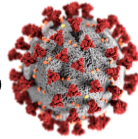


EVENT DEFINITION FORM

Event: Anaphylaxis
Outcome/covariate: **outcome**
Version: 1
Status: *Final*

Contributing authors

authors	Expertise	Date
Ilse Kelters (UMCU)	Medical	June 2020
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Code review		August 2020
Leila Belbachir	Medical review	23-08-2020
Miriam Sturkenboom	Final codes	14-2-2021
Carlos Durán	Rev. narrow/possible assignment	29-03-2021
Miriam Sturkenboom	Inclusion of codes used in final ACCESS report	23-08-2021



1. Event definition

Brighton Collaboration (2007) has developed a case definition and guideline for data collection, analysis, and presentation for anaphylaxis. For the article [click here](#).

Case definition of anaphylaxis (Rüggeberg, *et al.*)

For all levels of diagnostic certainty

Anaphylaxis is a clinical syndrome characterized by

- sudden onset AND
- rapid progression of signs and symptoms AND
- involving multiple (≥ 2) organ systems, as follows

Level 1 of diagnostic certainty

- ≥ 1 major dermatological AND
- ≥ 1 major cardiovascular AND/OR ≥ 1 major respiratory criterion

Level 2 of diagnostic certainty

- ≥ 1 major cardiovascular AND ≥ 1 major respiratory criterion OR
- ≥ 1 major cardiovascular OR respiratory criterion AND
- ≥ 1 minor criterion involving ≥ 1 different system (*other than* cardiovascular or respiratory systems) OR
- (≥ 1 major dermatologic) AND (≥ 1 minor cardiovascular AND/OR minor respiratory criterion)

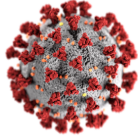
Level 3 of diagnostic certainty

- ≥ 1 minor cardiovascular OR respiratory criterion AND
 - ≥ 1 minor criterion from each of ≥ 2 different systems/ categories
-

The case definition should be applied when there is no clear alternative diagnosis for the reported event to account for the combination of symptoms.

Case definition 2 (Sampson, *et al.*)

An expert panel in the second symposium (2005) on the definition and management of anaphylaxis, including Second National Institute of Allergy and Infectious disease and the Food Allergy and Anaphylaxis Network, agreed on the following diagnostic criteria.

**TABLE I.** Clinical criteria for diagnosing anaphylaxis

Anaphylaxis is highly likely when any one of the following 3 criteria are fulfilled:

1. Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (eg, generalized hives, pruritus or flushing, swollen lips-tongue-uvula)
AND AT LEAST ONE OF THE FOLLOWING
 - a. Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, hypoxemia)
 - b. Reduced BP or associated symptoms of end-organ dysfunction (eg, hypotonia [collapse], syncope, incontinence)
 2. Two or more of the following that occur rapidly after exposure to a *likely allergen for that patient* (minutes to several hours):
 - a. Involvement of the skin-mucosal tissue (eg, generalized hives, itch-flush, swollen lips-tongue-uvula)
 - b. Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, hypoxemia)
 - c. Reduced BP or associated symptoms (eg, hypotonia [collapse], syncope, incontinence)
 - d. Persistent gastrointestinal symptoms (eg, crampy abdominal pain, vomiting)
 3. Reduced BP after exposure to *known allergen for that patient* (minutes to several hours):
 - a. Infants and children: low systolic BP (age specific) or greater than 30% decrease in systolic BP*
 - b. Adults: systolic BP of less than 90 mm Hg or greater than 30% decrease from that person's baseline
-

PEF, Peak expiratory flow; *BP*, blood pressure.

*Low systolic blood pressure for children is defined as less than 70 mm Hg from 1 month to 1 year, less than (70 mm Hg + [2 × age]) from 1 to 10 years, and less than 90 mm Hg from 11 to 17 years.

Case definition 3 (NICE Clinical Guidelines UK no 134)

World Allergy Organization Anaphylaxis Committee, 2019 (turner *et al.*).

