, there is a lack of unstructured data, which may contain essential information to classify wounds as tetanus prone. Without these, wound classification relies entirely on structured codes, limiting clinical nuance. This can lead to misclassification, meaning some wounds may be incorrectly included or excluded. To improve identification, we combined antibiotic use and wound procedures as proxies. While this approach increases specificity to identify clinically severe wounds, it may introduce bias due to coding variability across data sources and differences in clinical practice. It may also include some wounds that do not meet clinical criteria.

Data structure InGef RDB: The structure of the InGef RDB data source does not support reliable assessment of the incidence or prevalence of tetanus-prone wounds, and was therefore excluded from the analysis of tetanus-prone wound outcomes. The outcome definition of tetanus-prone wounds relies on the presence of a diagnosis code and concurrent antibiotic exposure within a defined time window. However, the temporal relationship between these elements cannot be accurately determined in InGef RDB as 1) in the inpatient setting, administered medications are generally not captured, except when medications are coded as a procedure, limiting visibility into broader treatment patterns, and 2) in the outpatient setting, diagnostic codes and procedures are recorded only at the end of each quarter, which restricts the ability to establish precise timing of clinical events. TIG administrations at the emergency department are currently not captured. These limitations introduce a risk of misclassification. Of note, the data structure primarily supports assessment of TIG use in the outpatient setting. As inpatient administrations and emergency department administrations are not covered, any estimates of TIG use derived from InGef RDB are restricted to the outpatient context which should be considered when interpreting the incidence, prevalence, and treatment rate.

Study period: Part of the study period coincided with COVID-19 pandemic (2020–2022), which likely affected the incidence and prevalence of TIG use and tetanus-prone wounds due to changes induced by the pandemic (behavioural changes due to lockdowns and impacting health care seeking behaviour).

Meta-analyses: Incidence or prevalence estimates of ≥2 data sources in the same setting, i.e., the primary care data sources IPCI, BIFAP, and CPRD GOLD, were pooled. These data sources all cover the complete study period and follow participants from registration until deregistration. Although all three data sources contain EHR data from the primary care setting, there may be heterogeneity between these sources regarding the selective linkage of hospital data, e.g., the type of available inpatient data (referrals, discharge letters, pharmacy data, etc.) and the coverage among the patient population (subset of included patients). Therefore, meta-analyses results need to be interpreted with caution.

15.3. Interpretation

This multi-data source study described the use of TIG as a proxy for post-exposure prophylaxis of tetanus, leveraging different types of DARWIN real-world data sources to provide insight into prescribing patterns between 2017 and 2023.

Recorded TIG use was notably higher in the registry data source NAJS, which covers public primary, secondary/outpatient, and inpatient care settings, compared to the primary care, claims, and hospital data sources. Besides the comprehensive coverage of healthcare settings in NAJS, the high use of TIG may also be due to clinicians being extra cautious or because the immunisation status of a large number of individuals was unknown. The incidence rates, treatment rates, and prevalence of TIG use decreased during the study period. The noticeable drop in annual records in CPRD GOLD between 2017 and 2018 may potentially be explained by a severe shortage of TIG available in the UK and the implementation of new guidelines in 2018, prioritising the use of TIG or human normal immunoglobulin for those at genuine risk.[14] The incidence, treatment rate, and prevalence of TIG use from 2020 until 2022 were likely affected by changes due to the COVID-19 pandemic and should be interpreted with caution. The variability in recorded TIG use between data sources and health care settings highlights the need for comprehensive coverage of primary care and secondary care within data sources in order to assess the use of tetanus prophylaxis.

The requirement of post-exposure prophylaxis with TIG depends on the immunisation status of an individual, the context of the wound, and country-specific guidelines. For example, country-specific guidelines state that individuals with a high-risk tetanus prone wound who received the last tetanus vaccine dose less than 10 years ago do not require TIG, while individuals who received the last tetanus vaccine dose more than 10 years ago do require TIG with a clean wound or tetanus-prone wound.[5, 6, 11, 12] However, immunisation status was not considered in this study; as a result, observed TIG use may not fully reflect clinical decision-making based on vaccination history and should be interpreted with caution. Diagnostic codes in real-world data often lack sufficient granularity, limiting the ability to reliably identify wounds that are definitively tetanus-prone. To address this, wounds were categorised into ‘probable high-risk tetanus-prone wounds’ and ‘possible tetanus-prone wounds’ to reflect varying levels of clinical concern and likelihood of requiring tetanus prophylaxis. This categorisation, combined with antibiotic treatment recommended for traumatic injuries and skin infections [13, 15, 16] or wound specific procedures was a methodological choice to mitigate the limitation of insufficient coding detail. Antibiotics and procedures were used as proxies to provide clinical context where granular wound characteristics were unavailable, helping to identify those more likely to be tetanus-prone. Of note, while antibiotics may be recommended to treat tetanus-prone wounds, antibiotics should not be used to prevent tetanus itself.[11-13] A broader definition of probable high-risk tetanus-prone wounds was also applied in this study to assess the impact of these requirements.

The incidence and prevalence of probable high-risk tetanus-prone wounds involving an antibiotic or wound procedure were lower than that of possible tetanus-prone wounds in all data sources, suggesting that these high-risk wounds are less frequent among the study population. The observed incidence rates and prevalence may, however, be influenced by the data source setting, e.g., more severe wounds are typically treated in hospitals rather than by general practitioners. Yet, even in IMASIS, a data source consisting solely of hospital records, the prevalence of possible tetanus-prone wounds was higher than that of probable high-risk tetanus-prone wounds. Of note, the incidence and prevalence of tetanus-prone wounds were likely affected by changes in healthcare use due to the COVID-19 pandemic and should be interpreted with caution.

Stratification by wound type revealed that ‘wounds with foreign bodies’ were most frequently recorded in NAJS, a registry covering primary care, outpatient specialist care, and inpatient hospital care settings, while ‘wounds with foreign bodies’ or ‘wounds with dirt, soil, faeces, or saliva’ were most frequently recorded in data sources that contain primary care records, i.e., IPCI, BIFAP, and CPRD GOLD, and ‘wounds containing devitalised tissue’ in hospital data source IMASIS.

15.4. Generalisability

While our study comprised data from six data sources across European countries, and covered primary care, registry, outpatient specialist care, and inpatient care, findings from this study are not to be generalised to other countries or data sources and only reflect the situation in the specific region and setting covered by the respective data source.

16. CONCLUSION

This multi-data source study describes TIG prescribing patterns and the epidemiology of tetanus-prone wounds among real-world data sources across Europe between 2017 and 2023. Tetanus is a rare neurological disorder, and the type of post-exposure prophylaxis depends on the context of the wound and the immunisation status of the individual. Although the recorded use of TIG and the annual prevalence of tetanus-prone wounds remained low during the study period, the results varied considerably between data sources. The NAJS registry reported the highest TIG use compared to the other data sources, which had less comprehensive coverage of healthcare settings. This heterogeneity highlights the need for increased coverage of both primary and secondary care to gain better insight into the use of prophylaxis of this life-threatening rare disease. .

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18. ANNEXES

Annex I: Final lists with concept definitions

List of concept definition for tetanus immunoglobulin

Concept ID	Concept Code	Concept Name	Descendants	Exclude
35604680	1727875	tetanus immune globulin	Yes	-
4298489	384702009	Anti-tetanus immunoglobulin injection	Yes	-
36713286	572261000119106	Administration of human tetanus immune globulin	Yes	-
4293740	384700001	Injection of tetanus antitoxin	Yes	-

List of concept definitions for tetanus prone wounds

Probable high risk tetanus prone wounds

Concept ID	Concept Code	Concept Name	Descendants	Exclude
75994	77490007	Full thickness burn of shoulder	Yes	-
79186	40521006	Contusion to heart with open wound into thorax	Yes	-
138844	20187005	Foreign body granuloma of muscle	Yes	-
197134	21580006	Hematoma AND contusion of liver with open wound into abdominal cavity	Yes	-
201715	25554004	Major laceration of liver with open wound into abdominal cavity	Yes	-
376552	269144002	Cerebral laceration and contusion	Yes	-
433116	217697000	Dog bite	Yes	-
434785	77768006	Intracranial hemorrhage following injury with open intracranial wound	Yes	-
438590	28188001	Brain injury with open intracranial wound	Yes	-
438958	398530003	Wound botulism	Yes	-
439194	45659008	Subdural hemorrhage following injury with open intracranial wound AND loss of consciousness	Yes	-
442533	210205007	Kidney hematoma without rupture of capsule, with open wound into cavity	Yes	-
443870	13891000	Major laceration of liver without open wound into abdominal cavity	Yes	-
444042	35507009	Deep third degree burn of chest wall	Yes	-
444249	82117004	Abrasion and/or friction burn with infection	Yes	-
444408	9264002	Laceration of kidney with open wound into abdominal cavity	Yes	-
607984	1156468009	Deep partial thickness burn	Yes	-
608207	1157025007	Infected foreign body	Yes	-
759965	1081930100011 9105	Open fracture of left tibia	Yes	-
1449955	1354433009	Open wound of posterior wall of thorax due to dog bite	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
3176778	21110001000004103	Chronic abdominal wound infection	Yes	-
3185417	84100010000004109	Cerebral hematoma with open intracranial wound	Yes	-
4001843	110221003	Third degree burn of hard palate	Yes	-
4001844	110225007	Third degree burn of soft palate	Yes	-
4001845	110229001	Third degree burn of oropharynx	Yes	-
4002669	110177009	Third degree burn of preauricular region of face	Yes	-
4002678	110209002	Third degree burn of maxillary attached gingiva	Yes	-
4002685	110236000	Full thickness burn of tongue	Yes	-
4003192	110025001	Open fracture of alveolar ridge of maxilla	Yes	-
4003360	110189006	Full thickness burn of cheek	Yes	-
4003504	110213009	Third degree burn of mandibular attached gingiva	Yes	-
4004977	110217005	Third degree burn of floor of mouth	Yes	-
4005631	110197004	Third degree burn of labial mucosa	Yes	-
4005632	110201004	Third degree burn of maxillary vestibule	Yes	-
4022680	226034001	Injecting drug user	Yes	-
4030849	238382001	Wound abscess	Yes	-
4046789	134222005	Penetrating wound	Yes	-
4049045	20659000	Full thickness burn of female genitalia	Yes	-
4051759	211463006	Foreign body in skin wound	Yes	-
4052067	211786000	Corrosion of second degree of trunk	Yes	-
4052069	211793001	Corrosion of third degree of trunk	Yes	-
4054552	211875009	Corrosion of first degree of shoulder and upper limb, except wrist and hand	Yes	-
4054648	211946004	Corrosion of wrist and hand	Yes	-
4054663	212011007	Corrosion of second degree of ankle and foot	Yes	-
4054747	212062005	Corrosion involving 20 to 29 percent of body surface	Yes	-
4054753	212126007	Corrosion involving 90 percent or more of body surface	Yes	-
4055178	211876005	Corrosion of second degree of shoulder and upper limb, except wrist and hand	Yes	-
4055319	212007001	Corrosion of 2nd degree of hip and lower limb, except ankle and foot	Yes	-
4055331	212051005	Corrosion involving less than 10 percent of body surface	Yes	-
4055449	212075005	Corrosion involving 40 to 49 percent of body surface	Yes	-
4057638	211768003	Corrosion of first degree of trunk	Yes	-
4057924	212057009	Corrosion involving 10 to 19 percent of body surface	Yes	-
4057927	212068009	Corrosion involving 30 to 39 percent of body surface	Yes	-
4057929	212083004	Corrosion involving 50 to 59 percent of body surface	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4057933	212102005	Corrosion involving 70 to 79 percent of body surface	Yes	-
4057935	212113008	Corrosion involving 80 to 89 percent of body surface	Yes	-
4059703	211749001	Corrosion of head and neck	Yes	-
4059993	212006005	Corrosion of first degree of hip and lower limb, except ankle and foot	Yes	-
4059994	212010008	Corrosion of first degree of ankle and foot	Yes	-
4059995	212012000	Corrosion of third degree of ankle and foot	Yes	-
4060013	212092001	Corrosion involving 60 to 69 percent of body surface	Yes	-
4090679	186327003	Pasteurella septic infection (cat or dog bite)	Yes	-
4094477	287134001	Full thickness burn of eyelid	Yes	-
4094821	262598006	Intracranial foreign body	Yes	-
4094846	262687004	Cerebellar laceration and contusion	Yes	-
4095264	262577006	Degloving injury	Yes	-
4095859	262573005	Pellet wound	Yes	-
4096471	262557004	Deep wound	Yes	-
4096472	262560006	Penetrating wound	Yes	-
4096479	262595009	Traumatic amputation	Yes	-
4100336	27597005	Deep third degree burn of female genitalia	Yes	-
4105269	283243002	Glass in upper limb	Yes	-
4106510	283153005	Metal foreign body in upper limb	Yes	-
4106531	283255008	Glass in trunk	Yes	-
4106532	283256009	Glass in back	Yes	-
4106835	283166005	Metal foreign body in trunk	Yes	-
4106836	283167001	Metal foreign body in back	Yes	-
4106840	283189002	Fishing hook foreign body	Yes	-
4141909	3404009	Bite wound	Yes	-
4151842	283682007	Bite - wound	Yes	-
4153697	283545005	Gunshot wound	Yes	-
4177626	298073003	Foreign body in skin of upper limb	Yes	-
4178756	52329006	Fracture, open	Yes	-
4181882	298085006	Foreign body in skin of trunk	Yes	-
4183970	298010008	Wound dirty	Yes	-
4185007	298062005	Foreign body in skin of head	Yes	-
4185009	298071001	Foreign body in skin of neck	Yes	-
4211967	57495003	Deep wound	Yes	-
4213471	80247002	Third degree burn injury	Yes	-
4215380	416645004	Open fracture dislocation of joint of shoulder girdle	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4235831	439889008	Wound caused by nail device	Yes	-
4246696	397182009	Open crush injury	Yes	-
4264281	397181002	Open fracture	Yes	-
4264851	397177002	Open injury with foreign body in wound	Yes	-
4279639	66554005	Full thickness burn of male genitalia	Yes	-
4299128	403192003	Full thickness burn	Yes	-
4302083	418591009	Corneal wound burn	Yes	-
4322407	425322008	Stab wound	Yes	-
36675018	771247007	Deep full thickness burn injury	Yes	-
36716563	722609007	Laceration with foreign body of head	Yes	-
36716586	722638005	Laceration of neck with foreign body	Yes	-
37116486	733213005	Laceration of thorax with foreign body	Yes	-
37116623	733397005	Laceration of shoulder region with foreign body	Yes	-
37116624	733398000	Laceration of upper arm with foreign body	Yes	-
37117206	724611004	Foreign body granuloma of soft tissue	Yes	-
37117752	733232004	Laceration of forearm with foreign body	Yes	-
37168892	1287048007	Glass in head and/or neck	Yes	-
37168893	1287049004	Metal foreign body in head and/or neck	Yes	-
37206800	787018009	Foreign body of eye region	Yes	-
37310164	1094889100011 9103	Open wound of left upper arm due to dog bite	Yes	-
37311190	823994000	Glass foreign body in skin	Yes	-
40482783	443678007	Splinter foreign body	Yes	-
40488823	446653004	Foreign body in lower limb	Yes	-
42536575	735505006	Deep third degree burn of perineum	Yes	-
42536576	735506007	Complex burn of perineum	Yes	-
42536577	735507003	Complex burn of genitalia	Yes	-
42536580	735510005	Complex burn of wrist	Yes	-
42536581	735511009	Complex burn of hand	Yes	-
42536582	735513007	Complex burn of ankle	Yes	-
42536780	735776005	Laceration of abdomen with foreign body	Yes	-
42536781	735777001	Laceration of lower back with foreign body	Yes	-
42536808	735813002	Laceration of wrist with foreign body	Yes	-
42536809	735814008	Laceration of hand with foreign body	Yes	-
42538212	741070003	Full thickness burn of head and neck	Yes	-
42538701	762468009	Complex burn of head	Yes	-
42538703	762472008	Complex burn of face	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
42538705	762475005	Complex burn of trunk	Yes	-
42538707	762478007	Complex burn of shoulder	Yes	-
42538714	762488008	Complex burn of hip	Yes	-
42539040	735778006	Laceration of pelvis with foreign body	Yes	-
42539366	762469001	Complex burn of neck	Yes	-
42539367	762479004	Complex burn of upper limb	Yes	-
42539368	762487003	Complex burn of lower limb	Yes	-
42539542	735512002	Complex burn of foot	Yes	-
42689793	1068391000000106	Injury whilst gardening	Yes	-
42689805	1068541000000106	Injury whilst working on farm	Yes	-
44788773	198751000000109	Open fracture of femur, upper epiphysis	Yes	-
44790829	240541000000107	Impaled object in back	Yes	-
44790831	240561000000108	Impaled object in upper limb	Yes	-
44806474	801711000000105	O/E - wound necrotic	Yes	-
44806645	813381000000102	Foreign body associated with wound	Yes	-
44806654	813491000000109	Foreign body associated with burn	Yes	-
46270117	142661000119102	Retained foreign body	Yes	-
254790	42019003	Contusion of lung with open wound into thorax	-	-
256571	74699008	Foreign body in nose	-	-
259995	211616004	Foreign body in orifice	-	-
374801	75441006	Foreign body in ear	-	-
443267	274204004	Corneal burn	-	-
760128	1084762100011 9105	Foreign body in right ear	-	-
760129	1084766100011 9100	Foreign body in left ear	-	-
3188959	3075000100000 4105	Femoral artery foreign body	-	-
3189195	6960001000004 101	Infected laceration of lip	-	-
4053838	125670008	Foreign body	-	-
4054669	212038000	Corrosion of larynx and/or trachea	-	-
4054671	212042002	Corrosion of esophagus	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4055326	212035002	Corrosion of mouth and pharynx	-	-
4055327	212039008	Corrosion of larynx, trachea, and lung	-	-
4055329	212047008	Corrosion of internal genitourinary organs	-	-
4057798	212009003	Corrosion of ankle and foot	-	-
4058346	211311003	Foreign body in hand	-	-
4084589	282453006	Corrosion of pharynx	-	-
4094824	262610009	Umbilical foreign body	-	-
4094829	262625009	Foreign body in female perineum	-	-
4095272	262613006	Foreign body in urinary conduit	-	-
4096489	262621000	Foreign body in male perineum	-	-
4108528	194342001	Old foreign body in middle ear	-	-
4112119	286552001	Foreign body of neurological structure	-	-
4116121	286561001	Foreign body of cardiovascular structure	-	-
4116122	286563003	Foreign body of musculoskeletal structure	-	-
4120254	286564009	Foreign body of breast	-	-
4120256	286566006	Foreign body of endocrine structure	-	-
4120388	286603008	Foreign body of body cavity and wall	-	-
4121340	302907009	Foreign body in middle ear	-	-
4137789	32331008	Foreign body in auricle	-	-
4139420	32874004	Foreign body in auditory canal	-	-
4147781	268115005	Foreign body left in elbow	-	-
4151731	268117002	Foreign body left in hand	-	-
4153877	269406001	Post-traumatic wound infection	-	-
4154157	282729004	Foreign body in heart	-	-
4154741	284008001	Foreign body in bone	-	-
4170462	275453008	Foreign body - finger	-	-
4170472	273965001	Foreign body dermatosis	-	-
4173807	275454002	Foreign body in thumb	-	-
4182431	429719000	Foreign body in forearm	-	-
4189529	615005	Obstruction due to foreign body accidentally left in operative wound AND/OR body cavity during a procedure	-	-
4198022	431875001	Open wound of face with foreign body	-	-
4204038	308891007	Intra-abdominal foreign body left inside at operation	-	-
4205673	308890008	Intra-abdominal foreign body	-	-
4246661	93458008	Foreign body in skin	-	-
4247591	93459000	Foreign body in subcutaneous tissue	-	-
4294188	385516009	Contact burn of skin	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4297098	386082004	Foreign body in head	-	-
4297984	76844004	Local infection of wound	-	-
4309467	213278009	Adhesions resulting from foreign body left postoperatively	-	-
4309469	213282006	Foreign body left in wound	-	-
4310567	423428008	Foreign body of face	-	-
4312766	424959007	Foreign body of neck	-	-
4341779	236010002	Peritoneal foreign body	-	-
36715557	721267000	Pyogenic infection of skin and subcutaneous tissues caused by bacterium	-	-
36715559	721269002	Pyogenic abscess of skin caused by bacterium	-	-
36715583	721300003	Major laceration of spleen	-	-
36715678	721414002	Major laceration of internal jugular vein	-	-
36716590	722642008	Major laceration of carotid artery	-	-
36716591	722645005	Major laceration of external jugular vein	-	-
36717575	722643003	Major laceration of vertebral artery	-	-
37116423	733128002	Obstruction of superior vena cava with foreign body	-	-
40492372	447377007	Foreign body in jaw bone	-	-
42536644	735583001	Obstruction of inferior vena cava with foreign body	-	-
44782823	698820005	Post procedure puncture site infection	-	-
46270358	285821000119105	Major laceration of heart with hemopericardium	-	-
4152473	283837005	Fish bite wound	Yes	Yes
4094808	262555007	Human bite - wound	Yes	Yes
433949	242605002	Human bite	Yes	Yes
954118	361231000009109	Abscess from cat bite	Yes	Yes
42574046	320411000009101	Puncture wound of navicular bursa	Yes	Yes
4173025	276433004	Insect bite - wound	Yes	Yes
4114305	299971005	Insect sting	Yes	Yes
4290965	400045003	Superficial laceration of skin	Yes	Yes
4219275	72587008	Sting	Yes	Yes
4114306	299973008	Plant sting	Yes	Yes
37108761	122433610001191104	Wound abscess following procedure	Yes	Yes
4143888	307310000	Postoperative abdominal wall wound abscess	Yes	Yes
4052011	15997003	Postoperative wound abscess	Yes	Yes
36683327	781130007	Accidental puncture of a blood vessel during procedure	Yes	Yes
36683323	781126009	Accidental puncture of artery	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
40482517	445222002	Accidental puncture of artery during catheter insertion	Yes	Yes
36683324	781127000	Accidental puncture of organ during a procedure	Yes	Yes
44783259	699326004	Accidental puncture of pleura	Yes	Yes
4054926	242992007	Accidental puncture during a procedure	Yes	Yes
439218	242991000	Accidental puncture during medical care	Yes	Yes
36712756	1085074100011 9108	Accidental needle stick injury	Yes	Yes
4154700	371058004	Venomous sting	Yes	Yes
4257686	409985002	Arthropod bite wound	Yes	Yes
4103832	299970006	Animal sting	Yes	Yes
4149911	309749008	Eyelash stuck in lacrimal punctum	Yes	Yes
4147870	310645008	Eyelash stuck in meibomian gland orifice	Yes	Yes
4296195	403154004	Millipede burn	Yes	Yes
36675187	771533007	Superficial soft tissue infection at site of neuraxial block	Yes	Yes
36675189	771535000	Superficial soft tissue infection at site of peripheral nerve block	Yes	Yes
43021394	473154008	Retained fragment of ureteric catheter	Yes	Yes
36675631	772072004	Retained fragment of urethral catheter	Yes	Yes
37119163	724872001	Occupational injury of skin caused by corrosive substance	Yes	Yes
42599811	3595610000091 05	Chewing lesion of buccal mucosa	Yes	Yes
42599812	3595710000091 01	Chewing lesion of labial mucosa	Yes	Yes
42597044	3184010000091 05	Foreign body of third eyelid	Yes	Yes
4047242	13136005	Injection site	Yes	Yes
37310095	1097109100011 9102	Open wound of left upper arm due to human bite	Yes	Yes
37310113	1095912100011 9102	Open wound of right upper arm due to human bite	Yes	Yes
1244205	1089881100011 9109	Open wound of lip due to human bite	Yes	Yes
4296228	386141001	Insertion site	Yes	Yes
4246585	60341009	Burrow	Yes	Yes
4022585	11639007	Puncture	Yes	Yes
44782821	698818007	Cataract fragments in the eye post cataract surgery	Yes	Yes
4334738	231866000	Conjunctival foreign body	Yes	Yes
46270360	2860410001191 02	Moderate laceration of heart with hemopericardium	Yes	Yes
42536775	735771000	Laceration of heart without hemopericardium	Yes	Yes
42536772	735767003	Laceration of intercostal blood vessel	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4152934	283376000	Laceration of breast	Yes	Yes
4105288	282463003	Laceration of bronchus	Yes	Yes
4094831	262627001	Laceration of buccal mucosa	Yes	Yes
4155032	283362001	Laceration of cheek	Yes	Yes
4167100	274167004	Laceration of chest wall	Yes	Yes
4155031	283359004	Laceration of forehead	Yes	Yes
439177	84338002	Laceration of heart with penetration of heart chambers	Yes	Yes
4094832	262628006	Laceration of intraoral surface of lip	Yes	Yes
1448700	1179500100011 9103	Laceration of left subclavian artery	Yes	Yes
4155033	283363006	Laceration of lip	Yes	Yes
4095551	262785000	Laceration of lung	Yes	Yes
255674	76890007	Laceration of lung without open wound into thorax	Yes	Yes
4162441	373602003	Laceration of nose	Yes	Yes
1448746	1184503100011 9102	Laceration of right subclavian artery	Yes	Yes
375393	14997005	Laceration of skin of eyelid AND periocular area	Yes	Yes
1450774	8949918510001 19108	Laceration of subclavian artery	Yes	Yes
4094975	262780005	Laceration of thymus	Yes	Yes
3654402	830275007	Inadvertent dural tap	Yes	Yes
4254651	409986001	Tache noire	Yes	Yes
3176556	2185000100000 4100	Excoriation of right cheek	Yes	Yes
4111224	285326004	Ear ring embedded in ear lobe	Yes	Yes
4126318	304235000	Sharps injury	Yes	Yes
4100904	299972003	Sting of skin	Yes	Yes
4261688	35542008	Chancriform pyoderma	Yes	Yes
4298612	402259008	Dithranol burn	Yes	Yes
4261688	35542008	Chancriform pyoderma	Yes	Yes
4170964	276468004	Cigarette burn	Yes	Yes
4094810	262564002	Deep contused wound	Yes	Yes
43530822	609343002	Surgical incision wound	Yes	Yes
37119168	724927008	Laceration of biceps brachii	Yes	Yes
37116495	733224007	Laceration of brachial artery	Yes	Yes
36686398	1179444100011 9107	Laceration of diaphragm	Yes	Yes
40492342	447350003	Laceration of eyebrow	Yes	Yes
4334732	231845008	Laceration of lacrimal canaliculus	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37310065	1177725100011 9106	Laceration of left biceps brachii muscle	Yes	Yes
37310197	1085006100011 9109	Laceration of left breast	Yes	Yes
37310221	1087431100011 9103	Laceration of left cheek	Yes	Yes
36686111	1085026100011 9102	Laceration of left chest wall	Yes	Yes
36687218	1652708100011 9105	Laceration of left eyebrow	Yes	Yes
37161829	1183020100011 9106	Laceration of left pectoral muscle	Yes	Yes
36686254	1095916100011 9107	Laceration of left upper arm	Yes	Yes
40489893	446896007	Laceration of lower lip	Yes	Yes
37310087	1177525100011 9101	Laceration of muscle of left upper arm	Yes	Yes
37110626	724918007	Laceration of muscle of long head of biceps brachii	Yes	Yes
37310068	1177517100011 9104	Laceration of muscle of right upper arm	Yes	Yes
37119164	724886002	Laceration of muscle of thorax	Yes	Yes
37160051	1087269100011 9105	Laceration of nasal septum	Yes	Yes
37165344	1252749008	Laceration of pectoral muscle	Yes	Yes
37116491	733219009	Laceration of pleura	Yes	Yes
37310058	1178096100011 9105	Laceration of right biceps brachii muscle	Yes	Yes
37310198	1085002100011 9104	Laceration of right breast	Yes	Yes
37310222	1087427100011 9103	Laceration of right cheek	Yes	Yes
36686110	1085022100011 9107	Laceration of right chest wall	Yes	Yes
36687217	1652680100011 9108	Laceration of right eyebrow	Yes	Yes
36686186	1093934100011 9105	Laceration of right upper arm	Yes	Yes
40489894	446897003	Laceration of skin of periocular area	Yes	Yes
37110628	724920005	Laceration of tendon of long head of biceps brachii	Yes	Yes
37167430	1264368006	Laceration of tendon of upper arm	Yes	Yes
42536769	735764005	Laceration of thorax without foreign body	Yes	Yes
37110641	724935006	Laceration of triceps brachii	Yes	Yes
42536798	735800008	Laceration of upper arm without foreign body	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
46270359	286001000119104	Minor laceration of heart with hemopericardium	Yes	Yes
40492403	447404002	Superficial foreign body	-	Yes
132771	90808005	Burn any degree involving 90 percent OR more of body surface	-	Yes
140624	403582001	Self-inflicted caustic burn	-	Yes
443419	312608009	Laceration - injury	-	Yes
36686492	11849101000119106	Abrasion of skin of left breast	-	Yes
37171614	397810000871005	Abrasion of skin of left half of posterior chest wall	-	Yes
36686491	11849061000119108	Abrasion of skin of right breast	-	Yes
37171616	398010000871006	Abrasion of skin of right half of posterior chest wall	-	Yes
4052359	211040008	Abrasion of skin of breast	-	Yes
4052358	211039006	Abrasion of skin of chest	-	Yes
4050854	211193007	Abrasion of skin of clavicular region	-	Yes
4055710	211038003	Abrasion of skin of interscapular region of back	-	Yes
3657674	11849661000119103	Abrasion of skin of left chest wall	-	Yes
3657672	11849581000119108	Abrasion of skin of left clavicular region	-	Yes
3657964	11823681000119108	Abrasion of skin of left upper arm	-	Yes
3657673	11849621000119108	Abrasion of skin of right chest wall	-	Yes
3657671	11849541000119103	Abrasion of skin of right clavicular region	-	Yes
3657963	11823641000119103	Abrasion of skin of right upper arm	-	Yes
36716562	722608004	Superficial bite of scalp	-	Yes
42572795	341710000091005	Degloving injury of distal tail	-	Yes
4159754	371123004	Infected conjunctival abrasion	-	Yes
4156265	370247008	Facial laceration	-	Yes
4152933	283369005	Laceration of upper arm	-	Yes
40490913	447095001	Acid chemical burn of conjunctival sac	-	Yes
40488335	446556000	Acid chemical burn of cornea	-	Yes
40486947	446234004	Alkaline chemical burn of conjunctival sac	-	Yes
40490912	447094002	Alkaline chemical burn of cornea	-	Yes
37309851	121046710001119108	Chemical burn of back of left hand	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37309850	12104711000119107	Chemical burn of back of right hand	-	Yes
37309886	12081251000119109	Chemical burn of left conjunctival sac	-	Yes
37309884	12081411000119109	Chemical burn of left cornea	-	Yes
37309849	12104751000119108	Chemical burn of left hand	-	Yes
37309812	12114321000119102	Chemical burn of left palm	-	Yes
37309885	12081291000119104	Chemical burn of right conjunctival sac	-	Yes
37309883	12081451000119105	Chemical burn of right cornea	-	Yes
37309848	12105031000119100	Chemical burn of right hand	-	Yes
37309803	12115601000119102	Chemical burn of right palm	-	Yes
37311233	823022009	Chemical burn of skin	-	Yes
42539537	735469001	Chemical burn of skin caused by corrosive substance	-	Yes
37165570	1255135001	Second degree chemical burn of foot	-	Yes
37163389	12111121000119102	Second degree chemical burn of left foot	-	Yes
37163390	12112281000119102	Second degree chemical burn of right foot	-	Yes
442860	211662007	Acid chemical burn of cornea and conjunctival sac	-	Yes
442861	211661000	Alkaline chemical burn of cornea and conjunctival sac	-	Yes
4294186	385510003	Bleach burn of skin	-	Yes
4138484	426284001	Chemical burn	-	Yes
4335893	231869007	Chemical burn injury to conjunctiva	-	Yes
4059565	211659009	Chemical burn of eyelid region	-	Yes
4231062	438786003	Chemical burn of hand	-	Yes
4152475	28384005	Chemical burn of internal organ	-	Yes
4124365	235021001	Chemical burn of oral mucosa	-	Yes
4335980	231945007	Chemical injury to cornea	-	Yes
4167859	418998008	Chemical keratitis	-	Yes
4290847	400024005	Alkali burn of skin	-	Yes
4270999	400027003	Cement burn of skin	-	Yes
4266801	400113006	Acid burn of skin	-	Yes
4290982	400161004	Phosphorus burn of skin	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37171615	39791000087107	Abrasion of skin of left upper eyelid	-	Yes
37171572	38921000087103	Abrasion of skin of periorbital region of left eye	-	Yes
37170537	38931000087101	Abrasion of skin of periorbital region of right eye	-	Yes
37171618	39811000087108	Abrasion of skin of right upper eyelid	-	Yes
1244395	1287535001	Abrasion of skin of cheek	-	Yes
4002668	110168002	Abrasion of skin of chin	-	Yes
4003352	110167007	Abrasion of skin of circumoral region of face	-	Yes
4338754	231815005	Abrasion of skin of eyelid	-	Yes
1244396	1287536000	Abrasion of skin of face	-	Yes
4001833	110164000	Abrasion of skin of forehead	-	Yes
3662177	1184854100011 9106	Abrasion of skin of left eyelid	-	Yes
3662175	1184725100011 9105	Abrasion of skin of lip	-	Yes
4106681	283052002	Abrasion of skin of nose	-	Yes
4002667	110165004	Abrasion of skin of periorbital region of face	-	Yes
4001834	110169005	Abrasion of skin of preauricular region of face	-	Yes
3657669	1184846100011 9109	Abrasion of skin of right eyelid	-	Yes
4005625	110166003	Abrasion of skin of zygomatic region of face	-	Yes
37206211	785852005	Deep contusion	-	Yes
4119766	234083009	Venous puncture	-	Yes
4095256	262549002	Superficial puncture wound	-	Yes
760827	1186440100011 9106	Superficial foreign body of skin of left foot	-	Yes
4059565	211659009	Chemical burn of eyelid region	-	Yes
4124365	235021001	Chemical burn of oral mucosa	-	Yes
4138484	426284001	Chemical burn	-	Yes
4152475	28384005	Chemical burn of internal organ	-	Yes
4231062	438786003	Chemical burn of hand	-	Yes
4335893	231869007	Chemical burn injury to conjunctiva	-	Yes
4335980	231945007	Chemical injury to cornea	-	Yes
37311233	823022009	Chemical burn of skin	-	Yes
132771	90808005	Burn any degree involving 90 percent OR more of body surface	-	Yes
4050852	211190005	Abrasion of skin of scapular region of back	-	Yes
4328944	431044006	Abrasion of skin of sternal region	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4050853	211192002	Abrasion of skin of upper arm	-	Yes
4338755	231816006	Laceration of eyelid	-	Yes
36686135	1087483100011 9100	Laceration of left eyelid	-	Yes
36686134	1087479100011 9106	Laceration of right eyelid	-	Yes
760826	1186432100011 9107	Superficial foreign body of skin of right foot	-	Yes

