

Supplementary Material

Figure S1. Medical record extraction form for dermatologic events.

Dermatologic

STUDY ID Patient initials Adjudicator's initials

Chart review date Check box if adjudicator is BLIND to patient's use of osteoporosis medications

CASE CONFIRMATION STATUS (REQUIRED)
 1= DEFINITE CASE, 0=DEFINITE NONCASE;
 8=PROBABLE CASE; 9=CANNOT DETERMINE

DEFINITE OR PROBABLE (CASE CONFIRMATION STATUS = 1 OR 8) PLEASE FILL THE FIELDS BELOW

If definite/probable, date of diagnosis

Was dermatologic event the primary reason for hospitalization/ER/visit? (1=yes, 0=no, 9=unable to determine. IF NOT CONFIRMED ENTER=9)

If unknown primary or not, please explain

Which of the following was used to confirm the case? (please check all that apply)

Clear indication in treating physician's notes

Text description/narrative

Laboratory test results

Symptoms

Please specify symptoms (free text)

Diagnostic (ICD-10) code

List one specific code (e.g., E835)

Was any of the following specific subtypes diagnosed?

Erythema multiforme

Stevens-Johnson syndrome

Toxic epidermal necrolysis

Bullous adverse event

Serious erythematous adverse event

Other dermatologic adverse event

Specify (free text)

Treatment with the following medications (please check all that apply)

Steroids

Antihistamines

Other medications

Specify other medications (free text)

Clinical diagnosis that confirmed the case (free text)

Department/specialist whose records confirmed the case (select from list)

If not listed, specify (free text)

Setting in which case was diagnosed (select)

If case is NOT CONFIRMED (CASE CONFIRMATION STATUS = 0 OR 9), PLEASE FILL THE FIELDS IN THE BLUE FRAME otherwise leave blank

Dermatologic event was secondary to another condition

Specify the condition (free text)

Patient was given an alternative diagnosis

Specify the alternative diagnosis (free text)

Coding error

Was information sufficient for adjudication? (1=yes, 0=no)

If insufficient, what information was missing? (free text)

Please provide a BRIEF narrative of the case (in English) ONLY if not reflected by structured data

Figure S2. Medical record extraction form for hypersensitivity

Hypersensitivity

STUDY ID Patient's initials

Date of adjudication Adjudicator's initials

Check box if adjudicator is BLIND to patient's use of osteoporosis medications

CASE CONFIRMATION STATUS (REQUIRED) 1= DEFINITE CASE, 0=DEFINITE NONCASE; 8=PROBABLE CASE; 9=CANNOT DETERMINE

IF DEFINITE OR PROBABLE (CASE CONFIRMATION STATUS = 1 OR 8) PLEASE FILL THE FIELDS BELOW

Date of diagnosis, if definite/probable case

Was hypersensitivity the primary reason for hospitalization/ER/visit? (1=yes, 0=no, 9=unable to determine. IF NOT CONFIRMED ENTER=9)

If unknown whether primary or not, explain

Which of the following was used to confirm the case? (please check all that apply)

Clear indication in treating physician's notes

Text statement/narrative

Laboratory test results

Diagnostic (ICD-10) code

List specific ICD-10 code (e.g., E835)

Did patient have any of the following? (please check all that apply)

Acute onset of symptoms (minutes or hours)

Specify symptoms (free text)

Low blood pressure

Was there a known allergen?

Specify the allergen

Eosinophilia

Arthropathy

Anaphylaxis

Other type of hypersensitivity reaction

Specify other hypersensitivity reaction (free text)

Were the following medications administered? Please check all that apply

Epinephrine

Antihistamines

Corticosteroids

Beta-agonists

What clinical diagnosis confirmed the case?

Department/specialist clinic whose records confirmed the case

Specify department if not listed

Setting in which case was diagnosed (select from list)

If case is NOT CONFIRMED (CASE CONFIRMATION STATUS = 0 OR 9), PLEASE FILL THE FIELDS IN THE BLUE FRAME otherwise leave blank

Hypersensitivity was secondary to another condition

Specify the condition

Patient was given an alternative diagnosis

Specify alternative diagnosis

Coding error

Was information sufficient for adjudication?

If not sufficient, what information was missing?