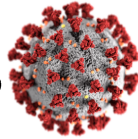


TABLE I. Amended criteria for the diagnosis of anaphylaxis, proposed by the World Allergy Organization Anaphylaxis Committee, 2019⁶³

Anaphylaxis is highly likely when any 1 of the following 2 criteria is fulfilled:

1. Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (eg, generalized hives, pruritus or flushing, and swollen lips-tongue-uvula)

And at least 1 of the following:

a. Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, and hypoxemia)

b. Reduced BP or associated symptoms of end-organ dysfunction (eg, hypotonia [collapse], syncope, and incontinence)

c. Severe gastrointestinal symptoms (eg, severe crampy abdominal pain and repetitive vomiting), especially after exposure to nonfood allergens

2. Acute onset of hypotension* or bronchospasm or laryngeal involvement† after exposure to a known or highly probable allergen for that patient (minutes to several hours‡), even in the absence of typical skin involvement

BP, Blood pressure; PEF, peak expiratory flow.

*Hypotension defined as a decrease in systolic BP >30% from that person's baseline, OR

i. Infants and children younger than 10 y: systolic BP <(70 mm Hg + [2 × age in years])

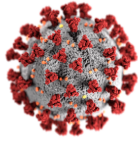
ii. Adults: systolic BP <90 mm Hg.

†Laryngeal symptoms include stridor, vocal changes, and odynophagia.

‡Most allergic reactions occur within 1 to 2 h of exposure, and usually much quicker. Reactions may be delayed for some food allergens (eg, galactosyl- α -(1,3)-galactose) or in the context of immunotherapy, occurring up to 10 h after ingestion.

Summary different definitions (extracted from Turner *et al.*)

Turner et al (2020)	"Anaphylaxis is a serious systemic hypersensitivity reaction that is usually rapid in onset and may cause death. Severe anaphylaxis is characterized by potentially life-threatening compromise in breathing and/or the circulation, and may occur without typical skin features or circulatory shock being present."
WAO, Simons et al (2011)	"A serious life-threatening generalized or systemic hypersensitivity reaction. A serious allergic reaction that is rapid in onset and might cause death."
EAACI, Panesar (2013)	"A severe life-threatening generalized or systemic hypersensitivity reaction. An acute, potentially fatal, multi-organ system, allergic reaction"
AAAAI/ACAAI, Lieberman (2010)	"An acute life-threatening systemic reaction with varied mechanisms, clinical presentations, and severity that results from the sudden release of mediators from mast cells and basophils."
ASCIA, Brown (2006)	"Anaphylaxis is a serious, rapid-onset, allergic reaction that may cause death. Severe anaphylaxis is characterized by life-threatening upper airway obstruction, bronchospasm and/or hypotension."
NIAID, Sampson (2006)	"Anaphylaxis is a serious allergic reaction that involves more than one organ system (for example, skin, respiratory tract, and/or



	gastrointestinal tract). It can begin very rapidly, and symptoms may be severe or life-threatening..”
WHO ICD-11	“Anaphylaxis is a severe, life-threatening systemic hypersensitivity reaction characterized by being rapid in onset with potentially life-threatening airway, breathing, or circulatory problems and is usually, although not always, associated with skin and mucosal changes.”
ASCIA (Australasian)	“Any acute onset illness with typical skin features (urticarial rash or erythema/flushing, and/or angioedema), PLUS involvement of respiratory and/or cardiovascular and/or persistent severe gastrointestinal symptoms; or; Any acute onset of hypotension or bronchospasm or upper airway obstruction where anaphylaxis is considered possible, even if typical skin features are not present.” (So cutaneous signs/symptoms need to be present in the first criteria)

2. Synonyms / lay terms for the event

Anaphylaxis

Anaphylactic reaction

Anaphylactoid reaction

Anaphylactic shock

Severe allergic reaction

Allergic reaction with involvement of several organ systems e.g. cardio-respiratory signs