Possible tetanus prone wounds

Concept ID	Concept Code	Concept Name	Descendants	Exclude
73075	68142008	Contusion of upper limb	Yes	-
73925	6055000	Burn of upper limb	Yes	-
140266	11437003	Contusion of back	Yes	-
195977	36787001	Contusion of trunk	Yes	-
197163	52405000	Burn of trunk	Yes	-
197751	84677008	Burn of lower limb	Yes	-
199192	78794000	Abrasion and/or friction burn of trunk without infection	Yes	-
199978	91603007	Contusion of lower limb	Yes	-
200171	91374005	Carbuncle of skin and/or subcutaneous tissue	Yes	-
432512	216897005	Foreign object left in body during procedure	Yes	-
443419	312608009	Laceration - injury	Yes	-
36683323	781126009	Accidental puncture of artery	Yes	-
36686412	117994010001 19100	Laceration of left renal artery	Yes	-
36686431	118084110001 19100	Laceration of sigmoid colon	Yes	-
36686434	118136210001 19100	Superficial foreign body in low back	Yes	-
36686505	118527810001 19100	Superficial foreign body in head	Yes	-
36712756	108507410001 19100	Accidental needle stick injury	Yes	-
37311968	788930004	Focal brain contusion	Yes	-
40492403	447404002	Superficial foreign body	Yes	-
44783259	699326004	Accidental puncture of pleura	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4047242	13136005	Injection site	Yes	-
4054926	242992007	Accidental puncture during a procedure	Yes	-
4094464	287138003	Burn to cornea - full thickness	Yes	-
4094810	262564002	Deep contused wound	Yes	-
4095256	262549002	Superficial puncture wound	Yes	-
4114306	299973008	Plant sting	Yes	-
4138484	426284001	Chemical burn	Yes	-
4151452	314534006	Thermal burn	Yes	-
4152473	283837005	Fish bite wound	Yes	-
4154700	371058004	Venomous sting	Yes	-
4219275	72587008	Sting	Yes	-
4257686	409985002	Arthropod bite wound	Yes	-
4257762	441373001	Abrasion and/or friction burn of head and/or neck without infection	Yes	-
4266654	400012003	Abrasion and/or friction burn of skin	Yes	-
4294447	402939001	Bacterial pyoderma	Yes	-
4296204	403190006	Epidermal burn of skin	Yes	-
4296205	403191005	Partial thickness burn	Yes	-
4334738	231866000	Conjunctival foreign body	Yes	-
4337359	87177002	Burn of mouth	Yes	-
24198	262791003	Contusion of esophagus	-	-
26286	60713008	Burn of neck	-	-
27438	45982008	Burn of esophagus	-	-
80294	68017002	Foreign body in genitourinary tract	-	-
132771	90808005	Burn any degree involving 90 percent OR more of body surface	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
133384	6341002	Burn any degree involving less than 10 percent of body surface	-	-
133645	5414003	Burn any degree involving 80-89 percent of body surface	-	-
135699	14276000	Burn any degree involving 10-19 percent of body surface	-	-
135700	40904009	Burn any degree involving 30-39 percent of body surface	-	-
136871	22428001	Burn any degree involving 20-29 percent of body surface	-	-
137729	72998004	Burn of back	-	-
138312	38978009	Burn of scalp	-	-
138315	86660005	Burn any degree involving 40-49 percent of body surface	-	-
139203	51041008	Burn any degree involving 60-69 percent of body surface	-	-
140581	81116005	Burn of chin	-	-
195976	13140001	Burn of gastrointestinal tract	-	-
198030	17543009	Burn of internal organ	-	-
201728	33334006	Foreign body in digestive tract	-	-
256301	22233004	Burn of nose	-	-
261738	284210005	Multiple burns of head and neck	-	-
374226	274205003	Burn of eye region	-	-
374753	22383006	Closed fracture of vault of skull with cerebral laceration AND/OR contusion	-	-
378048	39065001	Burn of ear	-	-
379209	284541005	Burn of conjunctiva	-	-
381174	211483007	Contusion of globe of eye	-	-
381444	367423000	Contusion of eye	-	-
433071	111721009	Contusion of multiple sites	-	-
433911	416179002	Contusion of eye AND ocular adnexa	-	-
433917	10132008	Burns of multiple sites	-	-
434119	69741000	Hidradenitis	-	-
434231	269232009	Burn confined to eye and adnexa	-	-
438047	42697001	Contusion of orbital tissues	-	-
438931	217835008	Foreign body accidentally entering eye and adnexa	-	-
441737	125667009	Contusion	-	-
442013	125666000	Burn	-	-
442018	74402000	Foreign body accidentally left during a procedure	-	-
442612	64647005	Burn any degree involving 50-59 percent of body surface	-	-
443589	427828004	Burn of nasal septum	-	-
444105	46000006	Burn any degree involving 70-79 percent of body surface	-	-
618696	874804000	Contusion of head and/or neck	-	-
760766	11786081000119100	Superficial foreign body of skin of right hand	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
760767	11786161000119100	Superficial foreign body of skin of left hand	-	-
760826	11864321000119100	Superficial foreign body of skin of right foot	-	-
760827	11864401000119100	Superficial foreign body of skin of left foot	-	-
763089	435961000124101	Peritoneal dialysis catheter insertion site	-	-
3178241	12910001000004100	Sternal wound infection	-	-
3179733	21050001000004100	Right temporal frontal scalp contusions	-	-
3183470	27652100000 4108	Cerebral contusion with concurrent subarachnoid hemorrhage	-	-
3184859	26840001000004100	Left temporal lobe contusion	-	-
3186564	11730001000004100	Steel plate in left arm	-	-
3186570	17660001000004100	Frontal lobe contusion	-	-
3189365	15390001000004100	Patient has metal bone fixation hardware	-	-
3654402	830275007	Inadvertent dural tap	-	-
3655406	863893009	Application site burn	-	-
3655953	870540001	Contusion of hindbrain	-	-
4001835	110174002	Burn of skin of preauricular region	-	-
4001838	110182002	Burn of forehead	-	-
4001842	110220002	Second degree burn of hard palate	-	-
4001846	110231005	Burn erythema of tonsillar area	-	-
4001849	110238004	Contusion of subcondylar region of mandible	-	-
4001850	110240009	Contusion of ramus of mandible	-	-
4001851	110244000	Contusion of forehead	-	-
4001852	110251009	Contusion of maxillary vestibule	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4001853	110256004	Contusion of tongue	-	-
4001854	110257008	Contusion of buccal mucosa	-	-
4001855	110259006	Contusion of hard palate	-	-
4002681	110218000	Burn of hard palate	-	-
4002682	110219008	Burn erythema of hard palate	-	-
4002686	110239007	Contusion of coronoid process of mandible	-	-
4002688	110241008	Contusion of symphysis of body of mandible	-	-
4002689	110242001	Contusion of alveolar border of body of mandible	-	-
4002831	110247007	Contusion of malar region of face	-	-
4002832	110252002	Contusion of mandibular vestibule	-	-
4002833	110253007	Contusion of maxillary attached gingiva	-	-
4002834	110255000	Contusion of floor of mouth	-	-
4002835	110261002	Contusion of oropharynx	-	-
4003353	110170006	Burn of periorbital region	-	-
4003359	110186004	Burn of cheek	-	-
4003509	109672001	Replanted avulsed tooth	-	-
4004979	110222005	Burn of soft palate	-	-
4004980	110227004	Burn erythema of oropharynx	-	-
36675631	772072004	Retained fragment of urethral catheter	-	-
36686160	109007510001 19100	Contusion of orbital tissue of right eye	-	-
36686161	109007910001 19100	Contusion of orbital tissue of left eye	-	-
36686191	109433110001 19100	Contusion of right cerebrum	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
36686192	109434710001 19100	Contusion of left cerebrum	-	-
36686474	118440310001 19100	Contusion of right ear	-	-
36686475	118440710001 19100	Contusion of left ear	-	-
36686478	118444310001 19100	Superficial foreign body of throat	-	-
36686493	118504010001 19100	Superficial foreign body in right breast	-	-
36686494	118504410001 19100	Superficial foreign body in left breast	-	-
36712758	109005110001 19100	Contusion of globe of right eye	-	-
36712759	109005510001 19100	Contusion of globe of left eye	-	-
36716562	722608004	Superficial bite of scalp	-	-
36716737	722907006	Contusion of cerebellum due to birth trauma	-	-
36716738	722908001	Contusion of brain due to birth trauma	-	-
37108761	122433610001 19100	Wound abscess following procedure	-	-
37158895	1281808009	Deep puncture	-	-
37206211	785852005	Deep contusion	-	-
37309870	120656310001 19100	Burn of right ear	-	-
37309871	120655910001 19100	Burn of left ear	-	-
37309875	120819710001 19100	Burn of right eye region	-	-
37309876	120819310001 19100	Burn of left eye region	-	-
37309877	120818510001 19100	Burn of right eyelid	-	-
37309878	120818110001 19100	Burn of left eyelid	-	-
37309879	120816910001 19100	Burn of conjunctival sac of right eye	-	-
37309880	120816510001 19100	Burn of conjunctival sac of left eye	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37309881	12081531000119100	Burn of cornea of right eye	-	-
37309882	12081491000119100	Burn of cornea of left eye	-	-
40479564	441519008	Contusion of infraorbital nerve	-	-
40485019	444109008	Infection of wound hematoma	-	-
40489849	446856005	Burn of conjunctival sac	-	-
40492324	447333000	Burn of ocular adnexa	-	-
42536696	735645009	Contusion of head	-	-
42536917	735951001	Vascular catheter insertion site	-	-
43021394	473154008	Retained fragment of ureteric catheter	-	-
43021523	473243005	Burn of eye region with burn of face	-	-
43021532	473252001	Burn of multiple sites of face without involvement of eye proper	-	-
43021536	473256003	Burn of multiple sites of head without involvement of eye proper	-	-
43021540	473260000	Burn of multiple sites of neck	-	-
44783322	699394008	Flash burn of eye	-	-
44784606	698780001	Burn of cornea and conjunctival sac	-	-
4004981	110228009	Second degree burn of oropharynx	-	-
4004982	110230006	Burn of tonsillar area	-	-
4004983	110237009	Contusion of condylar process of mandible	-	-
4004984	110245004	Contusion of auricle of ear	-	-
4004985	110246003	Contusion of preauricular region of face	-	-
4004986	110248002	Contusion of circumoral region of face	-	-
4004987	110249005	Contusion of chin	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4004988	110254001	Contusion of mandibular attached gingiva	-	-
4004989	110258003	Contusion of soft palate	-	-
4004990	110262009	Contusion of periorbital region	-	-
4005638	110223000	Burn erythema of soft palate	-	-
4005639	110224006	Second degree burn of soft palate	-	-
4005640	110226008	Burn of oropharynx	-	-
4005641	110232003	Second degree burn of tonsillar area	-	-
4005642	110243006	Contusion of maxilla	-	-
4005643	110250005	Contusion of mouth	-	-
4005644	110260001	Contusion of tonsil	-	-
4022585	11639007	Puncture	-	-
4031190	14448006	Swallowed foreign body	-	-
4034021	23713006	Contusion of cerebral cortex	-	-
4043719	230619007	Contusion of peripheral nerve	-	-
4045579	13085003	Burn of larynx	-	-
4047853	206204009	Scalp bruising due to birth trauma	-	-
4051764	211476000	Contusion, throat	-	-
4052011	15997003	Postoperative wound abscess	-	-
4054068	125668004	Contusion of face	-	-
4055128	242853001	Self injury by cigarette burn	-	-
4060006	212049006	Burns classified according to percentage of body surface involved	-	-
4080735	278026003	Arborescent patterning of skin	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4082020	277209002	Bruising over mastoid	-	-
4086223	283136003	Superficial contusion of skin of neck	-	-
4094462	287133007	Burn to eyelid - blister	-	-
4094463	287137008	Burn to cornea - blister	-	-
4094686	262532009	Pattern bruising	-	-
4094834	262635003	Contusion of oral cavity	-	-
4094835	262636002	Contusion of palate	-	-
4094836	262637006	Contusion of gingivae	-	-
4094837	262639009	Contusion of oral alveolar mucosa	-	-
4094847	262689001	Contusion of cerebrum	-	-
4094848	262692002	Burst lobe of brain	-	-
4094973	262777009	Contusion of parathyroid gland	-	-
4095266	262581006	Head burn	-	-
4095419	262676007	Contusion of larynx	-	-
4095853	262534005	Confluent bruising	-	-
4095874	262638001	Contusion of intraoral surface of lip	-	-
4096014	262767007	Contusion of salivary gland	-	-
4096016	262774002	Contusion of thyroid gland	-	-
4096318	262533004	Impact bruising	-	-
4096477	262582004	Burn of face	-	-
4096613	262681003	Contusion of trachea	-	-
4104920	282451008	Burn of nasal cavity	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4104921	282454000	Contusion of pharynx	-	-
4106507	283135004	Superficial bruising of head and neck	-	-
4107339	282450009	Contusion of nasal septum	-	-
4107355	284186002	Burn of nervous system structure	-	-
4107356	284190000	Burn of cardiovascular structure	-	-
4107359	284202009	Superficial corrosion of cheek	-	-
4107672	284537006	Eyelid burn	-	-
4108318	284189009	Burn of larynx and/or trachea	-	-
4108319	284191001	Burn of lymphoreticular structure	-	-
4108320	284194009	Burn of endocrine structure	-	-
4108321	284195005	Burn of musculoskeletal structure	-	-
4108466	284188001	Burn of respiratory tract	-	-
4108467	284196006	Burn of skin	-	-
4111224	285326004	Ear ring embedded in ear lobe	-	-
4111364	284207003	Burn of throat	-	-
4115184	287153006	Over 70 percent body burnt	-	-
4119172	262903001	Contusion of urinary conduit	-	-
4119766	234083009	Venous puncture	-	-
4120736	288511001	Burn involving 8 percent of body surface	-	-
4120737	288513003	Burn involving 6 percent of body surface	-	-
4120738	288518007	Burn involving 2 percent of body surface	-	-
4121634	234002001	Arterial contusion	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4121786	234082004	Contusion of vein	-	-
4123196	288509005	Burn of skin of body region	-	-
4123197	288515005	Burn involving 4 percent of body surface	-	-
4123539	288510000	Burn involving 9 percent of body surface	-	-
4123540	288512008	Burn involving 7 percent of body surface	-	-
4123541	288514009	Burn involving 5 percent of body surface	-	-
4123543	288519004	Burn involving 1 percent of body surface	-	-
4126318	304235000	Sharps injury	-	-
4127363	288516006	Burn involving 3 percent of body surface	-	-
4129410	125687005	Contusion of ocular adnexa	-	-
4133020	127304009	Cerebellar contusion	-	-
4133021	127305005	Brain stem contusion	-	-
4134164	262968008	Intramuscular contusion	-	-
4136547	262957008	Contusion of cranial nerve	-	-
4139281	32825000	Perforation due to foreign body accidentally left in operative wound AND/OR body cavity during a procedure	-	-
4143235	425656005	Burn caused by radiation	-	-
4143888	307310000	Postoperative abdominal wall wound abscess	-	-
4146496	34663006	Contusion of brain	-	-
4147870	310645008	Eyelash stuck in meibomian gland orifice	-	-
4148390	35933005	Laceration	-	-
4148580	269729005	Self injury with external chemical burn	-	-
4148867	35447004	Burn of pharynx	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4149911	309749008	Eyelash stuck in lacrimal punctum	-	-
4151405	269795008	Foreign body accident - orifice	-	-
4152343	271762000	Burrows in skin	-	-
4152659	269700008	Effect of ignition of clothing from burning bedding	-	-
4173257	4821001	Contusion of cheek	-	-
4173326	276624006	Neonatal bruising of scalp	-	-
4174369	50228009	Contusion of ear	-	-
4176093	4989003	Electrical burn of skin	-	-
4182968	297964006	Love bite mark	-	-
4194733	312646002	Burn of skin of eye region	-	-
4199789	314531003	Burn of anterior eyeball segment	-	-
4201095	301768009	Contusion of supraorbital area	-	-
4204061	52945003	Contusion of mandibular joint area	-	-
4219836	417654008	Contusion of ocular adnexa and periocular tissues	-	-
4228294	405571006	Electrical burn	-	-
4246585	60341009	Burrow	-	-
4246724	60897004	Contusion of nose	-	-
4246852	61035004	Burn of trachea	-	-
4254651	409986001	Tache noire	-	-
4270719	402163008	Dermatosis due to hair as foreign body	-	-
4275292	64458007	Contusion of lip	-	-
4293479	37645002	Burn of head AND/OR neck	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4296203	403186009	Reaction to thorn and/or spine in skin	-	-
4296228	386141001	Insertion site	-	-
4298083	386143003	Drain insertion site	-	-
4299126	403187000	Reaction to metallic ring, stud and/or infibulata in skin	-	-
4300257	385526002	Steam burn of skin	-	-
4300975	386144009	Line insertion site	-	-
4301281	403706003	Electrocautery burn	-	-
4308159	423838005	Scleral wound burn	-	-
4308368	390835003	Post-traumatic bruising	-	-
4309466	213277004	Foreign body accidentally left within patient postoperatively	-	-
4310238	8513005	Contusion of neck	-	-
4317277	95401009	Injection site bruising	-	-
4331284	22562004	Contusion of scalp	-	-
4333982	231814009	Contusion of eyelid	-	-
4334731	231844007	Lacrimal punctum burn	-	-
4335897	231884003	Burn of sclera	-	-
35607586	11848621000119100	Contusion of right eyelid	-	-
35611194	11848661000119100	Contusion of left eyelid	-	-
36674185	770555009	Burn of eye proper	-	-
36675187	771533007	Superficial soft tissue infection at site of neuraxial block	-	-
36675189	771535000	Superficial soft tissue infection at site of peripheral nerve block	-	-
37116482	733209003	Burn of skin due to exposure to man-made ultraviolet light	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37116483	733210008	Burn of skin due to and following ultraviolet light therapy	Yes	Yes
40948466	262687004	Cerebellar laceration and contusion	Yes	Yes
376552	269144002	Cerebral laceration and contusion	Yes	Yes
42536780	735776005	Laceration of abdomen with foreign body	Yes	Yes
42536850	735863007	Laceration of ankle with foreign body	Yes	Yes
42536851	735864001	Laceration of foot with foreign body	Yes	Yes
37117752	733232004	Laceration of forearm with foreign body	Yes	Yes
42536809	735814008	Laceration of hand with foreign body	Yes	Yes
444408	9264002	Laceration of kidney with open wound into abdominal cavity	Yes	Yes
37161328	11787241000119100	Foreign body in skin of finger of left hand with infection	Yes	Yes
37161334	11787641000119100	Foreign body in skin of finger of right hand with infection	Yes	Yes
37161923	11843351000119100	Foreign body in skin of left ear with infection	Yes	Yes
37161316	11786201000119100	Foreign body in skin of left hand with infection	Yes	Yes
37161906	11837561000119100	Foreign body in skin of left lower leg with infection	Yes	Yes
37161330	11787401000119100	Foreign body in skin of left ring finger with infection	Yes	Yes
37161236	11774651000119100	Foreign body in skin of left thumb with infection	Yes	Yes
37165261	1251524009	Foreign body in skin of lower leg with infection	Yes	Yes
37167420	1264305006	Foreign body in skin of middle finger with infection	Yes	Yes
37161922	11843271000119100	Foreign body in skin of right ear with infection	Yes	Yes
37161315	11786121000119100	Foreign body in skin of right hand with infection	Yes	Yes
37161904	11837481000119100	Foreign body in skin of right lower leg with infection	Yes	Yes
37161336	11787801000119100	Foreign body in skin of right ring finger with infection	Yes	Yes
37161234	11774571000119100	Foreign body in skin of right thumb with infection	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37168440	1279984004	Foreign body in skin of ring finger with infection	Yes	Yes
37168441	1279985003	Foreign body in skin of thumb with infection	Yes	Yes
37161329	11787361000119100	Superficial foreign body of left middle finger with infection	Yes	Yes
37161335	11787761000119100	Superficial foreign body of right middle finger with infection	Yes	Yes
618790	876807009	Foreign body in gingival mucous membrane with infection	Yes	Yes
618796	876813000	Foreign body in mucosa of vagina with infection	Yes	Yes
604295	876855009	Foreign body in skin of abdomen with infection	Yes	Yes
618775	876790006	Foreign body in skin of ankle with infection	Yes	Yes
618791	876808004	Foreign body in skin of axilla with infection	Yes	Yes
618793	876810002	Foreign body in skin of back with infection	Yes	Yes
618803	876820007	Foreign body in skin of breast with infection	Yes	Yes
618794	876811003	Foreign body in skin of buttock with infection	Yes	Yes
619670	897300000	Foreign body in skin of ear with infection	Yes	Yes
618776	876791005	Foreign body in skin of elbow with infection	Yes	Yes
618913	879798000	Foreign body in skin of finger with infection	Yes	Yes
604294	876854008	Foreign body in skin of flank with infection	Yes	Yes