Brief narrative of the case (in English) ONLY if not reflected by structured data

Table S1. Case algorithm for osteoporosis diagnosis

ICD-10 Code	Description
M80, M81, M82	Osteoporosis
Case Algorithm for Osteoporotic Fracture Diagnosis defined by any of the following:	
Denmark:	
S72.x*, S52.x, S12.0, S12.1, S12.2, S12.7, S12.9, S22.0, S22.1, S32.x, S42.2, S42.3, S42.4, S42.7, S42.8, T08	Fracture of hip, radius/ulna, spine, pelvis, femur or humerus. The supplementary character positions which indicate open fractures are not used in Denmark.
Sweden:	
S72.x, S52.x, S12.0, S12.1, S12.2, S12.7, S12.9, S22.0, S22.1, S32.x, S42.2, S42.3, S42.4, S42.7, S42.8, T08	Fracture of hip, radius/ulna, spine, pelvis, femur or humerus, excluding open fractures whenever possible
Excluding	
S72.x1, S52.01, S52.11, S52.21, S52.31, S52.41, S52.71, S52.81, S52.91, S12.01, S12.11, S12.21, S12.71, S12.91, S22.01, S22.11, S32.x1, S42.21, S42.31, S42.41, S42.71, S42.81	
Note: One of the above codes for osteoporotic fracture diagnosis AND no concurrent major trauma NOMESCO codes (for Denmark) or ICD-10 trauma codes (Sweden)	
NOMESCO codes (Denmark)	Descriptions
EUP2-EUP9	Mode of transport: bicycle, moped, motorcycle, motor scooter, passenger car, van, pickup truck, lorry, truck, bus, other specified and unspecified
EUM2-EUM9	
EUHE01-EUHE09	Falls, all other than falls on the same level
AUHG02, EUHB, EUHC, EUHD	Other accidents: Contact or collision with animal; collapse, breakage and deformation of material; malfunction and loss of control of machinery, equipment and materials; malfunction and loss of control of transport vehicle machinery
ICD-10 codes (Sweden)	Descriptions
V01-V99	Transport accidents
W02, W04-W17, W19	Falls, all other than falls on the same levels

W20-W49 Accidents due to exposure to inanimate mechanical forces

W50-W64 Accidents due to exposure to animate mechanical forces

Case Algorithm for Osteoporosis Medications:

ATC Code	ATC Description
M05BA, M05BB	Bisphosphonate prescription
G03XC01	Raloxifene
M05BX01	Ipriflavone
M05BX03	Strontium ranelate
M05BX04	Denosumab
H05AA	Teriparatide or parathyroid hormone
H05BA	Calcitonin
Treatment Code (DK only)	Description
BWHB40, BWHB40A	Treatment with bisphosphonates in hospital

Note: ^a x indicates any digit from 0 - 9 available in the coding system

Table S2. Algorithm for exclusion criteria among postmenopausal osteoporotic women

Diagnosis	Code Type	Codes and Descriptions^b
Cancer diagnosis (excluding non-melanoma skin cancer) ^a	ICD-10 in the National Registries of Patients	C00xx – C43xx, C45xx – C97xx
Paget’s disease	ICD-10 in the National Registries of Patients	M88.xx

Notes: ^aOutpatient or discharge diagnosis; ^b This algorithm includes codes for secondary (metastatic) malignancies.

Table S3. Diagnoses used to identify dermatologic events leading to hospitalization or emergency room visits.

ICD-10 Code	Description
L10xx	Pemphigus
L12xx	Pemphigoid
L13xx	Other bullous disorders
L14xx	Bullous disorders in diseases classified elsewhere
L50xx	Urticaria
L511x	Bullous erythema multiforme
L512x	Toxic epidermal necrolysis [Lyell]
L518x	Other erythema multiforme
L519x	Erythema multiforme, unspecified
L538x	Other specified erythematous condition
R21xx	Rash and other nonspecific skin eruption
Bullous events	
L10xx	Pemphigus
L12xx	Pemphigoid
L13xx	Other bullous disorders
L14xx	Bullous disorders in diseases classified elsewhere
Erythematous events	
L511x	Bullous erythema multiforme
L512x	Toxic epidermal necrolysis [Lyell]
L518x	Other erythema multiforme
L519x	Erythema multiforme, unspecified
L538x	Other specified erythematous condition
Other dermatologic events	
L50xx	Urticaria
R21xx	Rash and other nonspecific skin eruption

Table S4. Diagnoses used to identify hypersensitivity leading to hospitalization or emergency room visits.

ICD-10 Code	Description
D721x	Eosinophilia (Eosinophilia: allergic, hereditary)
M364x	Arthropathy in hypersensitivity reactions classified elsewhere
M022x	Postimmunization arthropathy
T782x	Anaphylactic shock, unspecified
T886x	Anaphylactic shock due to adverse effect of correct drug or medicament properly administered
T887x	Unspecified adverse effect of drug or medicament
T784x	Allergy, unspecified
Anaphylaxis Diagnosis Codes	
T886x	Anaphylactic shock due to adverse effect of correct drug or medicament properly administered
T782x	Anaphylactic shock, unspecified
Other hypersensitivity events	
D721x	Eosinophilia (Eosinophilia: allergic, hereditary)
M364x	Arthropathy in hypersensitivity reactions classified elsewhere
M022x	Postimmunization arthropathy
T887x	Unspecified adverse effect of drug or medicament
T784x	Allergy, unspecified