Vaccin allergy

Adverse reactions to vaccins/toxins

IgE-mediated hypersensitivity

Type I hypersensitivity

Allergic shock

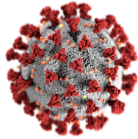
3. Laboratory tests that are specific for event

There is no point-of-care test to confirm the clinical impression. Plasma histamine and tryptase levels in serum are elevated in respectively 30 to 60 and 60 to 90 minutes, thus not applicable in the acute emergency department setting. This lack of a confirmatory test impacts diagnosis, treatment, research on outcomes, risk factors, natural course, pathogenic and immunologic mechanisms, and epidemiology of anaphylaxis (Lieberman *et al.*).

Only if no obvious trigger is identified, disorders mimicking anaphylaxis are present, such as asthma, vocal cord dysfunction, syncope or flushing syndromes (Chu, *et al.*). Then testing to evaluate those other etiologies is reasonable (Lieberman *et al.*).

- Evaluation of alfa-gal IgE. This reaction is delayed typically by 3 to 6 hours.
- Mast cell tryptase testing. Serum or plasma tryptase level to rule out clonal mast cell disorders. The turnaround time of this test is in order of days. (significant increase defined as $1.2 \times$ baseline serum tryptase level [ng/mL or mg/L]).

So, laboratory tests are supportive of the diagnosis and time sensitive to obtain, of which the most widely available is measurement of serum or plasma tryptase level. The latter must be drawn within 3 hours of a reaction and peaks after 30 to 90 minutes. Because the turnaround time of this test is in the order of days, it is most useful to retrospectively confirm whether or not a significant immediate hypersensitivity event mediated by mast cell activation occurred (significant



increase defined as 1.2 × baseline serum tryptase level [ng/mL or mg/L] 1 2). This test is particularly useful when disorders mimicking anaphylaxis are present, such as asthma, vocal cord dysfunction, syncope, or flushing syndromes (copied from Chu *et al.*)

4. Diagnostic tests that are specific for event

Physical examination:

Respiratory/chest features (most common in children)

- Persistent cough
- Wheeze
- Tongue swelling
- Stridor
- Hoarse voice or change in character of the cry
- Subjective feeling of swelling or tightness/tingling in the throat
- Dysphagia

Cardiovascular features

- Pale and floppy (infant)
- Palpitations
- Tachycardia
- Bradycardia
- Hypotension
- Collapse with or without unconsciousness
- Cardiac arrest

Neurological features

- Headache (usually throbbing)
- Dizziness
- Altered consciousness/confusion

Gastrointestinal features

- Nausea
- Vomiting
- Diarrhoea
- Abdominal/pelvic pain

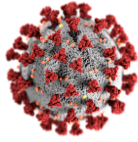
Dermatological features

- Urticarial rash
- Erythema/flushing
- Angioedema

5. Drugs that are used to treat event

Resuscitation Council (UK) (last reviewed 2016), EAACI Anaphylaxis guidelines (2013)

- Epinephrine/Adrenaline intramuscular
- High flow oxygen
- IV fluid challenge: crystalloids (boluses of 20ml/kg)
- Antihistamines: chlorphenamine intramuscular
- Glucocorticosteroids: hydrocortisone intramuscular



- Monitor: pulse oximetry, ECG, blood pressure
- Bronchodilators: salbutamol, iprapropium, aminophylline or magnesium
- Other vasopressors and inotropes (if adrenaline alone is not sufficient enough): noradrenaline, vasopressin, metaraminol and glucagon (in particular patient with beta-blockers).