618914	879800007	Foreign body in skin of forearm with infection	Yes	Yes
618801	876818009	Foreign body in skin of groin with infection	Yes	Yes
618915	879801006	Foreign body in skin of hand with infection	Yes	Yes
618788	876805001	Foreign body in skin of hip with infection	Yes	Yes
42597273	321051000009102	Laceration of common digital extensor tendon	Yes	Yes
42597275	321071000009108	Laceration of deep digital flexor tendon	Yes	Yes
42597257	320751000009105	Laceration of digital extensor tendon	Yes	Yes
42597260	320781000009102	Laceration of distal sesamoidean ligament	Yes	Yes
42596423	311831000009109	Laceration of footpad	Yes	Yes
42597263	320811000009104	Laceration of long digital extensor tendon	Yes	Yes
42599680	358241000009100	Laceration of palatal mucosa	Yes	Yes
42574053	320981000009104	Laceration of peroneus tertius tendon	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
42597246	320631000009108	Laceration of superficial digital flexor	Yes	Yes
42599363	351041000009104	Laceration of third eyelid	Yes	Yes
42599271	350041000009109	Lamellar suppuration	Yes	Yes
42596392	311531000009107	Mucocutaneous pyoderma	Yes	Yes
954102	361041000009109	Bone around jaw	Yes	Yes
4038709	228389003	Groin injector	Yes	Yes
42572636	335881000009103	Collar gall	Yes	Yes
42597293	321281000009101	Laceration of extensor carpi radialis tendon	Yes	Yes
43530828	609351004	Abrasion and/or friction burn of lower leg with infection	Yes	Yes
43530817	609338009	Abrasion and/or friction burn of upper limb, infected	Yes	Yes
4187789	46080009	Abrasion and/or friction burn of abdominal wall with infection	Yes	Yes
442587	78360004	Abrasion and/or friction burn of ankle with infection	Yes	Yes
4194534	79077003	Abrasion and/or friction burn of back with infection	Yes	Yes
4166856	45581006	Abrasion and/or friction burn of breast with infection	Yes	Yes
4321134	9802006	Abrasion and/or friction burn of buttock with infection	Yes	Yes
4009313	111707007	Abrasion and/or friction burn of chest wall with infection	Yes	Yes
4263428	61383005	Abrasion and/or friction burn of ear with infection	Yes	Yes
4170853	49454000	Abrasion and/or friction burn of flank with infection	Yes	Yes
135688	269202001	Abrasion and/or friction burn of foot and/or toe, infected	Yes	Yes
4170873	49524007	Abrasion and/or friction burn of groin with infection	Yes	Yes
193635	8748000	Abrasion and/or friction burn of hip with infection	Yes	Yes
4193895	79340003	Abrasion and/or friction burn of interscapular region with infection	Yes	Yes
4058352	211336009	Abrasion and/or friction burn of lower limb, infected	Yes	Yes
444258	84278006	Abrasion and/or friction burn of neck with infection	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4173737	50293005	Abrasion and/or friction burn of penis with infection	Yes	Yes
443766	26652002	Abrasion and/or friction burn of scalp with infection	Yes	Yes
4001323	10995009	Abrasion and/or friction burn of scapular region with infection	Yes	Yes
4223376	84204007	Abrasion and/or friction burn of scrotum with infection	Yes	Yes
619669	897299008	Foreign body in skin of cheek with infection	Yes	Yes
619671	897301001	Foreign body in skin of face with infection	Yes	Yes
618999	880057004	Foreign body in skin of foot with infection	Yes	Yes
37168439	1279983005	Foreign body in skin of great toe with infection	Yes	Yes
37170160	11794061000119100	Foreign body in skin of left great toe with infection	Yes	Yes
619673	897303003	Foreign body in skin of nose with infection	Yes	Yes
37161957	11848021000119100	Infected abrasion of cheek	Yes	Yes
1244385	1287522005	Infected abrasion of skin of anus	Yes	Yes
1244397	1287537009	Infected abrasion of skin of eyelid	Yes	Yes
4050695	210992005	Infected abrasion of skin of face	Yes	Yes
1448749	11849741000119100	Infected abrasion of skin of forehead	Yes	Yes
3662178	11848581000119100	Infected abrasion of skin of left eyelid	Yes	Yes
1075004	11843111000119100	Infected abrasion of skin of nose	Yes	Yes
1244399	1287539007	Infected abrasion of skin of perineum	Yes	Yes
3662176	11848501000119100	Infected abrasion of skin of right eyelid	Yes	Yes
1244386	1287523000	Infected abrasion of skin of vulva	Yes	Yes
40490926	447106005	Deep third degree burn of genitalia	Yes	Yes
42539156	762486007	Deep third degree burn of hip	Yes	Yes
40492774	445848002	Deep third degree burn of lip	Yes	Yes
42536575	735505006	Deep third degree burn of perineum	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4052069	211793001	Corrosion of third degree of trunk	Yes	Yes
36674271	771226008	Deep third degree burn of abdomen	Yes	Yes
132770	45267008	Deep third degree burn of back	Yes	Yes
444427	89040002	Deep third degree burn of back of hand	Yes	Yes
73091	89843004	Deep third degree burn of breast	Yes	Yes
36674644	770351001	Deep third degree burn of buttock	Yes	Yes
444042	35507009	Deep third degree burn of chest wall	Yes	Yes
4100336	27597005	Deep third degree burn of female genitalia	Yes	Yes
4339221	88277007	Deep third degree burn of male genitalia	Yes	Yes
443787	2582004	Deep third degree burn of multiple sites of lower limb	Yes	Yes
442593	60825003	Deep third degree burn of scapular region	Yes	Yes
195995	86744003	Deep third degree burn of trunk	Yes	Yes
36674649	770356006	Deep third degree burn of upper and lower lip	Yes	Yes
36674646	770353003	Deep third degree burns of multiple sites of trunk	Yes	Yes
77730	36830004	Third degree burn of breast	Yes	Yes
4004977	110217005	Third degree burn of floor of mouth	Yes	Yes
4005631	110197004	Third degree burn of labial mucosa	Yes	Yes
4003504	110213009	Third degree burn of mandibular attached gingiva	Yes	Yes
4005635	110205008	Third degree burn of mandibular vestibule	Yes	Yes
4002678	110209002	Third degree burn of maxillary attached gingiva	Yes	Yes
4005632	110201004	Third degree burn of maxillary vestibule	Yes	Yes
4264281	397181002	Open fracture	Yes	Yes
4299128	403192003	Full thickness burn	Yes	Yes
607984	1156468009	Deep partial thickness burn	Yes	Yes
4094809	262562003	Deep laceration	Yes	Yes
438590	28188001	Brain injury with open intracranial wound	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4106651	283278002	Superficial wood splinter	Yes	Yes
4105265	283229007	Superficial glass foreign body	Yes	Yes
42536577	735507003	Complex burn of genitalia	Yes	Yes
42538714	762488008	Complex burn of hip	Yes	Yes
42536576	735506007	Complex burn of perineum	Yes	Yes
42538705	762475005	Complex burn of trunk	Yes	Yes
197134	21580006	Hematoma AND contusion of liver with open wound into abdominal cavity	Yes	Yes
201715	25554004	Major laceration of liver with open wound into abdominal cavity	Yes	Yes
443870	13891000	Major laceration of liver without open wound into abdominal cavity	Yes	Yes
4005629	110193000	Full thickness burn of buccal mucosa	Yes	Yes
4049045	20659000	Full thickness burn of female genitalia	Yes	Yes
4279639	66554005	Full thickness burn of male genitalia	Yes	Yes
4002685	110236000	Full thickness burn of tongue	Yes	Yes
1075247	1303355004	Foreign body in skin of index finger with infection	Yes	Yes
618779	876796000	Foreign body in skin of interscapular region with infection	Yes	Yes
1074918	117761710001 19100	Foreign body in skin of left forearm with infection	Yes	Yes
619676	897305005	Foreign body in skin of lower limb with infection	Yes	Yes
618787	876804002	Foreign body in skin of neck with infection	Yes	Yes
618800	876817004	Foreign body in skin of penis with infection	Yes	Yes
1074917	117760910001 19100	Foreign body in skin of right forearm with infection	Yes	Yes
618786	876803008	Foreign body in skin of scalp with infection	Yes	Yes
618792	876809007	Foreign body in skin of scapular region with infection	Yes	Yes
618798	876815007	Foreign body in skin of scrotum with infection	Yes	Yes
618789	876806000	Foreign body in skin of shoulder with infection	Yes	Yes
618785	876802003	Foreign body in skin of thigh with infection	Yes	Yes
619672	897302008	Foreign body in skin of trunk with infection	Yes	Yes
618780	876797009	Foreign body in skin of upper arm with infection	Yes	Yes
618778	876795001	Foreign body in skin of wrist with infection	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
36675191	771537008	Infection of deep tissue at puncture site due to and following peripheral nerve block	Yes	Yes
4287930	397176006	Splinter in skin with infection	Yes	Yes
618804	876821006	Superficial foreign body of anus with infection	Yes	Yes
618802	876819001	Superficial foreign body of chest wall with infection	Yes	Yes
1448751	11850281000119100	Superficial foreign body of left breast with infection	Yes	Yes
1448732	11837201000119100	Superficial foreign body of left hip with infection	Yes	Yes
619675	897304009	Superficial foreign body of lip with infection	Yes	Yes
618799	876816008	Superficial foreign body of perineum with infection	Yes	Yes
1448750	11850241000119100	Superficial foreign body of right breast with infection	Yes	Yes
1448731	11837121000119100	Superficial foreign body of right hip with infection	Yes	Yes
618795	876812005	Superficial foreign body of vulva with infection	Yes	Yes
618774	876789002	Superficial foreign body with infection	Yes	Yes
42536781	735777001	Laceration of lower back with foreign body	Yes	Yes
42539040	735778006	Laceration of pelvis with foreign body	Yes	Yes
42536808	735813002	Laceration of wrist with foreign body	Yes	Yes
37116526	733268009	Laceration of hip with foreign body	Yes	Yes
37116546	733291008	Laceration of lower leg with foreign body	Yes	Yes
36716586	722638005	Laceration of neck with foreign body	Yes	Yes
37116623	733397005	Laceration of shoulder region with foreign body	Yes	Yes
37116527	733269001	Laceration of thigh with foreign body	Yes	Yes
37116624	733398000	Laceration of upper arm with foreign body	Yes	Yes
36716563	722609007	Laceration with foreign body of head	Yes	Yes
4038709	228389003	Groin injector	Yes	Yes
4051759	211463006	Foreign body in skin wound	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
36716590	722642008	Major laceration of carotid artery	Yes	Yes
36716591	722645005	Major laceration of external jugular vein	Yes	Yes
36715678	721414002	Major laceration of internal jugular vein	Yes	Yes
36715583	721300003	Major laceration of spleen	Yes	Yes
36717575	722643003	Major laceration of vertebral artery	Yes	Yes
41518333	283650009	Metal nail puncture wound of skin	Yes	Yes
36715559	721269002	Pyogenic abscess of skin caused by bacterium	Yes	Yes
40952668	262597001	Splinter in skin	Yes	Yes
31891955	6960001000004100	Infected laceration of lip	Yes	Yes
41678559	418998008	Chemical keratitis	Yes	Yes
46270358	285821000119105	Major laceration of heart with hemopericardium	Yes	Yes
42597044	318401000009105	Foreign body of third eyelid	Yes	Yes
36717031	10351000132101	Post polypectomy syndrome	Yes	Yes
4030985	238427006	Staphylococcal scarlatina	Yes	Yes
37110331	724551009	Neonatal burn due to exposure to man-made ultraviolet light during phototherapy	-	Yes
37208109	460641000124106	Deep surgical incision wound	-	Yes
37161333	11787561000119100	Foreign body in skin of right middle finger	-	Yes
37161233	11774531000119100	Foreign body in skin of right thumb	-	Yes
37161781	11824281000119100	Foreign body in skin of right upper arm	-	Yes
4181877	298070000	Foreign body in skin of scalp	-	Yes
618710	874831002	Foreign body in skin of scapular region	-	Yes
618709	874830001	Foreign body in skin of scrotum	-	Yes
4177630	298099005	Foreign body in skin of shin	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4185010	298074009	Foreign body in skin of shoulder	-	Yes
4183115	298105007	Foreign body in skin of sole of foot	-	Yes
4183110	298096003	Foreign body in skin of thigh	-	Yes
4183105	298072008	Foreign body in skin of throat	-	Yes
4181881	298084005	Foreign body in skin of thumb	-	Yes
4185018	298102005	Foreign body in skin of toe	-	Yes
4181882	298085006	Foreign body in skin of trunk	-	Yes
4185012	298076006	Foreign body in skin of upper arm	-	Yes
4177626	298073003	Foreign body in skin of upper limb	-	Yes
4181879	298079004	Foreign body in skin of wrist	-	Yes
37116485	733212000	Open wound of thorax	-	Yes
4183112	298100002	Foreign body in skin of calf	-	Yes
4177623	298063000	Foreign body in skin of cheek	-	Yes
4185016	298087003	Foreign body in skin of chest	-	Yes
4183114	298104006	Foreign body in skin of dorsum of foot	-	Yes
4185014	298081002	Foreign body in skin of dorsum of hand	-	Yes
618719	874840003	Foreign body in skin of ear	-	Yes
4181878	298077002	Foreign body in skin of elbow	-	Yes
4185008	298069001	Foreign body in skin of eye region	-	Yes
4326965	431039004	Foreign body in skin of eyelid	-	Yes
618721	874842006	Foreign body in skin of face	-	Yes
4177627	298083004	Foreign body in skin of finger	-	Yes
37161325	117870410001 19100	Foreign body in skin of finger of left hand	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37161331	11787441000119100	Foreign body in skin of finger of right hand	-	Yes
618743	874917001	Foreign body in skin of flank	-	Yes
4183106	298078007	Foreign body in skin of forearm	-	Yes
4181874	298064006	Foreign body in skin of forehead	-	Yes
4183108	298091008	Foreign body in skin of genitalia	-	Yes
4177631	298103000	Foreign body in skin of great toe	-	Yes
4185017	298095004	Foreign body in skin of groin	-	Yes
4185013	298080001	Foreign body in skin of hand	-	Yes
4185007	298062005	Foreign body in skin of head	-	Yes
4177622	298061003	Foreign body in skin of head and neck	-	Yes
4183116	298106008	Foreign body in skin of heel	-	Yes
4181884	298094000	Foreign body in skin of hip	-	Yes
618722	874844007	Foreign body in skin of interscapular region	-	Yes
4181885	298097007	Foreign body in skin of knee	-	Yes
603210	11843311000119100	Foreign body in skin of left ear	-	Yes
37161238	11775891000119100	Foreign body in skin of left elbow region	-	Yes
4177625	298067004	Foreign body in skin of nose	-	Yes
4181880	298082009	Foreign body in skin of palm of hand	-	Yes
618713	874834005	Foreign body in skin of penis	-	Yes
4177629	298090009	Foreign body in skin of perineum	-	Yes
4055319	212007001	Corrosion of 2nd degree of hip and lower limb, except ankle and foot	-	Yes
4059993	212006005	Corrosion of first degree of hip and lower limb, except ankle and foot	-	Yes
4054552	211875009	Corrosion of first degree of shoulder and upper limb, except wrist and hand	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4057638	211768003	Corrosion of first degree of trunk	-	Yes
4055186	211947008	Corrosion of first degree of wrist and hand	-	Yes
4055329	212047008	Corrosion of internal genitourinary organs	-	Yes
4055327	212039008	Corrosion of larynx, trachea, and lung	-	Yes
4055326	212035002	Corrosion of mouth and pharynx	-	Yes
4055178	211876005	Corrosion of second degree of shoulder and upper limb, except wrist and hand	-	Yes
4052067	211786000	Corrosion of second degree of trunk	-	Yes
4057786	211948003	Corrosion of second degree of wrist and hand	-	Yes
4153248	283497000	Puncture wound of skin	-	Yes
37161955	11847611000119100	Foreign body in mucous membrane of tongue	-	Yes
40487393	446335001	Foreign body in skin of foot	-	Yes
37165706	1255448006	Foreign body in skin of index finger	-	Yes
37309941	11864241000119100	Foreign body in skin of left ankle	-	Yes
37171632	39941000087103	Foreign body in skin of left buttock	-	Yes
37161959	11848221000119100	Foreign body in skin of left eyelid	-	Yes
37310018	11794021000119100	Foreign body in skin of left great toe	-	Yes
37161965	11850921000119100	Foreign body in skin of left half of chest	-	Yes
37161901	11837161000119100	Foreign body in skin of left hip region	-	Yes
37161908	11837681000119100	Foreign body in skin of left knee	-	Yes
37310038	11787121000119100	Foreign body in skin of left little finger	-	Yes
37161905	11837521000119100	Foreign body in skin of left lower leg	-	Yes
37310037	11787201000119100	Foreign body in skin of left ring finger	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37309980	11824681000119100	Foreign body in skin of left shoulder	-	Yes
37161903	11837361000119100	Foreign body in skin of left thigh	-	Yes
37161782	11824361000119100	Foreign body in skin of left upper arm	-	Yes
37310022	11791401000119100	Foreign body in skin of left wrist	-	Yes
37309943	11863681000119100	Foreign body in skin of lesser toe of left foot	-	Yes
37310017	11794101000119100	Foreign body in skin of lesser toe of right foot	-	Yes
37165707	1255449003	Foreign body in skin of little finger	-	Yes
37165705	1255447001	Foreign body in skin of middle finger	-	Yes
37309942	11864161000119100	Foreign body in skin of right ankle	-	Yes
37171633	39951000087100	Foreign body in skin of right buttock	-	Yes
37161958	11848141000119100	Foreign body in skin of right eyelid	-	Yes
37310019	11793941000119100	Foreign body in skin of right great toe	-	Yes
37161964	11850881000119100	Foreign body in skin of right half of chest	-	Yes
37161899	11837081000119100	Foreign body in skin of right hip region	-	Yes
37161907	11837601000119100	Foreign body in skin of right knee	-	Yes
37310036	11787521000119100	Foreign body in skin of right little finger	-	Yes
37170162	11837441000119100	Foreign body in skin of right lower leg	-	Yes
37310035	11787601000119100	Foreign body in skin of right ring finger	-	Yes
37309981	11824601000119100	Foreign body in skin of right shoulder	-	Yes
37161902	11837281000119100	Foreign body in skin of right thigh	-	Yes
37310023	11791361000119100	Foreign body in skin of right wrist	-	Yes
37165704	1255446005	Foreign body in skin of ring finger	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4246661	93458008	Foreign body in skin	-	Yes
4183107	298089000	Foreign body in skin of abdomen	-	Yes
4183113	298101003	Foreign body in skin of ankle	-	Yes
4185011	298075005	Foreign body in skin of axilla	-	Yes
4185015	298086007	Foreign body in skin of back	-	Yes
4177628	298088008	Foreign body in skin of breast	-	Yes
4183109	298093006	Foreign body in skin of buttock	-	Yes
37161240	11776131000119100	Foreign body in skin of left forearm	-	Yes
37161326	11787081000119100	Foreign body in skin of left index finger	-	Yes
37161327	11787161000119100	Foreign body in skin of left middle finger	-	Yes
37161235	11774611000119100	Foreign body in skin of left thumb	-	Yes
4177624	298065007	Foreign body in skin of lip	-	Yes
4183111	298098002	Foreign body in skin of lower leg	-	Yes
4181883	298092001	Foreign body in skin of lower limb	-	Yes
4181875	298066008	Foreign body in skin of mouth	-	Yes
4185009	298071001	Foreign body in skin of neck	-	Yes
603209	11843231000119100	Foreign body in skin of right ear	-	Yes
37161237	11775811000119100	Foreign body in skin of right elbow region	-	Yes
37161239	11776051000119100	Foreign body in skin of right forearm	-	Yes
37161332	11787481000119100	Foreign body in skin of right index finger	-	Yes
37110331	724551009	Neonatal burn due to exposure to man-made ultraviolet light during phototherapy	-	Yes
75994	77490007	Full thickness burn of shoulder	-	Yes
79186	40521006	Contusion to heart with open wound into thorax	-	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
254790	42019003	Contusion of lung with open wound into thorax	-	Yes
4054648	211946004	Corrosion of wrist and hand	-	Yes
4057798	212009003	Corrosion of ankle and foot	-	Yes
4059994	212010008	Corrosion of first degree of ankle and foot	-	Yes
4054663	212011007	Corrosion of second degree of ankle and foot	-	Yes
4059995	212012000	Corrosion of third degree of ankle and foot	-	Yes
42536582	735513007	Complex burn of ankle	-	Yes
42539542	735512002	Complex burn of foot	-	Yes
42536581	735511009	Complex burn of hand	-	Yes
42539368	762487003	Complex burn of lower limb	-	Yes
42538707	762478007	Complex burn of shoulder	-	Yes
42539367	762479004	Complex burn of upper limb	-	Yes
42536580	735510005	Complex burn of wrist	-	Yes
36674682	770397004	Deep full thickness burn of finger	-	Yes
37116486	733213005	Laceration of thorax with foreign body	-	Yes