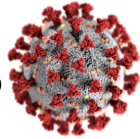
6. Procedures used specific for event treatment

When patients are haemodynamically unstable, different procedures are used:

- Intubation
- Providing iv access
- High flow oxygen
- CPR

7. Setting (outpatient specialist, in-hospital, GP, emergency room) where condition will be most frequently /reliably diagnosed

Out of hospital, emergency room, in-hospital (drug-induced)



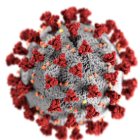
8. Diagnosis codes or algorithms used in different papers to extract the events in Europe/USA: seek literature for papers that have studied this event, and see how they extracted/measured

Table 1

List of Selected Allergy-Specific Reimbursement Codes Employed to Detect Anaphylaxis in Administrative Claims Databases^a

General allergy codes used in detection of anaphylaxis		
ICD-9-CM	Code description	ICD-10-CM
995.0	Anaphylactic shock, unspecified	T78.2XX
995.3	Allergy, unspecified	T78.40XX and T78.49XX
995.1	Angioneurotic edema	T78.3XX
708.9	Urticaria	L50.0-L50.9
519.11	Acute bronchospasm	J98.01
786.1	Stridor	R06.1
458.9	Hypotension	I95.89
Codes used in detection of food anaphylaxis		
ICD-9-CM	Code description	ICD-10-CM
693.1	Dermatitis due to food	L27.2
995.60	Anaphylactic shock or reaction due to unspecified food	T78.0XX
995.61	Anaphylactic shock or reaction due to peanuts	T78.01XX
995.62	Anaphylactic shock or reaction due to crustaceans	T78.02XX
995.63	Anaphylactic shock or reaction due to fruits and vegetables	T78.04XX
995.64	Anaphylactic shock or reaction due to tree nuts and seeds	T78.05XX
995.65	Anaphylactic shock or reaction due to fish	T78.03XX
995.66	Anaphylactic shock or reaction due to food additives	T78.06XX
995.67	Anaphylactic shock or reaction due to milk products	T78.07XX
995.68	Anaphylactic shock or reaction due to eggs	T78.08XX
995.69	Allergy due to other unspecified food	T78.09XX
Codes used in detection of insect sting anaphylaxis		
ICD-9-CM	Code description	ICD-10-CM
989.5	Toxic effect of venom or other arthropods	T63.4XX
Codes used in detection of drug or product anaphylaxis		
ICD-9-CM	Code description	ICD-10-CM
*	Anaphylactic shock to drug	T88.6XXX
999.4	Anaphylactic shock to serum	T80.5XX
995.4	Shock due to anesthesia	T88.2XX
693.0	Dermatitis due to drug	L27.0
Codes used in detection of other causes of anaphylaxis		
ICD-9-CM	Code description	ICD-10-CM
	Toxic effect of latex	T65.811-4XX
	Anaphylaxis to food additives (such as sulfite)	T59.1XX
	Anaphylaxis to immunizations	T80.5XX and T88.1XX
CPT	Procedure specific codes	HCCPS
92950	Cardiopulmonary resuscitation	
	Administration of epinephrine	J0170 and J0170

From: Tuttle *et al.* 2020



Codes used for VAESCO Report on Background rates (ECDC, 2009)

anaphylaxis unspecified causes

READ-CPRD: SN50.00

ICD-9: 995.0

ICD-10: T78.2, T782

ICPC: A12, A99

Anaphylaxis known causes (bee's etc)

READ-CPRD: SN59300, SN59400, SN50100, SN50000,

SP34.00

ICD-9: 995.2, 995.3, 995.4, 995.6, 999.8, 999.4

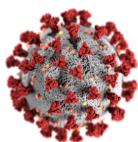
ICD-10: T80.5, T78.0, T805, T88.6

ICPC : A84, A85

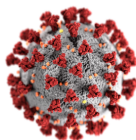
Recommendation was to combine them because of lack of granularity in some

9. Codes used in ACCESS

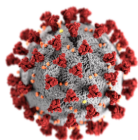
Coding system	Code	Code name	Concept	Concept name	Algorithm
ICD10/CM	I95	Hypotension	C0020649	Hypotension	Possible
ICD10/CM	L50.0	Allergic urticaria	C0149526	Allergic urticaria	Possible
ICD10/CM	R23.0	Cyanosis	C0010520	Cyanosis	Possible
ICD10/CM	R57.9	Shock, unspecified	C0036974	Shock	Possible
ICD10/CM	R60.9	Oedema, unspecified	C0013604	Edema	Possible
ICD10/CM	T78.0	Anaphylactic shock due to adverse food reaction	C0685898	Food anaphylaxis	Narrow
ICD10/CM	T78.2	Anaphylactic shock			narrow
ICD10/CM	T78.2XXA	Anaphylactic shock, unspecified, initial encounter	C2886701	Anaphylactic shock, unspecified, initial encounter	Narrow
ICD10/CM	T78.2XXA	Anaphylactic shock, unspecified, initial encounter	C2886701	Anaphylactic shock, unspecified, initial encounter	Narrow
ICD10/CM	T78.2XXD	Anaphylactic shock, unspecified, subsequent encounter	C2886702	Anaphylactic shock, unspecified, subsequent encounter	Narrow
ICD10/CM	T78.2XXS	Anaphylactic shock, unspecified, sequela	C2886703	Anaphylactic shock, unspecified, sequela	Narrow
ICD10/CM	T78.3	Angioneurotic oedema	C0002994	Angioedema	Possible
ICD10/CM	T78.4	Allergy, unspecified	C0020517	Hypersensitivity	Possible
ICD10/CM	T80.5	Anaphylactic shock due to serum	C0161840	Anaphylactic transfusion reaction	Narrow
ICD10/CM	T88.6	Anaphylactic shock due to adverse	C0274304	Anaphylactic shock, due to adverse	Narrow



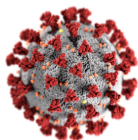
		effect of correct drug or medicament properly administered		effect of correct medicinal substance properly administered	
ICD10/CM	H05.223	Periorbital oedema			Possible
ICD9CM	458	Hypotension	C0020649	Hypotension	Possible
ICD9CM	458.9	Hypotension, unspecified	C0020649	Hypotension	Possible
ICD9CM	708.0	Allergic urticaria	C0149526	Allergic urticaria	Possible
ICD9CM	782.3	Edema	C0013604	Edema	Possible
ICD9CM	782.5	Cyanosis	C0010520	Cyanosis	Possible
ICD9CM	785.50	Shock, unspecified	C0036974	Shock	Possible
ICD9CM	995.0	Other anaphylactic reaction	C3161335	Other anaphylactic reaction	Narrow
ICD9CM	995.2	Other and unspecified adverse effect of drug, medicinal and biological substance	C2921193	Other and unspecified adverse effect of drug, medicinal and biological substance	Possible
ICD9CM	995.3	Allergy, unspecified, not elsewhere classified	C0700625	Allergy, unspecified, NEC in ICD9CM	Possible
ICD9CM	995.4	Shock due to anesthesia, not elsewhere classified	C0812420	Shock due to anesthesia, NEC in ICD9CM_2013_2012_08_06	Possible
ICD9CM	995.6	Anaphylactic reaction due to food	C0685898	Food anaphylaxis	Narrow
ICD9CM	999.49	anaphylactic shock			narrow
ICD9CM	999.42	Anaphylactic reaction due to vaccination			narrow
ICD9CM	376.33	Periorbital oedema			Possible
ICPC	A12	Allergy/allergic reaction NOS	C0020517	Hypersensitivity	Possible
ICPC	A12.01				Narrow
ICPC2P	A12001	Anaphylaxis;non medication	C0850803	Anaphylaxis (non medication)	Narrow
ICPC2P	A12001	Anaphylaxis;non medication	C0850803	Anaphylaxis (non medication)	Narrow
ICPC2P	A12002	Angioneurotic edema	C0002994	Angioedema	Possible
ICPC2P	A12004	Shock;anaphylactic	C0002792	anaphylaxis	Narrow
ICPC2P	A12007	Allergic reaction	C0020517	Hypersensitivity	Possible
ICPC2P	A12007	Allergic reaction	C0020517	Hypersensitivity	Possible
ICPC2P	A12009	Allergy	C0020517	Hypersensitivity	Possible
ICPC2P	A12009	Allergy	C0020517	Hypersensitivity	Possible
ICPC2P	A92005	Shock;anaphylactic	C0002792	anaphylaxis	Narrow
ICPC2P	A92007	Allergic reaction	C0020517	Hypersensitivity	Possible
ICPC2P	A92007	Allergic reaction	C0020517	Hypersensitivity	Possible
ICPC2P	A92008	Allergy	C0020517	Hypersensitivity	Possible