Probable high-risk and possible tetanus-prone wounds

Concept ID	Concept Code	Concept Name	Descendants	Exclude
73075	68142008	Contusion of upper limb	Yes	-
73925	6055000	Burn of upper limb	Yes	-
135335	53770004	Carbuncle of trunk	Yes	-
138844	20187005	Foreign body granuloma of muscle	Yes	-
140480	48277006	Impetigo	Yes	-
195977	36787001	Contusion of trunk	Yes	-
197163	52405000	Burn of trunk	Yes	-
197751	84677008	Burn of lower limb	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
199192	78794000	Abrasion and/or friction burn of trunk without infection	Yes	-
199978	91603007	Contusion of lower limb	Yes	-
432512	216897005	Foreign object left in body during procedure	Yes	-
433116	217697000	Dog bite	Yes	-
434785	77768006	Intracranial hemorrhage following injury with open intracranial wound	Yes	-
438590	28188001	Brain injury with open intracranial wound	Yes	-
438958	398530003	Wound botulism	Yes	-
439194	45659008	Subdural hemorrhage following injury with open intracranial wound AND loss of consciousness	Yes	-
442533	210205007	Kidney hematoma without rupture of capsule, with open wound into cavity	Yes	-
444249	82117004	Abrasion and/or friction burn with infection	Yes	-
607984	1156468009	Deep partial thickness burn	Yes	-
608207	1157025007	Infected foreign body	Yes	-
759965	10819301000119100	Open fracture of left tibia	Yes	-
1449955	1354433009	Open wound of posterior wall of thorax due to dog bite	Yes	-
3176778	21110001000004100	Chronic abdominal wound infection	Yes	-
3185417	8410001000004100	Cerebral hematoma with open intracranial wound	Yes	-
4001843	110221003	Third degree burn of hard palate	Yes	-
4001844	110225007	Third degree burn of soft palate	Yes	-
4001845	110229001	Third degree burn of oropharynx	Yes	-
4002669	110177009	Third degree burn of preauricular region of face	Yes	-
4002678	110209002	Third degree burn of maxillary attached gingiva	Yes	-
4002685	110236000	Full thickness burn of tongue	Yes	-
4003192	110025001	Open fracture of alveolar ridge of maxilla	Yes	-
4003360	110189006	Full thickness burn of cheek	Yes	-
4003504	110213009	Third degree burn of mandibular attached gingiva	Yes	-
4004977	110217005	Third degree burn of floor of mouth	Yes	-
4005631	110197004	Third degree burn of labial mucosa	Yes	-
4005632	110201004	Third degree burn of maxillary vestibule	Yes	-
4022680	226034001	Injecting drug user	Yes	-
4030849	238382001	Wound abscess	Yes	-
4046789	134222005	Penetrating wound	Yes	-
4051759	211463006	Foreign body in skin wound	Yes	-
4054747	212062005	Corrosion involving 20 to 29 percent of body surface	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4054753	212126007	Corrosion involving 90 percent or more of body surface	Yes	-
4055331	212051005	Corrosion involving less than 10 percent of body surface	Yes	-
4055449	212075005	Corrosion involving 40 to 49 percent of body surface	Yes	-
4057924	212057009	Corrosion involving 10 to 19 percent of body surface	Yes	-
4057927	212068009	Corrosion involving 30 to 39 percent of body surface	Yes	-
4057929	212083004	Corrosion involving 50 to 59 percent of body surface	Yes	-
4057933	212102005	Corrosion involving 70 to 79 percent of body surface	Yes	-
4057935	212113008	Corrosion involving 80 to 89 percent of body surface	Yes	-
4059703	211749001	Corrosion of head and neck	Yes	-
4060013	212092001	Corrosion involving 60 to 69 percent of body surface	Yes	-
4090679	186327003	Pasteurella septic infection (cat or dog bite)	Yes	-
4094477	287134001	Full thickness burn of eyelid	Yes	-
4094689	262541004	Superficial laceration	Yes	-
4094821	262598006	Intracranial foreign body	Yes	-
4095264	262577006	Degloving injury	Yes	-
4095859	262573005	Pellet wound	Yes	-
4096471	262557004	Deep wound	Yes	-
4096472	262560006	Penetrating wound	Yes	-
4096479	262595009	Traumatic amputation	Yes	-
4105269	283243002	Glass in upper limb	Yes	-
4106510	283153005	Metal foreign body in upper limb	Yes	-
4106531	283255008	Glass in trunk	Yes	-
4106532	283256009	Glass in back	Yes	-
4106835	283166005	Metal foreign body in trunk	Yes	-
4106836	283167001	Metal foreign body in back	Yes	-
4106840	283189002	Fishing hook foreign body	Yes	-
4108763	283139005	Superficial metal foreign body	Yes	-
4138484	426284001	Chemical burn	Yes	-
4141909	3404009	Bite wound	Yes	-
4151529	283375001	Laceration of trunk	Yes	-
4151842	283682007	Bite - wound	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4152932	283366003	Laceration of upper limb	Yes	-
4152960	283357002	Laceration of lower limb	Yes	-
4153697	283545005	Gunshot wound	Yes	-
4167099	274165007	Laceration of skin	Yes	-
4177626	298073003	Foreign body in skin of upper limb	Yes	-
4178756	52329006	Fracture, open	Yes	-
4179823	428088000	Laceration of head	Yes	-
4181882	298085006	Foreign body in skin of trunk	Yes	-
4183970	298010008	Wound dirty	Yes	-
4185007	298062005	Foreign body in skin of head	Yes	-
4185009	298071001	Foreign body in skin of neck	Yes	-
4199541	302016005	Carbuncle of lower limb	Yes	-
4201700	302013002	Carbuncle of upper limb	Yes	-
4211967	57495003	Deep wound	Yes	-
4213471	80247002	Third degree burn injury	Yes	-
4215380	416645004	Open fracture dislocation of joint of shoulder girdle	Yes	-
4220002	416675009	Furuncle	Yes	-
4235831	439889008	Wound caused by nail device	Yes	-
4246696	397182009	Open crush injury	Yes	-
4264281	397181002	Open fracture	Yes	-
4264851	397177002	Open injury with foreign body in wound	Yes	-
4266654	400012003	Abrasion and/or friction burn of skin	Yes	-
4299128	403192003	Full thickness burn	Yes	-
4302083	418591009	Corneal wound burn	Yes	-
4322407	425322008	Stab wound	Yes	-
36675018	771247007	Deep full thickness burn injury	Yes	-
36716586	722638005	Laceration of neck with foreign body	Yes	-
37117206	724611004	Foreign body granuloma of soft tissue	Yes	-
37168892	1287048007	Glass in head and/or neck	Yes	-
37168893	1287049004	Metal foreign body in head and/or neck	Yes	-
37206800	787018009	Foreign body of eye region	Yes	-
37310164	10948891000119100	Open wound of left upper arm due to dog bite	Yes	-
37311190	823994000	Glass foreign body in skin	Yes	-
40482783	443678007	Splinter foreign body	Yes	-
40488823	446653004	Foreign body in lower limb	Yes	-
42538212	741070003	Full thickness burn of head and neck	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
42538700	762466008	Superficial partial thickness burn of head	Yes	-
42538701	762468009	Complex burn of head	Yes	-
42538703	762472008	Complex burn of face	Yes	-
42539366	762469001	Complex burn of neck	Yes	-
42689793	1068391000000100	Injury whilst gardening	Yes	-
42689805	1068541000000100	Injury whilst working on farm	Yes	-
44788773	198751000000109	Open fracture of femur, upper epiphysis	Yes	-
44790829	240541000000107	Impaled object in back	Yes	-
44790831	240561000000108	Impaled object in upper limb	Yes	-
44806474	801711000000105	O/E - wound necrotic	Yes	-
44806645	813381000000102	Foreign body associated with wound	Yes	-
44806654	813491000000109	Foreign body associated with burn	Yes	-
46270117	142661000119102	Retained foreign body	Yes	-
24198	262791003	Contusion of esophagus	-	-
26286	60713008	Burn of neck	-	-
27438	45982008	Burn of esophagus	-	-
80294	68017002	Foreign body in genitourinary tract	-	-
132771	90808005	Burn any degree involving 90 percent OR more of body surface	-	-
133384	6341002	Burn any degree involving less than 10 percent of body surface	-	-
133645	5414003	Burn any degree involving 80-89 percent of body surface	-	-
134232	7765006	Epidermal burn of scalp	-	-
134521	22045003	Partial thickness burn of scalp	-	-
135695	88756008	Partial thickness burn of chin	-	-
135699	14276000	Burn any degree involving 10-19 percent of body surface	-	-
135700	40904009	Burn any degree involving 30-39 percent of body surface	-	-
136566	78202006	Epidermal burn of lip	-	-
136871	22428001	Burn any degree involving 20-29 percent of body surface	-	-
137436	58340008	Epidermal burn of nose	-	-
137729	72998004	Burn of back	-	-
138293	13212004	Partial thickness burn of multiple sites	-	-
138296	10137002	Epidermal burn of chin	-	-
138312	38978009	Burn of scalp	-	-
138315	86660005	Burn any degree involving 40-49 percent of body surface	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
138622	73518002	Burn of lip	-	-
138918	284205006	Partial thickness burn of lip	-	-
139203	51041008	Burn any degree involving 60-69 percent of body surface	-	-
140266	11437003	Contusion of back	-	-
140581	81116005	Burn of chin	-	-
140885	11406003	Partial thickness burn of nose	-	-
141173	66176005	Abrasion and/or friction burn of face without infection	-	-
141753	9269007	Epidermal burn of ear	-	-
142004	42066004	Partial thickness burn of ear	-	-
195976	13140001	Burn of gastrointestinal tract	-	-
196284	212032004	Burn of mouth and pharynx	-	-
198030	17543009	Burn of internal organ	-	-
200171	91374005	Carbuncle of skin and/or subcutaneous tissue	-	-
201728	33334006	Foreign body in digestive tract	-	-
256301	22233004	Burn of nose	-	-
256571	74699008	Foreign body in nose	-	-
259995	211616004	Foreign body in orifice	-	-
261738	284210005	Multiple burns of head and neck	-	-
374226	274205003	Burn of eye region	-	-
374753	22383006	Closed fracture of vault of skull with cerebral laceration AND/OR contusion	-	-
374801	75441006	Foreign body in ear	-	-
378048	39065001	Burn of ear	-	-
379209	284541005	Burn of conjunctiva	-	-
381174	211483007	Contusion of globe of eye	-	-
381444	367423000	Contusion of eye	-	-
433071	111721009	Contusion of multiple sites	-	-
433911	416179002	Contusion of eye AND ocular adnexa	-	-
433917	10132008	Burns of multiple sites	-	-
434119	69741000	Hidradenitis	-	-
434231	269232009	Burn confined to eye and adnexa	-	-
434529	77830003	Epidermal burn of multiple sites	-	-
438047	42697001	Contusion of orbital tissues	-	-
438223	200834004	Sunburn of second degree	-	-
438290	6821004	Partial thickness burn of neck	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
438931	217835008	Foreign body accidentally entering eye and adnexa	-	-
441737	125667009	Contusion	-	-
442013	125666000	Burn	-	-
442018	74402000	Foreign body accidentally left during a procedure	-	-
442612	64647005	Burn any degree involving 50-59 percent of body surface	-	-
443267	274204004	Corneal burn	-	-
443419	312608009	Laceration - injury	-	-
443589	427828004	Burn of nasal septum	-	-
444105	46000006	Burn any degree involving 70-79 percent of body surface	-	-
444287	85782003	Carbuncle of neck	-	-
444418	91356001	Carbuncle of face	-	-
606033	1142037009	Neonatal pyoderma caused by Streptococcus pyogenes	-	-
618696	874804000	Contusion of head and/or neck	-	-
618706	874827008	Superficial foreign body in vulva	-	-
618707	874828003	Foreign body in mucosa of vagina	-	-
618712	874833004	Superficial foreign body in perineum	-	-
618716	874837003	Superficial foreign body in lip	-	-
618717	874838008	Foreign body in gingival mucous membrane	-	-
618745	874919003	Superficial foreign body in anus	-	-
760128	10847621000119100	Foreign body in right ear	-	-
760129	10847661000119100	Foreign body in left ear	-	-
760766	11786081000119100	Superficial foreign body of skin of right hand	-	-
760767	11786161000119100	Superficial foreign body of skin of left hand	-	-
1075002	11842971000119100	Right carotid artery laceration	-	-
1075003	11843011000119100	Left carotid artery laceration	-	-
1075218	1303162002	Laceration of carotid artery	-	-
1076199	1336114003	PAPASH syndrome	-	-
1076200	1336115002	PASS syndrome	-	-
1076201	1336116001	PsAPASH syndrome	-	-
3171752	29330001000004100	Left carotid artery laceration	-	-
3174149	8620001000004100	Brachial artery laceration	-	-
3178241	12910001000004100	Sternal wound infection	-	-
3179733	21050001000004100	Right temporal frontal scalp contusions	-	-
3180211	8630001000004100	Axillary artery laceration	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
3183470	276521000004108	Cerebral contusion with concurrent subarachnoid hemorrhage	-	-
3184859	26840001000004100	Left temporal lobe contusion	-	-
3185319	8580001000004100	Laceration of spinal dura	-	-
3186564	11730001000004100	Steel plate in left arm	-	-
3186570	17660001000004100	Frontal lobe contusion	-	-
3188959	30750001000004100	Femoral artery foreign body	-	-
3189195	6960001000004100	Infected laceration of lip	-	-
3189365	15390001000004100	Patient has metal bone fixation hardware	-	-
3190480	7260001000004100	Open wound of neck sustained during fight	-	-
3654383	830222008	Mucosal tear of esophagus	-	-
3655406	863893009	Application site burn	-	-
3655953	870540001	Contusion of hindbrain	-	-
4001835	110174002	Burn of skin of preauricular region	-	-
4001836	110180005	Partial thickness burn of circumoral region	-	-
4001838	110182002	Burn of forehead	-	-
4001839	110187008	Epidermal burn of cheek	-	-
4001840	110188003	Partial thickness burn of cheek	-	-
4001841	110204007	Second degree burn of mandibular vestibule	-	-
4001842	110220002	Second degree burn of hard palate	-	-
4001846	110231005	Burn erythema of tonsillar area	-	-
4001848	110235001	Second degree burn of tongue	-	-
4001849	110238004	Contusion of subcondylar region of mandible	-	-
4001850	110240009	Contusion of ramus of mandible	-	-
4001851	110244000	Contusion of forehead	-	-
4001852	110251009	Contusion of maxillary vestibule	-	-
4001853	110256004	Contusion of tongue	-	-
4001854	110257008	Contusion of buccal mucosa	-	-
4001855	110259006	Contusion of hard palate	-	-
4002670	110178004	Burn of circumoral region	-	-
4002671	110179007	Epidermal burn of perioral region	-	-
4002674	110192005	Second degree burn of buccal mucosa	-	-
4002675	110198009	Burn of maxillary vestibule	-	-
4002676	110200003	Second degree burn of maxillary vestibule	-	-
4002677	110208005	Second degree burn of maxillary attached gingiva	-	-
4002679	110210007	Burn of mandibular attached gingiva	-	-
4002680	110215002	Burn erythema of floor of mouth	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4002681	110218000	Burn of hard palate	-	-
4002682	110219008	Burn erythema of hard palate	-	-
4002684	110234002	Burn erythema of tongue	-	-
4002686	110239007	Contusion of coronoid process of mandible	-	-
4002688	110241008	Contusion of symphysis of body of mandible	-	-
4002689	110242001	Contusion of alveolar border of body of mandible	-	-
4002831	110247007	Contusion of malar region of face	-	-
4002832	110252002	Contusion of mandibular vestibule	-	-
4002833	110253007	Contusion of maxillary attached gingiva	-	-
4002834	110255000	Contusion of floor of mouth	-	-
4002835	110261002	Contusion of oropharynx	-	-
4003353	110170006	Burn of periorbital region	-	-
4003355	110171005	Epidermal burn of periorbital region	-	-
4003356	110172003	Partial thickness burn of periorbital region	-	-
4003357	110183007	Epidermal burn of forehead	-	-
4003358	110184001	Partial thickness burn of forehead	-	-
4003359	110186004	Burn of cheek	-	-
4003361	110190002	Burn of buccal mucosa	-	-
4003363	110191003	Burn erythema of buccal mucosa	-	-
4003497	110194006	Burn of labial mucosa	-	-
4003498	110195007	Burn erythema of labial mucosa	-	-
4003499	110199001	Burn erythema of maxillary vestibule	-	-
4003501	110206009	Burn of maxillary attached gingiva	-	-
4003502	110207000	Burn erythema of maxillary attached gingiva	-	-
4003503	110212004	Second degree burn of mandibular attached gingiva	-	-
4003505	110214003	Burn of floor of mouth	-	-
4003506	110216001	Second degree burn of floor of mouth	-	-
4003509	109672001	Replanted avulsed tooth	-	-
4004979	110222005	Burn of soft palate	-	-
4004980	110227004	Burn erythema of oropharynx	-	-
4004981	110228009	Second degree burn of oropharynx	-	-
4004982	110230006	Burn of tonsillar area	-	-
4004983	110237009	Contusion of condylar process of mandible	-	-
4004984	110245004	Contusion of auricle of ear	-	-
4004985	110246003	Contusion of preauricular region of face	-	-
4004986	110248002	Contusion of circumoral region of face	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4004987	110249005	Contusion of chin	-	-
4004988	110254001	Contusion of mandibular attached gingiva	-	-
4004989	110258003	Contusion of soft palate	-	-
4004990	110262009	Contusion of periorbital region	-	-
4005499	110144005	Simple laceration of neck	-	-
4005500	110145006	Contaminated simple laceration of neck	-	-
4005501	110146007	Complex laceration of neck	-	-
4005502	110147003	Contaminated complex laceration of neck	-	-
4005627	110175001	Epidermal burn of preauricular region of face	-	-
4005628	110176000	Partial thickness burn of preauricular region of face	-	-
4005630	110196008	Second degree burn of labial mucosa	-	-
4005633	110202006	Burn of mandibular vestibule	-	-
4005634	110203001	Burn erythema of mandibular vestibule	-	-
4005637	110211006	Burn erythema of mandibular attached gingiva	-	-
4005638	110223000	Burn erythema of soft palate	-	-
4005639	110224006	Second degree burn of soft palate	-	-
4005640	110226008	Burn of oropharynx	-	-
4005641	110232003	Second degree burn of tonsillar area	-	-
4005642	110243006	Contusion of maxilla	-	-
4005643	110250005	Contusion of mouth	-	-
4005644	110260001	Contusion of tonsil	-	-
4028236	128273004	Carbuncle of head	-	-
4030851	238393004	Lupoid sycosis of beard	-	-
4031190	14448006	Swallowed foreign body	-	-
4032807	14800001	Dermatitis vegetans	-	-
4034021	23713006	Contusion of cerebral cortex	-	-
4042997	11857005	Carbuncle of nose	-	-
4043719	230619007	Contusion of peripheral nerve	-	-
4045579	13085003	Burn of larynx	-	-
4047853	206204009	Scalp bruising due to birth trauma	-	-
4047857	206223002	Spinal cord laceration due to birth trauma	-	-
4051764	211476000	Contusion, throat	-	-
4053404	242012005	Thermal burns from lightning	-	-
4053838	125670008	Foreign body	-	-
4054068	125668004	Contusion of face	-	-
4054669	212038000	Corrosion of larynx and/or trachea	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4054671	212042002	Corrosion of esophagus	-	-
4055128	242853001	Self injury by cigarette burn	-	-
4055231	242995009	Accidental laceration during a procedure	-	-
4055326	212035002	Corrosion of mouth and pharynx	-	-
4058346	211311003	Foreign body in hand	-	-
4060006	212049006	Burns classified according to percentage of body surface involved	-	-
4061712	200600003	Carbuncle of head (excluding face)	-	-
4061839	200833005	Sunburn of first degree	-	-
4063925	200718008	Pyoderma ulcerosum tropicalum	-	-
4065976	200582002	Carbuncle of face (excluding eye)	-	-
4069777	21707009	Lupoid sycosis	-	-
4070328	17732003	Ecthyma gangrenosum	-	-
4079443	277349008	Diathermy plate burn	-	-
4080183	238388002	Pseudomonas aeruginosa paronychia	-	-
4080735	278026003	Arborescent patterning of skin	-	-
4082020	277209002	Bruising over mastoid	-	-
4082188	24087000	Burn of gum	-	-
4083920	247517004	Bacterial paronychia	-	-
4084588	282452001	Laceration of pharynx	-	-
4084589	282453006	Corrosion of pharynx	-	-
4084590	282459005	Laceration of trachea	-	-
4086223	283136003	Superficial contusion of skin of neck	-	-
4087429	18638007	Hidradenitis suppurativa of anus	-	-
4094336	287139006	Epidermal burn of head	-	-
4094337	287140008	Partial thickness burn of head	-	-
4094461	287132002	Epidermal burn of eyelid	-	-
4094462	287133007	Burn to eyelid - blister	-	-
4094463	287137008	Burn to cornea - blister	-	-
4094464	287138003	Burn to cornea - full thickness	-	-
4094686	262532009	Pattern bruising	-	-
4094824	262610009	Umbilical foreign body	-	-
4094829	262625009	Foreign body in female perineum	-	-
4094834	262635003	Contusion of oral cavity	-	-
4094835	262636002	Contusion of palate	-	-
4094836	262637006	Contusion of gingivae	-	-
4094837	262639009	Contusion of oral alveolar mucosa	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4094847	262689001	Contusion of cerebrum	-	-
4094848	262692002	Burst lobe of brain	-	-
4094973	262777009	Contusion of parathyroid gland	-	-
4095266	262581006	Head burn	-	-
4095272	262613006	Foreign body in urinary conduit	-	-
4095419	262676007	Contusion of larynx	-	-
4095539	262734008	Contusion of cervical nerve root	-	-
4095853	262534005	Confluent bruising	-	-
4095874	262638001	Contusion of intraoral surface of lip	-	-
4095995	262696004	Contusion of spinal cord	-	-
4096004	262733002	Contusion of spinal nerve root	-	-
4096014	262767007	Contusion of salivary gland	-	-
4096016	262774002	Contusion of thyroid gland	-	-
4096021	262793000	Laceration of esophagus	-	-
4096318	262533004	Impact bruising	-	-
4096477	262582004	Burn of face	-	-
4096489	262621000	Foreign body in male perineum	-	-
4096613	262681003	Contusion of trachea	-	-
4096618	262697008	Contusion of cervical cord	-	-
4096622	262705002	Laceration of spinal cord	-	-
4096623	262706001	Laceration of cervical cord	-	-
4098950	253005	Sycosis	-	-
4104920	282451008	Burn of nasal cavity	-	-
4104921	282454000	Contusion of pharynx	-	-
4106507	283135004	Superficial bruising of head and neck	-	-
4107339	282450009	Contusion of nasal septum	-	-
4107355	284186002	Burn of nervous system structure	-	-
4107356	284190000	Burn of cardiovascular structure	-	-
4107357	284198007	Superficial corrosion of forehead	-	-
4107358	284201002	Superficial corrosion of nose	-	-
4107359	284202009	Superficial corrosion of cheek	-	-
4107360	284208008	Superficial corrosion of neck	-	-
4107672	284537006	Eyelid burn	-	-
4108318	284189009	Burn of larynx and/or trachea	-	-
4108319	284191001	Burn of lymphoreticular structure	-	-
4108320	284194009	Burn of endocrine structure	-	-
4108321	284195005	Burn of musculoskeletal structure	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4108466	284188001	Burn of respiratory tract	-	-
4108467	284196006	Burn of skin	-	-
4108470	284204005	Superficial corrosion of lip	-	-
4108528	194342001	Old foreign body in middle ear	-	-
4111361	284197002	Superficial corrosion of scalp	-	-
4111362	284200001	Superficial corrosion of ear	-	-
4111363	284206007	Superficial corrosion of chin	-	-
4111364	284207003	Burn of throat	-	-
4112116	286547006	Burn of oral cavity	-	-
4112119	286552001	Foreign body of neurological structure	-	-
4115184	287153006	Over 70 percent body burnt	-	-
4115557	301453009	Tendon laceration	-	-
4116121	286561001	Foreign body of cardiovascular structure	-	-
4116122	286563003	Foreign body of musculoskeletal structure	-	-
4119172	262903001	Contusion of urinary conduit	-	-
4119619	234009005	Arterial laceration	-	-
4120254	286564009	Foreign body of breast	-	-
4120256	286566006	Foreign body of endocrine structure	-	-
4120332	302965003	Laceration of thyroid gland	-	-
4120388	286603008	Foreign body of body cavity and wall	-	-
4120736	288511001	Burn involving 8 percent of body surface	-	-
4120737	288513003	Burn involving 6 percent of body surface	-	-
4120738	288518007	Burn involving 2 percent of body surface	-	-
4121340	302907009	Foreign body in middle ear	-	-
4121634	234002001	Arterial contusion	-	-
4121786	234082004	Contusion of vein	-	-
4123196	288509005	Burn of skin of body region	-	-
4123197	288515005	Burn involving 4 percent of body surface	-	-
4123539	288510000	Burn involving 9 percent of body surface	-	-
4123540	288512008	Burn involving 7 percent of body surface	-	-
4123541	288514009	Burn involving 5 percent of body surface	-	-
4123543	288519004	Burn involving 1 percent of body surface	-	-
4124868	234084003	Venous laceration	-	-
4127363	288516006	Burn involving 3 percent of body surface	-	-
4129410	125687005	Contusion of ocular adnexa	-	-
4133020	127304009	Cerebellar contusion	-	-
4133021	127305005	Brain stem contusion	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4134049	262904007	Laceration of urinary conduit	-	-
4134164	262968008	Intramuscular contusion	-	-
4134731	398314007	Laceration of hypopharynx	-	-
4136547	262957008	Contusion of cranial nerve	-	-
4137789	32331008	Foreign body in auricle	-	-
4139281	32825000	Perforation due to foreign body accidentally left in operative wound AND/OR body cavity during a procedure	-	-
4139420	32874004	Foreign body in auditory canal	-	-
4143235	425656005	Burn caused by radiation	-	-
4146496	34663006	Contusion of brain	-	-
4147781	268115005	Foreign body left in elbow	-	-
4148390	35933005	Laceration	-	-
4148448	30742008	Abrasion and/or friction burn of nose without infection	-	-
4148580	269729005	Self injury with external chemical burn	-	-
4148629	30715007	Burn of tongue	-	-
4148867	35447004	Burn of pharynx	-	-
4151405	269795008	Foreign body accident - orifice	-	-
4151452	314534006	Thermal burn	-	-
4151524	283364000	Laceration of neck	-	-
4151731	268117002	Foreign body left in hand	-	-
4152130	2825006	Abrasion and/or friction burn of gum without infection	-	-
4152343	271762000	Burrows in skin	-	-
4152659	269700008	Effect of ignition of clothing from burning bedding	-	-
4152963	283365004	Laceration of throat	-	-
4153752	269241004	Superficial partial thickness burn of neck	-	-
4153877	269406001	Post-traumatic wound infection	-	-
4154157	282729004	Foreign body in heart	-	-
4154741	284008001	Foreign body in bone	-	-
4161699	398098001	Laceration of larynx	-	-
4162370	398217003	Laceration of airway	-	-
4170462	275453008	Foreign body - finger	-	-
4170472	273965001	Foreign body dermatosis	-	-
4170632	274171001	Laceration of back	-	-
4170964	276468004	Cigarette burn	-	-
4173033	276466000	Doughnut burn	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4173257	4821001	Contusion of cheek	-	-
4173326	276624006	Neonatal bruising of scalp	-	-
4173807	275454002	Foreign body in thumb	-	-
4174369	50228009	Contusion of ear	-	-
4176093	4989003	Electrical burn of skin	-	-
4182431	429719000	Foreign body in forearm	-	-
4182968	297964006	Love bite mark	-	-
4189529	615005	Obstruction due to foreign body accidentally left in operative wound AND/OR body cavity during a procedure	-	-
4194733	312646002	Burn of skin of eye region	-	-
4198022	431875001	Open wound of face with foreign body	-	-
4199789	314531003	Burn of anterior eyeball segment	-	-
4201095	301768009	Contusion of supraorbital area	-	-
4204038	308891007	Intra-abdominal foreign body left inside at operation	-	-
4204061	52945003	Contusion of mandibular joint area	-	-
4205673	308890008	Intra-abdominal foreign body	-	-
4219067	82454002	Carbuncle of nasal septum	-	-
4219836	417654008	Contusion of ocular adnexa and periocular tissues	-	-
4228294	405571006	Electrical burn	-	-
4230505	89274006	Carbuncle of temple region	-	-
4234232	90204000	Carbuncle of scalp	-	-
4241223	59393003	Hidradenitis suppurativa	-	-
4246661	93458008	Foreign body in skin	-	-
4246724	60897004	Contusion of nose	-	-
4246852	61035004	Burn of trachea	-	-
4247591	93459000	Foreign body in subcutaneous tissue	-	-
4257762	441373001	Abrasion and/or friction burn of head and/or neck without infection	-	-
4261688	35542008	Chancriform pyoderma	-	-
4270206	63767001	Carbuncle of ear	-	-
4270221	63811003	Abrasion and/or friction burn of lip without infection	-	-
4270719	402163008	Dermatosis due to hair as foreign body	-	-
4275292	64458007	Contusion of lip	-	-
4291611	402937004	Streptococcal infection of skin	-	-
4293479	37645002	Burn of head AND/OR neck	-	-
4294187	385515008	Flash burn of skin	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4294188	385516009	Contact burn of skin	-	-
4294192	385531000	Fat burn of skin	-	-
4294447	402939001	Bacterial pyoderma	-	-
4294687	75767000	Abrasion and/or friction burn of cheek without infection	-	-
4295790	385512006	Hot tar burn of skin	-	-
4295791	385513001	Firework burn of skin	-	-
4295792	385514007	Radiant heat burn of skin	-	-
4295794	385529009	Hot drink burn of skin	-	-
4296203	403186009	Reaction to thorn and/or spine in skin	-	-
4296204	403190006	Epidermal burn of skin	-	-
4296205	403191005	Partial thickness burn	-	-
4297098	386082004	Foreign body in head	-	-
4297360	404176003	Follicular occlusion tetrad - hidradenitis, acne conglobata, dissecting cellulitis, pilonidal sinus	-	-
4297984	76844004	Local infection of wound	-	-
4298741	402827005	Anogenital hidradenitis suppurativa	-	-
4298858	402931003	Neonatal bacterial paronychia	-	-
4299126	403187000	Reaction to metallic ring, stud and/or infibulata in skin	-	-
4299275	404174000	Neonatal ecthyma gangrenosum	-	-
4299456	385527006	Hot water burn of skin	-	-
4300121	402825002	Retro-auricular cysts (hidradenitis)	-	-
4300122	402826001	Axillary hidradenitis suppurativa	-	-
4300123	402828000	Hidradenitis suppurativa of vulva	-	-
4300221	402930002	Acute bacterial paronychia	-	-
4300257	385526002	Steam burn of skin	-	-
4300258	385528001	Hot oil burn of skin	-	-
4300259	385530004	Food burn of skin	-	-
4300792	404175004	Follicular occlusion triad - hidradenitis, acne conglobata, dissecting cellulitis of scalp	-	-
4301281	403706003	Electrocautery burn	-	-
4305587	38966005	Epidermal burn of neck	-	-
4305948	156410002	Sycosis barbae	-	-
4308159	423838005	Scleral wound burn	-	-
4308368	390835003	Post-traumatic bruising	-	-
4309466	213277004	Foreign body accidentally left within patient postoperatively	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4309467	213278009	Adhesions resulting from foreign body left postoperatively	-	-
4309469	213282006	Foreign body left in wound	-	-
4310238	8513005	Contusion of neck	-	-
4310308	423123007	Burn caused by fire	-	-
4310567	423428008	Foreign body of face	-	-
4311318	423858006	Scald of skin	-	-
4312643	424784002	Burn by hot object	-	-
4312766	424959007	Foreign body of neck	-	-
4314593	424316008	Burn by hot liquid	-	-
4317277	95401009	Injection site bruising	-	-
4328422	430047005	Laceration of nerve	-	-
4331284	22562004	Contusion of scalp	-	-
4333982	231814009	Contusion of eyelid	-	-
4334726	231819004	Thermal burn of eyelid	-	-
4334731	231844007	Lacrimal punctum burn	-	-
4335897	231884003	Burn of sclera	-	-
4337359	87177002	Burn of mouth	-	-
4338764	231867009	Thermal injury to conjunctiva	-	-
4341779	236010002	Peritoneal foreign body	-	-
35607586	11848621000119100	Contusion of right eyelid	-	-
35611194	11848661000119100	Contusion of left eyelid	-	-
36674185	770555009	Burn of eye proper	-	-
36674206	770779009	Epidermal burn of skin of upper and lower lip	-	-
36674267	771217005	Partial thickness burn of head and/or neck	-	-
36674268	771219008	Epidermal burn of head and/or neck	-	-
36683345	781149006	Accidental laceration of a blood vessel during a procedure	-	-
36686160	10900751000119100	Contusion of orbital tissue of right eye	-	-
36686161	10900791000119100	Contusion of orbital tissue of left eye	-	-
36686191	10943311000119100	Contusion of right cerebrum	-	-
36686192	10943471000119100	Contusion of left cerebrum	-	-
36686412	11799401000119100	Laceration of left renal artery	-	-
36686431	11808411000119100	Laceration of sigmoid colon	-	-
36686434	11813621000119100	Superficial foreign body in low back	-	-
36686474	11844031000119100	Contusion of right ear	-	-
36686475	11844071000119100	Contusion of left ear	-	-
36686478	11844431000119100	Superficial foreign body of throat	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
36686486	11847941000119100	Superficial foreign body in mouth	-	-
36686493	11850401000119100	Superficial foreign body in right breast	-	-
36686494	11850441000119100	Superficial foreign body in left breast	-	-
36686505	11852781000119100	Superficial foreign body in head	-	-
36712758	10900511000119100	Contusion of globe of right eye	-	-
36712759	10900551000119100	Contusion of globe of left eye	-	-
36715557	721267000	Pyogenic infection of skin and subcutaneous tissues caused by bacterium	-	-
36715559	721269002	Pyogenic abscess of skin caused by bacterium	-	-
36715615	721340009	Laceration of fascia of head	-	-
36715675	721411005	Minor laceration of carotid artery	-	-
36715676	721412003	Minor laceration of vertebral artery	-	-
36715677	721413008	Minor laceration of internal jugular vein	-	-
36715678	721414002	Major laceration of internal jugular vein	-	-
36716567	722615007	Focal hemorrhagic contusion of cerebrum	-	-
36716570	722618009	Focal non-hemorrhagic contusion of cerebellum	-	-
36716573	722622004	Focal non-hemorrhagic contusion of brainstem	-	-
36716585	722637000	Laceration of neck without foreign body	-	-
36716590	722642008	Major laceration of carotid artery	-	-
36716591	722645005	Major laceration of external jugular vein	-	-
36716629	722705009	Minor laceration of external jugular vein	-	-
36716737	722907006	Contusion of cerebellum due to birth trauma	-	-
36716738	722908001	Contusion of brain due to birth trauma	-	-
36717223	722614006	Focal non-hemorrhagic contusion of cerebrum	-	-
36717575	722643003	Major laceration of vertebral artery	-	-
37017994	714382008	Accidental laceration during a procedure on an organ	-	-
37110525	724790005	Laceration of fascia of neck	-	-
37110526	724791009	Laceration of tendon of neck	-	-
37110627	724919004	Laceration of fascia of long head of biceps brachii	-	-
37110635	724928003	Laceration of fascia of biceps brachii	-	-
37110642	724936007	Laceration of fascia of triceps brachii	-	-
37110701	725017005	Laceration of muscle of neck	-	-
37116423	733128002	Obstruction of superior vena cava with foreign body	-	-
37151508	1237439009	Laceration of muscle	-	-
37151509	1237440006	Laceration of ligament	-	-
37165499	1254915007	Hidradenitis suppurativa of multiple sites	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37165500	1254916008	Hidradenitis suppurativa pyoderma gangrenosum complex	-	-
37166035	1258991007	Burn caused by forest fire	-	-
37172081	44201000087105	Contusion of cervical vertebral column region	-	-
37309797	12202581000119100	Partial thickness burn of left ear	-	-
37309870	12065631000119100	Burn of right ear	-	-
37309871	12065591000119100	Burn of left ear	-	-
37309875	12081971000119100	Burn of right eye region	-	-
37309876	12081931000119100	Burn of left eye region	-	-
37309877	12081851000119100	Burn of right eyelid	-	-
37309878	12081811000119100	Burn of left eyelid	-	-
37309879	12081691000119100	Burn of conjunctival sac of right eye	-	-
37309880	12081651000119100	Burn of conjunctival sac of left eye	-	-
37309881	12081531000119100	Burn of cornea of right eye	-	-
37309882	12081491000119100	Burn of cornea of left eye	-	-
37309912	11997031000119100	Partial thickness burn of right ear	-	-
37311963	788935009	Folliculitis cruris pustulosa atrophicans	-	-
37311965	788933002	Focal contusion of temporal lobe	-	-
37311966	788932007	Focal contusion of parietal lobe	-	-
37311967	788931000	Focal contusion of occipital lobe	-	-
37311968	788930004	Focal brain contusion	-	-
40479564	441519008	Contusion of infraorbital nerve	-	-
40484110	443920001	Simple laceration	-	-
40485019	444109008	Infection of wound hematoma	-	-
40488336	446557009	Scald of face	-	-
40489849	446856005	Burn of conjunctival sac	-	-
40490306	446905000	Partial thickness burn of face	-	-
40491360	447157009	Epidermal burn of face	-	-
40492324	447333000	Burn of ocular adnexa	-	-
40492372	447377007	Foreign body in jaw bone	-	-
40492403	447404002	Superficial foreign body	-	-
42536644	735583001	Obstruction of inferior vena cava with foreign body	-	-
42536696	735645009	Contusion of head	-	-
42537309	736650005	Burn of mucous membrane of mouth	-	-
42538554	762283002	Ecthyma caused by Staphylococcus aureus	-	-
42538852	762693003	Ecthyma caused by Streptococcus pyogenes	-	-
42538853	762694009	Ecthyma	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
43021523	473243005	Burn of eye region with burn of face	-	-
43021524	473244004	Burn of eye region with epidermal burn of face	-	-
43021525	473245003	Burn of eye region with partial thickness burn of face	-	-
43021528	473248001	Burn of eye region with epidermal burn of head and/or neck	-	-
43021529	473249009	Burn of eye region with partial thickness burn of head and/or neck	-	-
43021532	473252001	Burn of multiple sites of face without involvement of eye proper	-	-
43021533	473253006	Epidermal burn of multiple sites of face without involvement of eye proper	-	-
43021534	473254000	Partial thickness burn of multiple sites of face without involvement of eye proper	-	-
43021536	473256003	Burn of multiple sites of head without involvement of eye proper	-	-
43021537	473257007	Epidermal burn of multiple sites of head without involvement of eye proper	-	-
43021538	473258002	Partial thickness burn of multiple sites of head without involvement of eye proper	-	-
43021540	473260000	Burn of multiple sites of neck	-	-
43021541	473262008	Partial thickness burn of multiple sites of neck	-	-
43022029	473261001	Epidermal burn of multiple sites of neck	-	-
44782823	698820005	Post procedure puncture site infection	-	-
44783322	699394008	Flash burn of eye	-	-
44784606	698780001	Burn of cornea and conjunctival sac	-	-
4030985	238427006	Staphylococcal scarlatina	Yes	Yes
37110331	724551009	Neonatal burn due to exposure to man-made ultraviolet light during phototherapy	Yes	Yes
37116482	733209003	Burn of skin due to exposure to man-made ultraviolet light	Yes	Yes
37116483	733210008	Burn of skin due to and following ultraviolet light therapy	Yes	Yes
4094808	262555007	Human bite - wound	Yes	Yes
433949	242605002	Human bite	Yes	Yes
42574046	320411000009101	Puncture wound of navicular bursa	Yes	Yes
43530822	609343002	Surgical incision wound	Yes	Yes
37310095	10971091000119100	Open wound of left upper arm due to human bite	Yes	Yes
37310113	10959121000119100	Open wound of right upper arm due to human bite	Yes	Yes
1244205	10898811000119100	Open wound of lip due to human bite	Yes	Yes
4167859	418998008	Chemical keratitis	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
954118	361231000009109	Abscess from cat bite	Yes	Yes
42597044	318401000009105	Foreign body of third eyelid	Yes	Yes
44782821	698818007	Cataract fragments in the eye post cataract surgery	Yes	Yes
42572636	335881000009103	Collar gall	Yes	Yes
42597293	321281000009101	Laceration of extensor carpi radialis tendon	Yes	Yes
42596423	311831000009109	Laceration of footpad	Yes	Yes
42599680	358241000009100	Laceration of palatal mucosa	Yes	Yes
42574053	320981000009104	Laceration of peroneus tertius tendon	Yes	Yes
42599363	351041000009104	Laceration of third eyelid	Yes	Yes
36717031	10351000132101	Post polypectomy syndrome	-	Yes
42572795	34171000009105	Degloving injury of distal tail	-	Yes
4159754	371123004	Infected conjunctival abrasion	-	Yes
36717031	10351000132101	Post polypectomy syndrome	-	Yes

Wound specific procedures

Concept ID	Concept Code	Concept Name	Descendants	Exclude
607469	1153457002	Care of open wound	Yes	-
607654	1155760007	Care of malignant wound	Yes	-
4057680	19697009	Debridement and suture	Yes	-
4075360	225148005	Surgical debridement of wound	Yes	-
4075361	225149002	Debridement of wound with topical agent	Yes	-
4101851	27930000	Debridement of open fracture	Yes	-
4106703	2968008	Craniectomy with treatment of penetrating wound of brain	Yes	-
4120998	302437009	Operation on skin wound	Yes	-
4145455	34390007	Nonexcisional debridement of burn	Yes	-
4150040	31064000	Debridement of skin and subcutaneous tissue	Yes	-
4194536	79093007	Craniotomy with treatment of penetrating wound of brain	Yes	-
4246976	40834003	Complex surgical repair of wounds of trunk	Yes	-
4248822	40872008	Excisional debridement of burn	Yes	-
4275144	64261005	Debridement of open fracture of tibia	Yes	-
4311933	85875009	Debridement of wound of skin	Yes	-
40486961	446247009	Debridement of wound of upper limb	Yes	-
40488886	448203007	Excision of pilonidal sinus and suturing of surgical wound	Yes	-
42872679	450670006	Debridement of skin of head	Yes	-
44807174	795191000000102	Debridement of skin	Yes	-

Systemic antibiotics

Concept Id	Concept Code	Concept Name	Descendants	Exclude
1707687	11124	vancomycin	Yes	-
1705674	10829	trimethoprim	Yes	-
902722	10627	tobramycin	Yes	-
1742432	384455	tigecycline	Yes	-
1836948	10395	tetracycline	Yes	-
1,9E+07	57021	teicoplanin	Yes	-
1741122	37617	tazobactam	Yes	-
1836241	10167	sulbactam	Yes	-
966956	9793	silver sulfadiazine	Yes	-
1560047	2049549	plazomicin	Yes	-
1746114	8339	piperacillin	Yes	-
1,9E+07	33277	phenethicillin	Yes	-
1729720	7984	penicillin V	Yes	-
1728416	7980	penicillin G	Yes	-
951511	42372	mupirocin	Yes	-
1708880	6980	minocycline	Yes	-
1707164	6922	metronidazole	Yes	-
1709170	29561	meropenem	Yes	-
1736887	190376	linezolid	Yes	-
1742253	82122	levofloxacin	Yes	-
1778262	5690	imipenem	Yes	-
4,6E+07	1596450	gentamicin	Yes	-
1,9E+07	113608	fusidate	Yes	-
1,9E+07	4448	floxacillin	Yes	-
1746940	4053	erythromycin	Yes	-
1717963	325642	ertapenem	Yes	-
3,5E+07	2055906	eravacycline	Yes	-
1738521	3640	doxycycline	Yes	-
4,6E+07	1539239	dalbavancin	Yes	-
901845	2709	colistin	Yes	-
997881	2582	clindamycin	Yes	-
1759842	48203	clavulanate	Yes	-
1750500	21212	clarithromycin	Yes	-
1797513	2551	ciprofloxacin	Yes	-
1786621	2231	cephalexin	Yes	-
1778162	2194	cefuroxime	Yes	-

Concept Id	Concept Code	Concept Name	Descendants	Exclude
1777806	2193	ceftriaxone	Yes	-
1776684	2191	ceftazidime	Yes	-
4,6E+07	1040004	ceftaroline fosamil	Yes	-
1774470	2186	cefotaxime	Yes	-
3,7E+07	2265702	cefiderocol	Yes	-
1771162	2180	cefazolin	Yes	-
1715117	1272	aztreonam	Yes	-
1734104	18631	azithromycin	Yes	-
1717327	733	ampicillin	Yes	-
1713332	723	amoxicillin	Yes	-

Penetrating or puncture wounds

Concept ID	Concept Code	Concept Name	Descendants	Exclude
441571	75199002	Retained old foreign body following penetrating wound of orbit	Yes	-
4022680	226034001	Injecting drug user	Yes	-
4046789	134222005	Penetrating wound	Yes	-
4096472	262560006	Penetrating wound	Yes	-
4322407	425322008	Stab wound	Yes	-
37205079	784358006	Deep stab wound	Yes	-
44782823	698820005	Post procedure puncture site infection	Yes	-
44790829	240541000000107	Impaled object in back	Yes	-
44790830	240551000000105	Impaled object in lower limb	Yes	-
44790831	240561000000108	Impaled object in upper limb	Yes	-
4123271	304234001	Needle stick injury with contaminated needle	Yes	Yes
4054926	242992007	Accidental puncture during a procedure	Yes	Yes
36712756	108507410001191 00	Accidental needle stick injury	Yes	Yes
36683323	781126009	Accidental puncture of artery	Yes	Yes
4114305	299971005	Insect sting	Yes	Yes
4154700	371058004	Venomous sting	Yes	Yes
3654402	830275007	Inadvertent dural tap	Yes	Yes
44783259	699326004	Accidental puncture of pleura	Yes	Yes
439218	242991000	Accidental puncture during medical care	Yes	Yes
4114306	299973008	Plant sting	Yes	Yes
42574046	320411000009101	Puncture wound of navicular bursa	Yes	Yes
4246585	60341009	Burrow	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4298083	386143003	Drain insertion site	Yes	Yes
4296228	386141001	Insertion site	Yes	Yes
4126318	304235000	Sharps injury	Yes	Yes
4219275	72587008	Sting	Yes	Yes
36675187	771533007	Superficial soft tissue infection at site of neuraxial block	Yes	Yes
4153267	283555009	Pellet wound of mouth	Yes	Yes
36675189	771535000	Superficial soft tissue infection at site of peripheral nerve block	Yes	Yes
4047242	13136005	Injection site	-	Yes
4318388	95381006	Injection site infection	-	Yes
4100904	299972003	Sting of skin	-	Yes
4095256	262549002	Superficial puncture wound	-	Yes
4119766	234083009	Venous puncture	-	Yes
37158895	1281808009	Deep puncture	-	Yes
4022585	11639007	Puncture	-	Yes
4100904	299972003	Sting of skin	-	Yes
4155329	283649009	Sewing needle through nail	-	Yes
4304344	103613006	Needle track	-	Yes

Wounds containing dirt, soil, faeces, or saliva

Concept ID	Concept Code	Concept Name	Descendants	Exclude
444249	82117004	Abrasion and/or friction burn with infection	Yes	-
1449955	1354433009	Open wound of posterior wall of thorax due to dog bite	Yes	-
4090679	186327003	Pasteurella septic infection (cat or dog bite)	Yes	-
4106653	283282000	Wood splinter in upper limb	Yes	-
4106660	283298007	Wood splinter in back	Yes	-
4106840	283189002	Fishing hook foreign body	Yes	-
4151842	283682007	Bite - wound	Yes	-
4153877	269406001	Post-traumatic wound infection	Yes	-
4154912	283304003	Wood splinter in lower limb	Yes	-
4180472	429563006	Open bite wound	Yes	-
4183970	298010008	Wound dirty	Yes	-
36674229	770951006	Superficial bite wound	Yes	-
37168890	1287047002	Wood splinter in head and/or neck	Yes	-
37310164	10948891000119100	Open wound of left upper arm due to dog bite	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
42689793	1068391000000100	Injury whilst gardening	Yes	-
433116	217697000	Dog bite	-	-
3176778	2111000100000410 0	Chronic abdominal wound infection	-	-
3188217	2390000100000410 0	Recurrent abdominal wound abscess	-	-
3189195	6960001000004100	Infected laceration of lip	-	-
4030849	238382001	Wound abscess	-	-
4105036	193300006	Multiple old intraocular magnetic foreign bodies	-	-
4105283	283302004	Wood splinter in perineum	-	-
4108795	283297002	Wood splinter in trunk	-	-
4108796	283299004	Wood splinter in chest	-	-
4108797	283300007	Wood splinter in breast	-	-
4108907	283301006	Wood splinter in abdomen	-	-
4141909	3404009	Bite wound	-	-
4154913	283307005	Wood splinter in groin	-	-
4216185	81405006	Open wound of upper limb	-	-
4297984	76844004	Local infection of wound	-	-
36674931	770925009	Deep bite wound	-	-
36715557	721267000	Pyogenic infection of skin and subcutaneous tissues caused by bacterium	-	-
36715559	721269002	Pyogenic abscess of skin caused by bacterium	-	-
36717252	723140005	Complex wound of head with retained external material	-	-
42689805	1068541000000100	Injury whilst working on farm	-	-
44784303	698405005	Open wound of trunk with abscess	-	-
4106651	283278002	Superficial wood splinter	-	-
4152947	283303009	Wood splinter in genitalia	-	-
1244205	1089881100011910 0	Open wound of lip due to human bite	Yes	Yes
37310095	1097109100011910 0	Open wound of left upper arm due to human bite	Yes	Yes
37310113	1095912100011910 0	Open wound of right upper arm due to human bite	Yes	Yes
4094813	262570008	Deep wound due to human bite	Yes	Yes
4094808	262555007	Human bite - wound	Yes	Yes
4173025	276433004	Insect bite - wound	Yes	Yes
4257686	409985002	Arthropod bite wound	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
433949	242605002	Human bite	Yes	Yes
4152473	283837005	Fish bite wound	Yes	Yes
954118	361231000009109	Abscess from cat bite	Yes	Yes
4254651	409986001	Tache noire	Yes	Yes
36716562	722608004	Superficial bite of scalp	-	Yes
4216185	81405006	Open wound of upper limb	-	Yes
4159754	371123004	Infected conjunctival abrasion	-	Yes
4105036	193300006	Multiple old intraocular magnetic foreign bodies	-	Yes
36717252	723140005	Complex wound of head with retained external material	-	Yes

Wounds containing devitalised tissue

Concept ID	Concept Code	Concept Name	Descendants	Exclude
75994	77490007	Full thickness burn of shoulder	Yes	-
79186	40521006	Contusion to heart with open wound into thorax	Yes	-
197134	21580006	Hematoma AND contusion of liver with open wound into abdominal cavity	Yes	-
254790	42019003	Contusion of lung with open wound into thorax	Yes	-
376552	269144002	Cerebral laceration and contusion	Yes	-
434785	77768006	Intracranial hemorrhage following injury with open intracranial wound	Yes	-
438590	28188001	Brain injury with open intracranial wound	Yes	-
444042	35507009	Deep third degree burn of chest wall	Yes	-
607984	1156468009	Deep partial thickness burn	Yes	-
759965	10819301000119100	Open fracture of left tibia	Yes	-
4001843	110221003	Third degree burn of hard palate	Yes	-
4001844	110225007	Third degree burn of soft palate	Yes	-
4001845	110229001	Third degree burn of oropharynx	Yes	-
4002669	110177009	Third degree burn of preauricular region of face	Yes	-
4002678	110209002	Third degree burn of maxillary attached gingiva	Yes	-
4002685	110236000	Full thickness burn of tongue	Yes	-
4003192	110025001	Open fracture of alveolar ridge of maxilla	Yes	-
4003360	110189006	Full thickness burn of cheek	Yes	-
4003504	110213009	Third degree burn of mandibular attached gingiva	Yes	-
4004977	110217005	Third degree burn of floor of mouth	Yes	-
4005631	110197004	Third degree burn of labial mucosa	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4005632	110201004	Third degree burn of maxillary vestibule	Yes	-
4049045	20659000	Full thickness burn of female genitalia	Yes	-
4052069	211793001	Corrosion of third degree of trunk	Yes	-
4054552	211875009	Corrosion of first degree of shoulder and upper limb, except wrist and hand	Yes	-
4054747	212062005	Corrosion involving 20 to 29 percent of body surface	Yes	-
4054753	212126007	Corrosion involving 90 percent or more of body surface	Yes	-
4055186	211947008	Corrosion of first degree of wrist and hand	Yes	-
4055331	212051005	Corrosion involving less than 10 percent of body surface	Yes	-
4055449	212075005	Corrosion involving 40 to 49 percent of body surface	Yes	-
4057638	211768003	Corrosion of first degree of trunk	Yes	-
4057924	212057009	Corrosion involving 10 to 19 percent of body surface	Yes	-
4057927	212068009	Corrosion involving 30 to 39 percent of body surface	Yes	-
4057929	212083004	Corrosion involving 50 to 59 percent of body surface	Yes	-
4057933	212102005	Corrosion involving 70 to 79 percent of body surface	Yes	-
4057935	212113008	Corrosion involving 80 to 89 percent of body surface	Yes	-
4059703	211749001	Corrosion of head and neck	Yes	-
4059993	212006005	Corrosion of first degree of hip and lower limb,except ankle and foot	Yes	-
4059994	212010008	Corrosion of first degree of ankle and foot	Yes	-
4059995	212012000	Corrosion of third degree of ankle and foot	Yes	-
4060013	212092001	Corrosion involving 60 to 69 percent of body surface	Yes	-
4094477	287134001	Full thickness burn of eyelid	Yes	-
4094846	262687004	Cerebellar laceration and contusion	Yes	-
4095264	262577006	Degloving injury	Yes	-
4095859	262573005	Pellet wound	Yes	-
4096471	262557004	Deep wound	Yes	-
4096479	262595009	Traumatic amputation	Yes	-
4100336	27597005	Deep third degree burn of female genitalia	Yes	-
4153697	283545005	Gunshot wound	Yes	-
4178756	52329006	Fracture, open	Yes	-
4211967	57495003	Deep wound	Yes	-
4213471	80247002	Third degree burn injury	Yes	-
4215380	416645004	Open fracture dislocation of joint of shoulder girdle	Yes	-
4246696	397182009	Open crush injury	Yes	-
4264281	397181002	Open fracture	Yes	-
4279639	66554005	Full thickness burn of male genitalia	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4299128	403192003	Full thickness burn	Yes	-
36675018	771247007	Deep full thickness burn injury	Yes	-
42536575	735505006	Deep third degree burn of perineum	Yes	-
42538212	741070003	Full thickness burn of head and neck	Yes	-
44788773	198751000000109	Open fracture of femur, upper epiphysis	Yes	-
44806654	813491000000109	Foreign body associated with burn	Yes	-
46270358	285821000119105	Major laceration of heart with hemopericardium	Yes	-
201715	25554004	Major laceration of liver with open wound into abdominal cavity	-	-
439194	45659008	Subdural hemorrhage following injury with open intracranial wound AND loss of consciousness	-	-
442533	210205007	Kidney hematoma without rupture of capsule, with open wound into cavity	-	-
443267	274204004	Corneal burn	-	-
443870	13891000	Major laceration of liver without open wound into abdominal cavity	-	-
444408	9264002	Laceration of kidney with open wound into abdominal cavity	-	-
3185417	8410001000004100	Cerebral hematoma with open intracranial wound	-	-
4052067	211786000	Corrosion of second degree of trunk	-	-
4054648	211946004	Corrosion of wrist and hand	-	-
4054663	212011007	Corrosion of second degree of ankle and foot	-	-
4054669	212038000	Corrosion of larynx and/or trachea	-	-
4054671	212042002	Corrosion of esophagus	-	-
4055178	211876005	Corrosion of second degree of shoulder and upper limb, except wrist and hand	-	-
4055319	212007001	Corrosion of 2nd degree of hip and lower limb, except ankle and foot	-	-
4055326	212035002	Corrosion of mouth and pharynx	-	-
4055327	212039008	Corrosion of larynx, trachea, and lung	-	-
4055329	212047008	Corrosion of internal genitourinary organs	-	-
4057786	211948003	Corrosion of second degree of wrist and hand	-	-
4057798	212009003	Corrosion of ankle and foot	-	-
4084589	282453006	Corrosion of pharynx	-	-
4294188	385516009	Contact burn of skin	-	-
4302083	418591009	Corneal wound burn	-	-
36715583	721300003	Major laceration of spleen	-	-
36715678	721414002	Major laceration of internal jugular vein	-	-
36716590	722642008	Major laceration of carotid artery	-	-
36716591	722645005	Major laceration of external jugular vein	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
36717575	722643003	Major laceration of vertebral artery	-	-
42536576	735506007	Complex burn of perineum	-	-
42536577	735507003	Complex burn of genitalia	-	-
42536580	735510005	Complex burn of wrist	-	-
42536581	735511009	Complex burn of hand	-	-
42536582	735513007	Complex burn of ankle	-	-
42538701	762468009	Complex burn of head	-	-
42538703	762472008	Complex burn of face	-	-
42538705	762475005	Complex burn of trunk	-	-
42538707	762478007	Complex burn of shoulder	-	-
42538714	762488008	Complex burn of hip	-	-
42539366	762469001	Complex burn of neck	-	-
42539367	762479004	Complex burn of upper limb	-	-
42539368	762487003	Complex burn of lower limb	-	-
42539542	735512002	Complex burn of foot	-	-
44806474	801711000000105	O/E - wound necrotic	-	-
195106	210076002	Lung laceration with open wound into thorax	Yes	Yes
37158895	1281808009	Deep puncture	Yes	Yes
4094811	262566000	Deep puncture wound	Yes	Yes
36674931	770925009	Deep bite wound	Yes	Yes
4096475	262571007	Deep dog bite	Yes	Yes
4094812	262569007	Deep mammalian bite wound	Yes	Yes
4094813	262570008	Deep wound due to human bite	Yes	Yes
37208109	460641000124106	Deep surgical incision wound	Yes	Yes
42572795	34171000009105	Degloving injury of distal tail	Yes	Yes
4095262	262568004	Deep stab wound	Yes	Yes
37205079	784358006	Deep stab wound	Yes	Yes
4094810	262564002	Deep contused wound	-	Yes
37206211	785852005	Deep contusion	-	Yes
1244766	1290799005	Deep contusion of bone	-	Yes
1244765	1290798002	Deep contusion of muscle	-	Yes

Wounds with foreign body

Concept ID	Concept Code	Concept Name	Descendants	Exclude
138844	20187005	Foreign body granuloma of muscle	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
433909	55899000	Foreign body on external eye	Yes	-
608207	1157025007	Infected foreign body	Yes	-
4051759	211463006	Foreign body in skin wound	Yes	-
4105269	283243002	Glass in upper limb	Yes	-
4106510	283153005	Metal foreign body in upper limb	Yes	-
4106531	283255008	Glass in trunk	Yes	-
4106835	283166005	Metal foreign body in trunk	Yes	-
4177626	298073003	Foreign body in skin of upper limb	Yes	-
4181882	298085006	Foreign body in skin of trunk	Yes	-
4185007	298062005	Foreign body in skin of head	Yes	-
4185009	298071001	Foreign body in skin of neck	Yes	-
36716563	722609007	Laceration with foreign body of head	Yes	-
36716586	722638005	Laceration of neck with foreign body	Yes	-
36717252	723140005	Complex wound of head with retained external material	Yes	-
37116486	733213005	Laceration of thorax with foreign body	Yes	-
37116623	733397005	Laceration of shoulder region with foreign body	Yes	-
37116624	733398000	Laceration of upper arm with foreign body	Yes	-
37117206	724611004	Foreign body granuloma of soft tissue	Yes	-
37117752	733232004	Laceration of forearm with foreign body	Yes	-
37168892	1287048007	Glass in head and/or neck	Yes	-
37168893	1287049004	Metal foreign body in head and/or neck	Yes	-
37311190	823994000	Glass foreign body in skin	Yes	-
40482783	443678007	Splinter foreign body	Yes	-
40488823	446653004	Foreign body in lower limb	Yes	-
42536780	735776005	Laceration of abdomen with foreign body	Yes	-
42536781	735777001	Laceration of lower back with foreign body	Yes	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
42536808	735813002	Laceration of wrist with foreign body	Yes	-
42536809	735814008	Laceration of hand with foreign body	Yes	-
42539040	735778006	Laceration of pelvis with foreign body	Yes	-
46270117	142661000119102	Retained foreign body	Yes	-
4235831	439889008	Wound caused by nail device	Yes	-
256571	74699008	Foreign body in nose	-	-
259995	211616004	Foreign body in orifice	-	-
374801	75441006	Foreign body in ear	-	-
381010	231969006	Foreign body in lens	-	-
432768	37450000	Corneal foreign body	-	-
438412	231959000	Foreign body in anterior chamber	-	-
439478	231961009	Foreign body in ciliary body	-	-
440400	231960005	Foreign body in iris	-	-
760128	10847621000119100	Foreign body in right ear	-	-
760129	10847661000119100	Foreign body in left ear	-	-
765578	450671000124109	Foreign body in eye	-	-
3188959	30750001000004100	Femoral artery foreign body	-	-
4053838	125670008	Foreign body	-	-
4058346	211311003	Foreign body in hand	-	-
4089820	251735009	Angle foreign body	-	-
4094821	262598006	Intracranial foreign body	-	-
4094824	262610009	Umbilical foreign body	-	-
4094829	262625009	Foreign body in female perineum	-	-
4095272	262613006	Foreign body in urinary conduit	-	-
4096489	262621000	Foreign body in male perineum	-	-
4099453	27288007	Retrobulbar foreign body	-	-
4106532	283256009	Glass in back	-	-
4106836	283167001	Metal foreign body in back	-	-
4108528	194342001	Old foreign body in middle ear	-	-
4112119	286552001	Foreign body of neurological structure	-	-
4116121	286561001	Foreign body of cardiovascular structure	-	-
4116122	286563003	Foreign body of musculoskeletal structure	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
4120254	286564009	Foreign body of breast	-	-
4120256	286566006	Foreign body of endocrine structure	-	-
4120388	286603008	Foreign body of body cavity and wall	-	-
4121340	302907009	Foreign body in middle ear	-	-
4137789	32331008	Foreign body in auricle	-	-
4139420	32874004	Foreign body in auditory canal	-	-
4147781	268115005	Foreign body left in elbow	-	-
4150992	314532005	Foreign body in anterior segment of eyeball	-	-
4151731	268117002	Foreign body left in hand	-	-
4154157	282729004	Foreign body in heart	-	-
4154741	284008001	Foreign body in bone	-	-
4170462	275453008	Foreign body - finger	-	-
4170472	273965001	Foreign body dermatosis	-	-
4173807	275454002	Foreign body in thumb	-	-
4182431	429719000	Foreign body in forearm	-	-
4189529	615005	Obstruction due to foreign body accidentally left in operative wound AND/OR body cavity during a procedure	-	-
4198022	431875001	Open wound of face with foreign body	-	-
4204038	308891007	Intra-abdominal foreign body left inside at operation	-	-
4205673	308890008	Intra-abdominal foreign body	-	-
4246661	93458008	Foreign body in skin	-	-
4247591	93459000	Foreign body in subcutaneous tissue	-	-
4264851	397177002	Open injury with foreign body in wound	-	-
4297098	386082004	Foreign body in head	-	-
4309467	213278009	Adhesions resulting from foreign body left postoperatively	-	-
4309469	213282006	Foreign body left in wound	-	-
4310567	423428008	Foreign body of face	-	-
4312766	424959007	Foreign body of neck	-	-
4335887	231852005	Orbital foreign body	-	-
4341779	236010002	Peritoneal foreign body	-	-
36712753	1084914100011910 0	Foreign body in right cornea	-	-
36712754	1084918100011910 0	Foreign body in left cornea	-	-
37116423	733128002	Obstruction of superior vena cava with foreign body	-	-
37206800	787018009	Foreign body of eye region	-	-

Concept ID	Concept Code	Concept Name	Descendants	Exclude
40492372	447377007	Foreign body in jaw bone	-	-
42536644	735583001	Obstruction of inferior vena cava with foreign body	-	-
44806645	813381000000102	Foreign body associated with wound	-	-
1077214	43291000087103	Foreign body of left eye region	-	-
1077216	43311000087102	Foreign body of right eye region	-	-
1077215	43301000087104	Foreign body of left orbit proper	-	-
1077217	43321000087105	Foreign body of right orbit proper	-	-
42599652	357971000009101	Porcupine quill foreign body	Yes	Yes
43021394	473154008	Retained fragment of ureteric catheter	Yes	Yes
36675631	772072004	Retained fragment of urethral catheter	Yes	Yes
42536854	735867008	Puncture wound and foreign body of ankle	Yes	Yes
42539047	735868003	Puncture wound and foreign body of foot	Yes	Yes
37171801	42461000087103	Puncture wound of buttock with foreign body	Yes	Yes
37116528	733270000	Puncture wound of hip with foreign body	Yes	Yes
1245233	1297167005	Puncture wound of knee region with foreign body	Yes	Yes
1077275	44431000087101	Puncture wound of left ankle with foreign body	Yes	Yes
1246562	42371000087104	Puncture wound of left buttock with foreign body	Yes	Yes
1077276	44441000087107	Puncture wound of left foot with foreign body	Yes	Yes
1077205	43171000087106	Puncture wound of left hip with foreign body	Yes	Yes
1246563	42391000087100	Puncture wound of left knee region with foreign body	Yes	Yes
37171937	43181000087108	Puncture wound of left lower leg with foreign body	Yes	Yes
37171665	40231000087105	Puncture wound of left thigh with foreign body	Yes	Yes
37116547	733292001	Puncture wound of lower leg with foreign body	Yes	Yes
1077277	44451000087105	Puncture wound of right ankle with foreign body	Yes	Yes
1246571	42611000087102	Puncture wound of right buttock with foreign body	Yes	Yes
1077278	44461000087108	Puncture wound of right foot with foreign body	Yes	Yes
1077209	43221000087101	Puncture wound of right hip with foreign body	Yes	Yes
1246572	42631000087107	Puncture wound of right knee region with foreign body	Yes	Yes

Concept ID	Concept Code	Concept Name	Descendants	Exclude
37171944	43231000087104	Puncture wound of right lower leg with foreign body	Yes	Yes
37171666	40241000087104	Puncture wound of right thigh with foreign body	Yes	Yes
37118663	733271001	Puncture wound of thigh with foreign body	Yes	Yes
1077212	43261000087106	Puncture wound of toe of left foot with foreign body	Yes	Yes
1077213	43271000087102	Puncture wound of toe of right foot with foreign body	Yes	Yes
42536860	735876001	Puncture wound of toe with foreign body	Yes	Yes
4149911	309749008	Eyelash stuck in lacrimal punctum	Yes	Yes
4147870	310645008	Eyelash stuck in meibomian gland orifice	Yes	Yes
4154912	283304003	Wood splinter in lower limb	Yes	Yes
4106660	283298007	Wood splinter in back	Yes	Yes
4106653	283282000	Wood splinter in upper limb	Yes	Yes
4106651	283278002	Superficial wood splinter	Yes	Yes
37168890	1287047002	Wood splinter in head and/or neck	Yes	Yes
4106840	283189002	Fishing hook foreign body	Yes	Yes
4108907	283301006	Wood splinter in abdomen	Yes	Yes
4108797	283300007	Wood splinter in breast	Yes	Yes
4108796	283299004	Wood splinter in chest	Yes	Yes
4152947	283303009	Wood splinter in genitalia	Yes	Yes
4154913	283307005	Wood splinter in groin	Yes	Yes
4105283	283302004	Wood splinter in perineum	Yes	Yes
4108795	283297002	Wood splinter in trunk	Yes	Yes
443910	3018008	Penetration of eyeball with magnetic foreign body	-	Yes
4111224	285326004	Ear ring embedded in ear lobe	-	Yes
3655841	870312007	Penetrating wound of eyeball with foreign body	-	Yes
44790830	240551000000105	Impaled object in lower limb	-	Yes
760826	1186432100011910 0	Superficial foreign body of skin of right foot	-	Yes
760827	1186440100011910 0	Superficial foreign body of skin of left foot	-	Yes
4151833	283650009	Metal nail puncture wound of skin	-	Yes

Annex II: Supplementary Tables and Figures

Table S1. Annual incidence rates of TIG during the study period, per data source.

	NAJS				InGef RDB				IPCI				BIFAP				CPRD GOLD			
Calendar year	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)
2017	4,040,250	3,904,385	8,530	2.18 (2.14 – 2.23)	7,410,473	7,124,820	312	0.04 (0.04 – 0.05)	1,173,193	1,101,769	640	0.58 (0.54 – 0.63)	13,524,294	13,214,664	263	0.02 (0.02 – 0.02)	4,414,996	3,997,672	446	0.11 (0.10 – 0.12)
2018	4,106,889	4,017,452	8,014	1.99 (1.95 – 2.04)	7,463,176	7,201,699	315	0.04 (0.04 – 0.05)	1,192,477	1,117,065	646	0.58 (0.53 – 0.62)	13,691,733	13,370,803	233	0.02 (0.02 – 0.02)	4,115,814	3,807,753	44	0.01 (0.01 – 0.02)
2019	4,141,119	4,065,409	7,965	1.96 (1.92 – 2.00)	7,483,801	7,223,804	289	0.04 (0.04 – 0.04)	1,216,380	1,142,262	638	0.56 (0.52 – 0.60)	16,504,634	15,788,980	208	0.01 (0.01 – 0.02)	3,971,691	3,650,671	29	0.01 (0.01 – 0.01)
2020	4,165,752	4,105,735	6,750	1.64 (1.61 –	7,520,181	7,269,869	250	0.03 (0.03 –	1,299,548	1,187,331	518	0.44 (0.40 –	22,803,739	22,105,072	191	0.01 (0.01 –	3,736,092	3,401,823	30	0.01 (0.01 –

	NAJS				InGef RDB				IPCI				BIFAP				CPRD GOLD			
Calendar year	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)	Denominator (N)	PYs	Outcome (N)	IR (95% CI)
				1.68)				0.04)				0.48)				0.01)				0.01)
2021	4,175,408	4,105,418	7,206	1.76 (1.71 – 1.80)	7,488,489	7,247,053	165	0.02 (0.02 – 0.03)	1,373,714	1,230,128	383	0.31 (0.28 – 0.34)	23,403,831	22,709,880	151	0.01 (0.01 – 0.01)	3,405,574	3,064,933	18	0.01 (0.00 – 0.01)
2022	4,202,342	4,120,273	7,901	1.92 (1.88 – 1.96)	7,498,472	7,263,290	157	0.02 (0.02 – 0.03)	1,368,102	1,135,376	376	0.33 (0.30 – 0.37)	23,782,269	23,128,029	131	0.01 (0.00 – 0.01)	3,106,577	2,845,926	17	0.01 (0.00 – 0.01)
2023	–	–	–	–	7,583,949	7,321,017.24	189	0.03 (0.02 – 0.03)	1,233,345	1,158,993	366	0.32 (0.28 – 0.35)	23,405,472	22,905,199	155	0.01 (0.01 – 0.01)	2,955,853	2,756,639	16	0.01 (0.00 – 0.01)

N = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; IR = incidence rate per 1,000 PYs; NAJS = Croatian National Public Health Information System; PYs = person years.

Table S2. Annual treatment rates of TIG during the study period, per data source.

Calendar year	NAJS				InGef RDB				IPCI				BIFAP				CPRD GOLD			
	Denominator (N)	PY	Outcome (N)	TR (95 % CI)	Denominator (N)	PY	Outcome (N)	TR (95 % CI)	Denominator (N)	PY	Outcome (N)	TR (95 % CI)	Denominator (N)	PY	Outcome (N)	TR (95 % CI)	Denominator (N)	PY	Outcome (N)	TR (95 % CI)
2017	4,134,328	4,045,871	9,194	2.27 (2.23 – 2.32)	7,689,972	7,410,271	326	0.04 (0.04 – 0.05)	1,289,074	1,201,991	705	0.59 (0.54 – 0.63)	13,860,867	13,510,163	277	0.02 (0.02 – 0.02)	4,691,944	4,246,984	488	0.11 (0.10 – 0.13)
2018	4,176,431	4,100,514	8,446	2.06 (2.02 – 2.10)	7,713,644	7,445,061	330	0.04 (0.04 – 0.05)	1,283,886	1,212,742	716	0.59 (0.55 – 0.64)	16,829,847	16,051,795	280	0.02 (0.02 – 0.02)	4,379,600	4,026,293	46	0.01 (0.01 – 0.02)
2019	4,207,470	4,135,594	8,532	2.06 (2.02 – 2.11)	7,747,894	7,462,806	301	0.04 (0.04 – 0.05)	1,367,742	1,248,498	726	0.58 (0.54 – 0.63)	23,121,718	22,298,652	277	0.01 (0.01 – 0.01)	4,230,778	3,873,8456	32	0.01 (0.01 – 0.01)
2020	4,228,197	4,173,353	7,25	1.74 (1.70 – 1.78)	7,722,992	7,488,517	268	0.04 (0.03 – 0.04)	1,466,885	1,342,325	636	0.47 (0.44 – 0.51)	23,797,567	23,100,941	207	0.01 (0.01 – 0.01)	3,956,874	3,596,873	33	0.01 (0.01 – 0.01)
2021	4,266,640	4,184,214	7,888	1.89 (1.	7,769,823	7,469,564	174	0.02 (0.	1,527,896	1,391,572	446	0.32 (0.	24,232,220	23,477,480	154	0.01 (0.	3,621,498	3,231,382	20	0.01 (0.

Calendar year	NAJS				InGef RDB				IPCI				BIFAP				CPRD GOLD			
	Denominator (N)	PY	Outcome (N)	TR (95% CI)	Denominator (N)	PY	Outcome (N)	TR (95% CI)	Denominator (N)	PY	Outcome (N)	TR (95% CI)	Denominator (N)	PY	Outcome (N)	TR (95% CI)	Denominator (N)	PY	Outcome (N)	TR (95% CI)
				84 – 1.93)				02 – 0.03)				29 – 0.35)				01 – 0.01)				00 – 0.01)
2022	4,273,529	4,204,145	8,705	2.07 (2.03 – 2.11)	7,824,719	7,528,513	166	0.02 (0.02 – 0.03)	1,517,004	1,274,418	443	0.35 (0.32 – 0.38)	24,389,830	23,787,411	138	0.01 (0.00 – 0.01)	3,303,744	3,015,202	17	0.01 (0.00 – 0.01)
2023	–	–	–	–	7,890,472	7,596,299	194	0.03 (0.02 – 0.03)	1,364,279	1,270,225	409	0.32 (0.29 – 0.35)	23,959,695	23,346,180	164	0.01 (0.01 – 0.01)	3,146,099	2,917,180	18	0.01 (0.00 – 0.01)

N = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System; PYs = person years; TR = treatment rate per 1,000 PYs.

Table S3. Annual prevalence rates of TIG during the study period, per data source.

	NAJS			InGef RDB			IPCI			IMASIS			BIFAP			CPRD GOLD		
Calendar year	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)
2017	4,134,328	9,065	0.219 (0.215 – 0.224)	7,689,972	323	0.004 (0.004 – 0.005)	1,289,074	680	0.053 (0.049 – 0.057)	400,000	126	0.032 (0.026 – 0.038)	13,860,867	274	0.002 (0.002 – 0.002)	4,691,944	484	0.010 (0.009 – 0.011)
2018	4,176,431	8,321	0.199 (0.195 – 0.204)	7,713,644	327	0.004 (0.004 – 0.005)	1,283,886	689	0.054 (0.050 – 0.058)	400,000	111	0.028 (0.023 – 0.033)	16,829,847	277	0.002 (0.001 – 0.002)	4,379,600	46	0.001 (0.001 – 0.001)
2019	4,207,470	8,270	0.197 (0.192 – 0.201)	7,747,894	301	0.004 (0.003 – 0.004)	1,367,742	695	0.051 (0.047 – 0.055)	400,000	122	0.031 (0.026 – 0.036)	23,121,718	273	0.001 (0.001 – 0.001)	4,230,778	32	0.001 (0.001 – 0.001)
2020	4,228,197	7,042	0.167 (0.163 – 0.170)	7,722,992	262	0.003 (0.003 – 0.004)	1,466,885	593	0.040 (0.037 – 0.044)	400,000	72	0.018 (0.014 – 0.023)	23,797,567	204	0.001 (0.001 – 0.001)	3,956,874	33	0.001 (0.001 – 0.001)
2021	4,266,640	7,562	0.177 (0.173 – 0.181)	7,769,823	168	0.002 (0.002 – 0.003)	1,527,896	421	0.028 (0.025 – 0.030)	400,000	54	0.014 (0.01 – 0.018)	24,232,220	154	0.001 (0.001 – 0.001)	3,621,498	20	0.001 (0.001 – 0.001)
2022	4,273,529	8,382	0.196 (0.192 – 0.200)	7,824,719	163	0.002 (0.002 – 0.002)	1,517,004	423	0.028 (0.025 – 0.031)	400,000	64	0.016 (0.013 – 0.020)	24,389,830	137	0.001 (0.001 – 0.001)	3,303,744	17	0.001 (0.001 – 0.001)
2023	–	–	–	7,890,472	192	0.002 (0.002	1,364,279	397	0.029 (0.026	400,000	79	0.020 (0.016	23,959,695	164	0.001 (0.001	3,146,099	18	0.001 (0.001

	NAJS			InGef RDB			IPCI			IMASIS			BIFAP			CPRD GOLD		
Calendar year	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)
						– 0.003)			– 0.032)			– 0.025)			– 0.001)			– 0.001)

N = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; InGef RDB = InGef Research Database; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

Table S4. Annual incidence rates of probable high-risk and possible tetanus-prone wounds that involved antibiotic treatment or a wound procedure, during the study period, per data source.

	NAJS				IPCI				BIFAP				CPRD GOLD			
Calendar year	Denominator (N)	PY	Outcome (N)	IR (95% CI)	Denominator (N)	PY	Outcome (N)	IR (95% CI)	Denominator (N)	PY	Outcome (N)	IR (95 % CI)	Denominator (N)	PY	Outcome (N)	IR (95 % CI)
2017	4,039,450	3,865,911	72,202	18.68 (18.54 – 18.81)	1,172,832	1,090,060	19,643	18.02 (17.77 – 18.27)	13,523,742	13,170,273	70,499	5.35 (5.31 – 5.39)	4,414,017	3,979,360	30,374	7.63 (7.55 – 7.72)
2018	4,043,266	3,924,591	68,581	17.47 (17.34 – 17.61)	1,173,965	1,089,630	20,486	18.80 (18.54 – 19.06)	13,621,545	13,269,342	68,672	5.18 (5.14 – 5.21)	4,087,639	3,767,441	28,509	7.57 (7.48 – 7.66)

	NAJS				IPCI				BIFAP				CPRD GOLD			
Calendar year	Denominator (N)	PY	Outcome (N)	IR (95% CI)	Denominator (N)	PY	Outcome (N)	IR (95% CI)	Denominator (N)	PY	Outcome (N)	IR (95% CI)	Denominator (N)	PY	Outcome (N)	IR (95% CI)
2019	4,018,282	3,915,084	65,985	16.85 (16.73 – 16.98)	1,179,435	1,097,617	19,276	17.56 (17.31 – 17.81)	16,366,800	15,609,912	87,915	5.63 (5.59 – 5.67)	3,919,045	3,589,978	23,808	6.63 (6.55 – 6.72)
2020	3,986,682	3,902,930	55,522	14.23 (14.11 – 14.34)	1,246,064	1,127,569	15,990	14.18 (13.96 – 14.40)	22,580,324	21,810,462	122,865	5.63 (5.60 – 5.66)	3,668,212	3,333,537	11,295	3.39 (3.33 – 3.45)
2021	3,950,324	3,858,910	55,288	14.33 (14.21 – 14.45)	1,308,330	1,161,356	15,797	13.60 (13.39 – 13.82)	23,061,525	22,305,483	138,032	6.19 (6.16 – 6.22)	3,338,410	2,999,065	9,794	3.27 (3.20 – 3.33)
2022	3,932,789	3,829,808	55,157	14.40 (14.28 – 14.52)	1,294,856	1,068,657	15,949	14.92 (14.69 – 15.16)	23,308,066	22,583,180	164,122	7.27 (7.23 – 7.30)	3,040,585	2,778,888	10,418	3.75 (3.68 – 3.82)
2023	–	–	–	–	1,163,306	1,082,425	17,496	16.16 (15.93 – 16.41)	22,792,125	22,203,161	200,908	9.05 (9.01 – 9.09)	2,886,187	2,684,089	11,574	4.31 (4.23 – 4.39)

N = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; IR = incidence rate per 1,000 PYs; NAJS = Croatian National Public Health Information System; PYs = person years.

Table S5. Annual incidence rates of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure, during the study period, per data source.

	NAJS				IPCI				BIFAP				CPRD GOLD			
Calendar year	Denominator (N)	PY	Outcome (N)	IR (95 % CI)	Denominator (N)	PY	Outcome (N)	IR (95 % CI)	Denominator (N)	PY	Outcome (N)	IR (95 % CI)	Denominator (N)	PY	Outcome (N)	IR (95 % CI)
2017	4,040,324	3,895,994	25,805	6.62 (6.54 – 6.70)	1,173,205	1,101,720	1,160	1.05 (0.99 – 1.12)	13,524,278	13,211,971	5,252	0.40 (0.39 – 0.41)	4,414,962	3,996,245	3,215	0.80 (0.78 – 0.83)
2018	4,089,506	3,991,617	24,760	6.20 (6.13 – 6.28)	1,191,979	1,116,325	1,114	1.00 (0.94 – 1.06)	13,686,776	13,363,872	4,199	0.31 (0.30 – 0.32)	4,113,204	3,803,814	3,153	0.83 (0.80 – 0.86)
2019	4,106,970	4,023,224	23,805	5.92 (5.84 – 5.99)	1,215,425	1,141,093	1,138	1.00 (0.94 – 1.06)	16,495,763	15,776,242	7,876	0.50 (0.49 – 0.51)	3,966,381	3,644,311	2,809	0.77 (0.74 – 0.80)
2020	4,115,771	4,048,306	20,827	5.14 (5.07 – 5.21)	1,298,123	1,185,572	1,198	1.01 (0.95 – 1.07)	22,787,347	22,077,501	19,558	0.89 (0.87 – 0.90)	3,728,800	3,394,174	1,833	0.54 (0.52 – 0.57)
2021	4,111,468	4,035,074	19,621	4.86 (4.79 – 4.93)	1,371,703	1,227,848	1,257	1.02 (0.97 – 1.08)	23,368,451	22,662,610	24,751	1.09 (1.08 – 1.11)	3,397,732	3,056,889	1,748	0.57 (0.55 – 0.60)
2022	4,126,265	4,038,613	19,013	4.71 (4.6	1,365,543	1,132,878	1,390	1.23 (1.1	23,722,982	23,056,151	26,802	1.16 (1.1	3,098,170	2,837,095	1,785	0.63 (0.6

				4 – 4.78)				6 – 1.29)				5 – 1.18)				0 – 0.66)
2023	–	–	–	–	1,230,500	1,155,732	1,250	1.08 (1.02 – 1.14)	23,322,179	22,807,873	29,588	1.30 (1.28 – 1.31)	2,946,558	2,746,850	1,807	0.66 (0.63 – 0.69)

N = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; IR = incidence rate per 1,000 PYs; NAJS = Croatian National Public Health Information System; PYs = person years.

Table S6. Annual prevalence of probable high-risk and possible tetanus-prone wounds that involved antibiotic treatment or a wound procedure, during the study period, per data source.

Calendar year	NAJS			IPCI			IMASIS			BIFAP			CPRD GOLD		
	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)
2017	4,134,328	77,125	1.865 (1.852 – 1.879)	1,289,074	21,771	1.689 (1.667 – 1.711)	400,000	574	0.144 (0.132 – 0.156)	13,860,867	72,615	0.524 (0.520 – 0.528)	4,691,944	33,090	0.705 (0.698 – 0.713)
2018	4,176,431	78,238	1.873 (1.860 – 1.886)	1,283,886	23,840	1.857 (1.834 – 1.880)	400,000	689	0.172 (0.160 – 0.186)	16,829,847	91,779	0.545 (0.542 – 0.549)	4,379,600	32,247	0.736 (0.728 – 0.744)
2019	4,207,470	80,088	1.903 (1.890 – 1.917)	1,367,742	23,594	1.725 (1.703 – 1.747)	400,000	641	0.160 (0.148 – 0.173)	23,121,718	174,663	0.755 (0.752 – 0.759)	4,230,778	28,260	0.668 (0.660 – 0.676)
2020	4,228,197	71,469	1.690 (1.678 – 1.703)	1,466,885	21,070	1.436 (1.417 – 1.456)	400,000	555	0.139 (0.128 – 0.151)	23,797,567	131,038	0.551 (0.548 – 0.554)	3,956,874	14,041	0.355 (0.349 – 0.361)
2021	4,266,640	73,620	1.725 (1.713 – 1.738)	1,527,896	20,903	1.368 (1.350 – 1.387)	400,000	641	0.160 (0.148 – 0.173)	24,232,220	148,507	0.613 (0.610 – 0.616)	3,621,498	12,173	0.336 (0.330 – 0.342)
2022	4,273,529	75,655	1.770 (1.758 – 1.783)	1,517,004	21,039	1.387 (1.368 – 1.406)	400,000	732	0.183 (0.170 – 0.197)	24,389,830	179,417	0.736 (0.732 – 0.739)	3,303,744	12,916	0.391 (0.384 – 0.398)
2023	–	–	–	1,364,279	22,710	1.665 (1.643 – 1.686)	400,000	793	0.198 (0.185 – 0.213)	23,959,695	224,290	0.936 (0.932 – 0.940)	3,146,099	14,394	0.458 (0.450 – 0.465)

N = number of individuals; BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

Table S7. Annual prevalence of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure, during the study period, per data source.

Calendar year	NAJS			IPCI			IMASIS			BIFAP			CPRD GOLD		
	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)	Denominator (N)	Outcome (N)	Prevalence, % (95% CI)
2017	4,134,328	27,850	0.674 (0.666 – 0.682)	1,289,074	1,255	0.097 (0.092 – 0.103)	400,000	133	0.033 (0.028 – 0.039)	13,860,867	5,430	0.039 (0.038 – 0.040)	4,691,944	3,460	0.074 (0.071 – 0.076)
2018	4,176,431	27,977	0.670 (0.662 – 0.678)	1,283,886	1,206	0.094 (0.089 – 0.099)	400,000	178	0.045 (0.038 – 0.052)	16,829,847	7,877	0.047 (0.046 – 0.048)	4,379,600	3,381	0.077 (0.075 – 0.080)
2019	4,207,470	28,301	0.673 (0.665 – 0.680)	1,367,742	1,259	0.092 (0.087 – 0.0970)	400,000	152	0.038 (0.032 – 0.045)	23,121,718	25,498	0.110 (0.109 – 0.112)	4,230,778	3,057	0.072 (0.070 – 0.075)
2020	4,228,197	25,843	0.611 (0.604 – 0.619)	1,466,885	1,344	0.092 (0.087 – 0.097)	400,000	121	0.030 (0.025 – 0.036)	23,797,567	20,722	0.087 (0.086 – 0.088)	3,956,874	2,021	0.051 (0.049 – 0.053)
2021	4,266,640	25,267	0.592 (0.585 – 0.600)	1,527,896	1,434	0.094 (0.089 – 0.099)	400,000	147	0.037 (0.031 – 0.043)	24,232,220	25,962	0.107 (0.106 – 0.108)	3,621,498	1,901	0.052 (0.050 – 0.055)
2022	4,273,529	25,084	0.587 (0.580 – 0.594)	1,517,004	1,611	0.106 (0.101 – 0.112)	400,000	149	0.037 (0.032 – 0.044)	24,389,830	28,144	0.115 (0.114 – 0.117)	3,303,744	1,937	0.059 (0.056 – 0.061)
2023	–	–	–	1,364,279	1,396	0.102 (0.097 – 0.108)	400,000	184	0.046 (0.040 – 0.053)	23,959,695	31,239	0.130 (0.129 – 0.132)	3,146,099	1,966	0.062 (0.060 – 0.065)

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CI = confidence interval; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

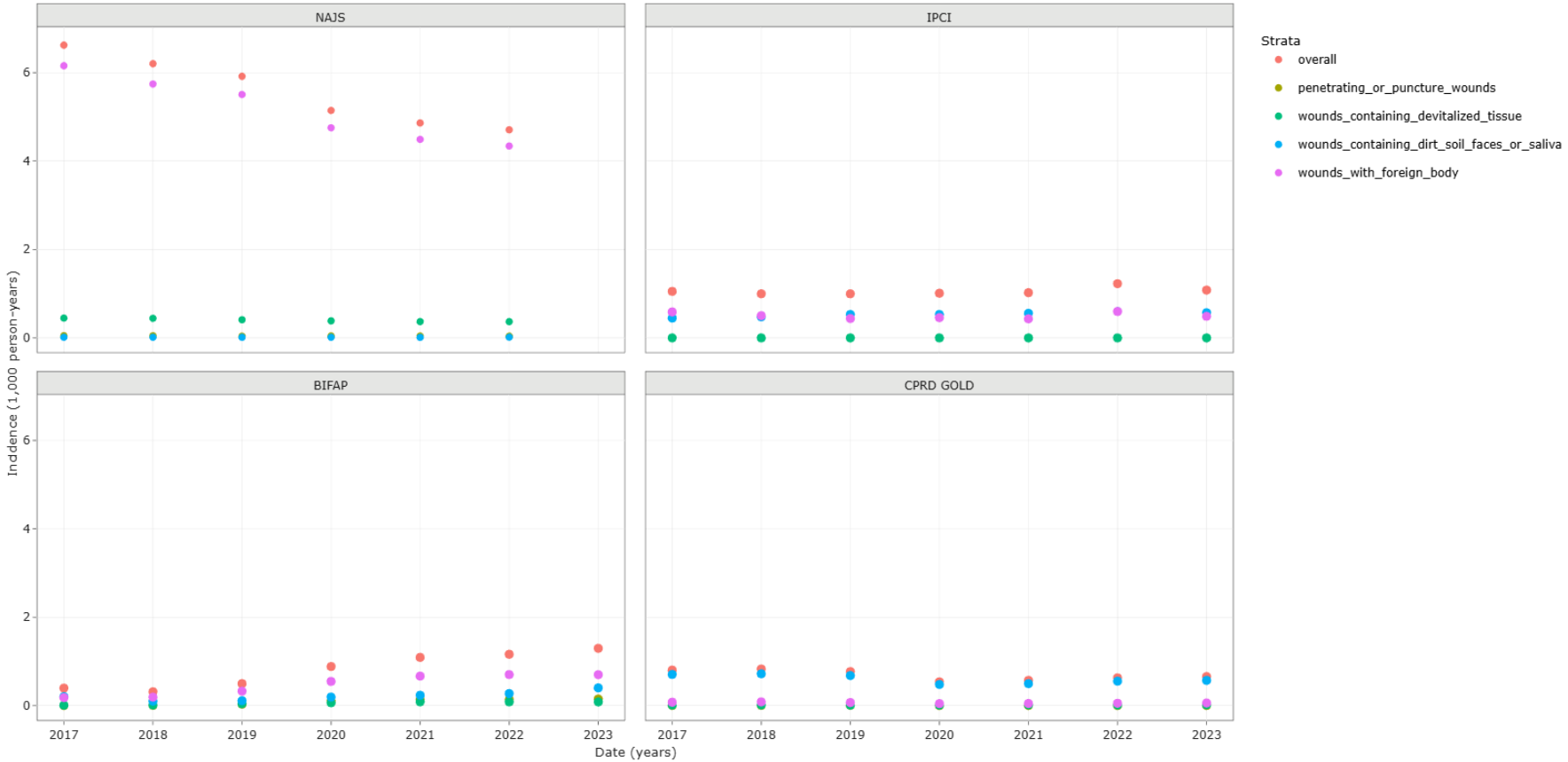

Figure S1. Annual incidence rate of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per wound type per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

Figure S2. Annual incidence rate of probable high-risk tetanus-prone wounds, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

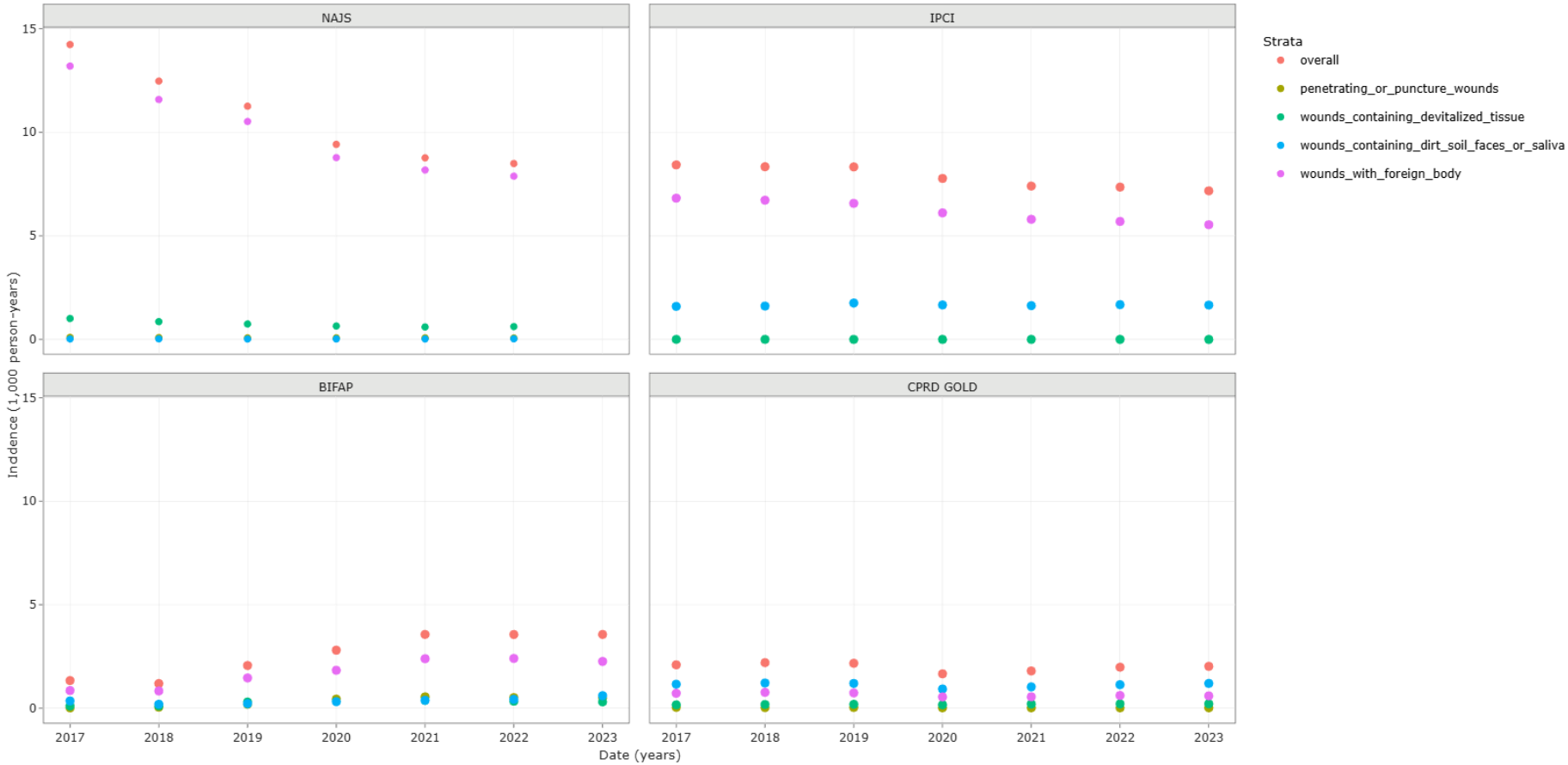

Figure S3. Annual incidence rate of probable high-risk tetanus-prone wounds, among the study population, during the study period, per wound type per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

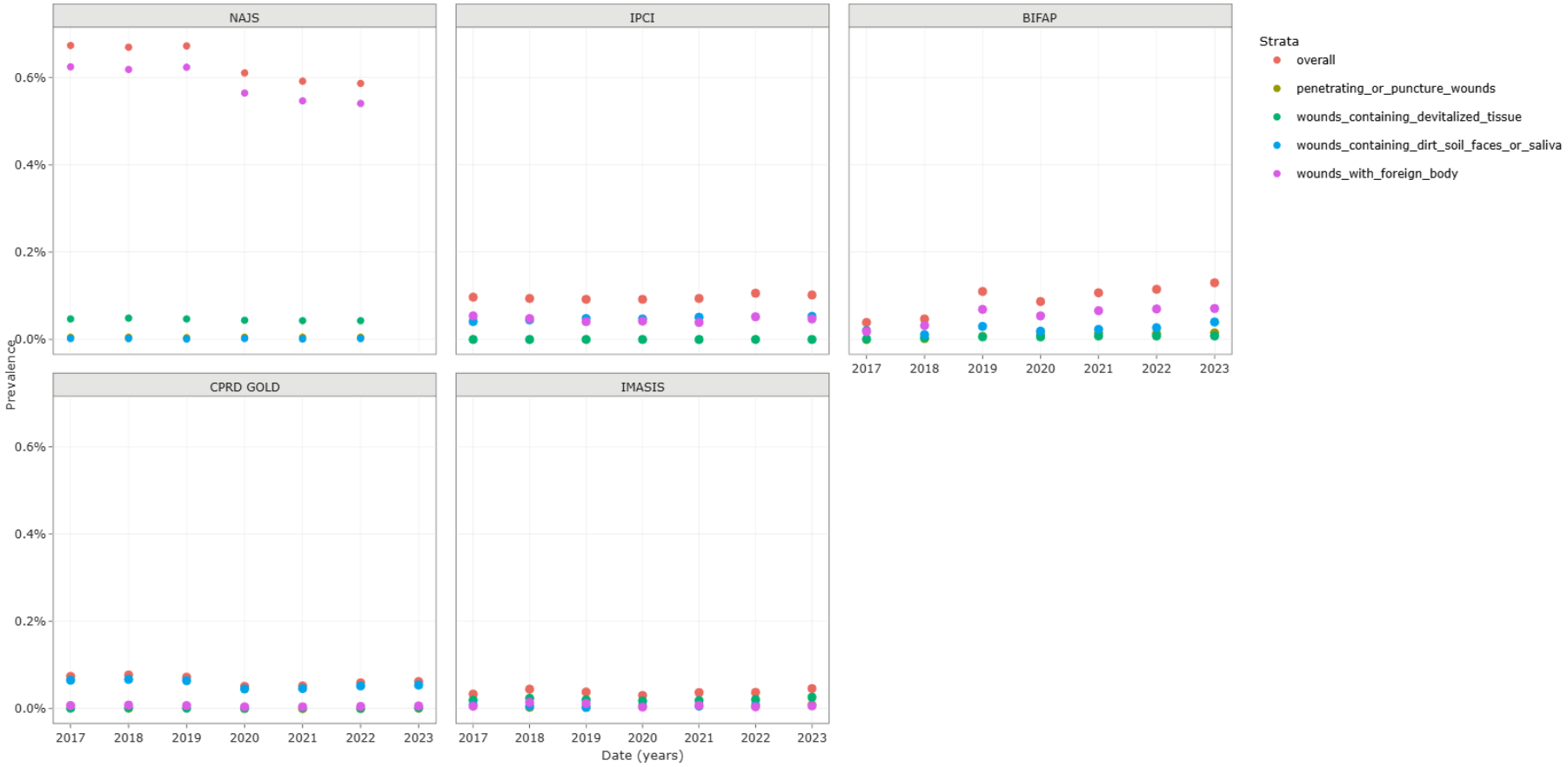

Figure S4. Annual prevalence of probable high-risk tetanus-prone wounds that involved antibiotic treatment or a wound procedure, among the study population, during the study period, per wound type per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

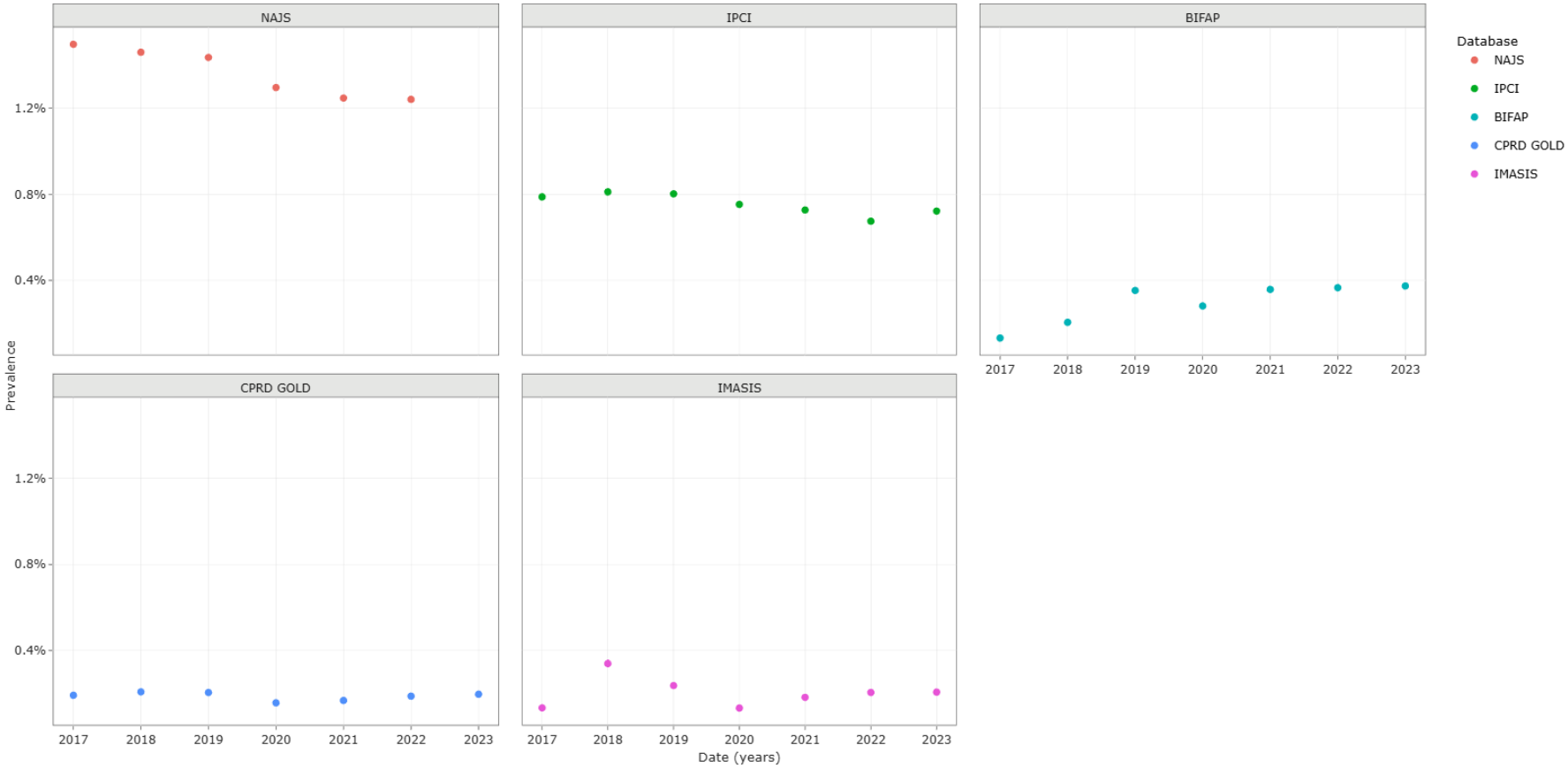

Figure S5. Annual prevalence of probable high-risk tetanus-prone wounds, among the study population, during the study period, per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.

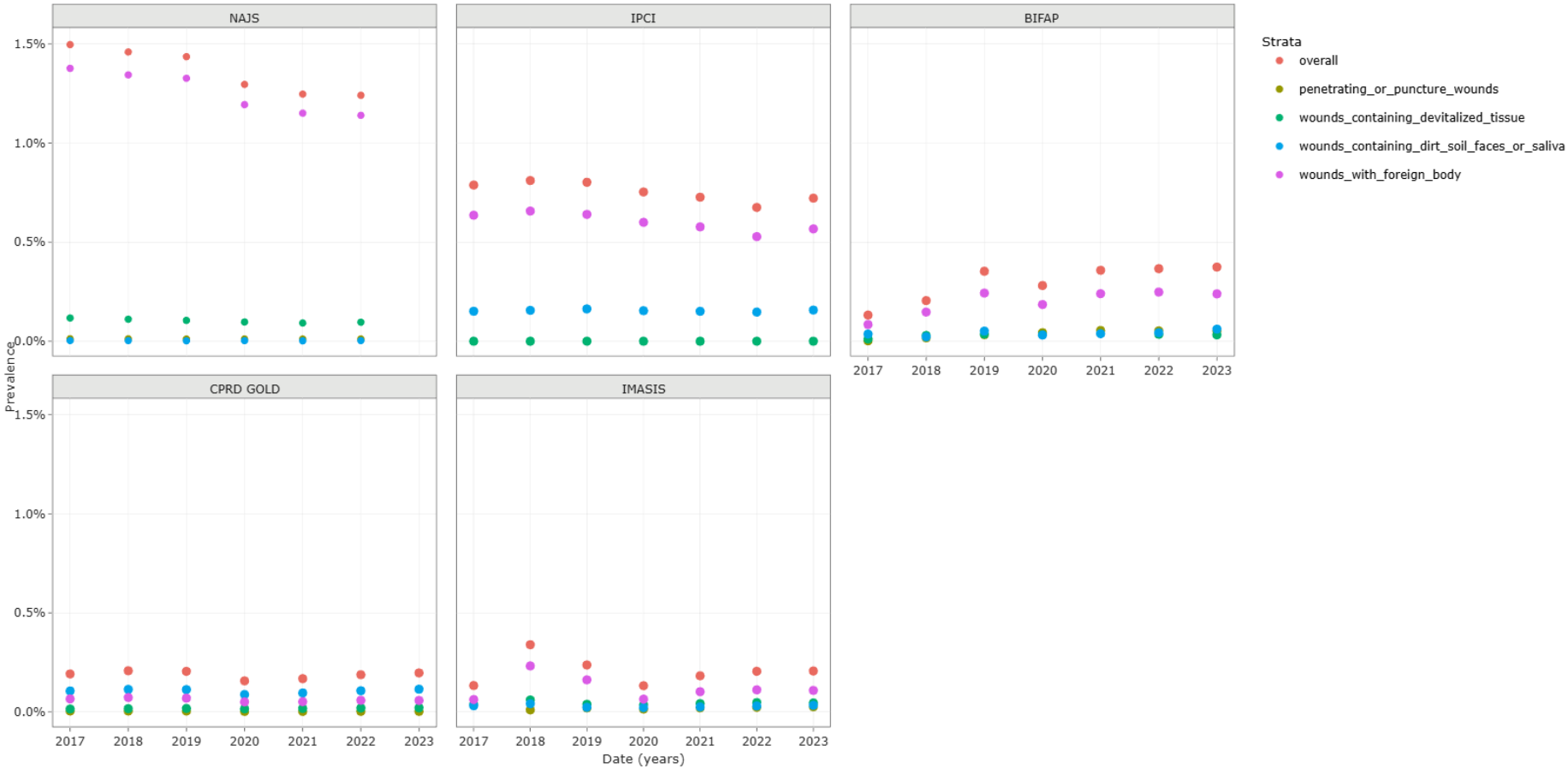

Figure S6. Annual prevalence of probable high-risk tetanus-prone wounds, among the study population, during the study period, per wound type per data source.

BIFAP = Base de datos para la Investigación Farmacoepidemiológica en el Ámbito Público; CPRD GOLD = Clinical Practice Research Datalink GOLD; IMASIS = Institut Municipal Assistència Sanitària Information System; IPCI = Integrated Primary Care Information; NAJS = Croatian National Public Health Information System.