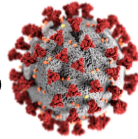
ICPC2P	A92008	Allergy	C0020517	Hypersensitivity	Possible
ICPC2P	A92010	Oedema;angioneurotic	C0002994	Angioedema	Possible
ICPC2P	A92012	Anaphylaxis;non medication	C0850803	Anaphylaxis (non medication)	Narrow
ICPC2P	A92012	Anaphylaxis;non medication	C0850803	Anaphylaxis (non medication)	Narrow
ICPC2P	D20021	Swollen;lip	C0240211	Lip swelling	Possible
ICPC2P	K07003	Dropsy	C0013604	Edema	Possible
ICPC2P	K29005	Cyanosis	C0010520	Cyanosis	Possible
ICPC2P	K29022	Low;blood pressure	C0020649	Hypotension	Possible
ICPC2P	K88001	Low;blood pressure	C0020649	Hypotension	Possible
ICPC2P	K88006	Hypotension	C0020649	Hypotension	Possible
ICPC2P	S04006	Swollen;face	C0151602	Facial swelling	Possible
ICPC2P	S08011	Cyanosis	C0010520	Cyanosis	Possible
RCD2	16J5.	Facial swelling	C0151602	Facial swelling	Possible
RCD2	183..	Oedema	C0013604	Edema	Possible
RCD2	183Z.	Oedema NOS	C0013604	Edema	Possible
RCD2	G87..	Hypotension	C0020649	Hypotension	Possible
RCD2	G87z.	Hypotension NOS	C0020649	Hypotension	Possible
RCD2	M28..	Urticaria	C0002994	Angioedema	Possible
RCD2	M280.	Allergic urticaria	C1298697	Anaphylactic urticaria	Narrow
RCD2	M280.	Allergic urticaria	C1298697	Anaphylactic urticaria	Narrow
RCD2	M280.	Allergic urticaria	C0149526	Allergic urticaria	Possible
RCD2	R023.	[D]Oedema	C0013604	Edema	Possible
RCD2	R0232	[D]Dropsy	C0013604	Edema	Possible
RCD2	R023z	[D]Oedema NOS	C0013604	Edema	Possible
RCD2	R025.	[D]Cyanosis	C0010520	Cyanosis	Possible
RCD2	R0550	[D]Failure/peripheral circul.	C0036974	Shock	Possible
RCD2	SN50.	Anaphylactic shock	C0002792	anaphylaxis	Narrow
RCD2	SN50.	Anaphylactic shock	C0340865	Anaphylactoid reaction	Narrow
RCD2	SN50.	Anaphylactic shock	C0340865	Anaphylactoid reaction	Narrow
RCD2	SN50.	Anaphylactic shock	C0340865	Anaphylactoid reaction	Narrow
RCD2	SN500	Anaphyl shck/advers food react	C0685898	Food anaphylaxis	Narrow
RCD2	SN500	Anaphyl shck/advers food react	C0685898	Food anaphylaxis	Narrow
RCD2	SN500	Anaphyl shck/advers food react	C0685898	Food anaphylaxis	Narrow
RCD2	SN501	Ana s d/ad ef/c drg o md prp a	C0274304	Anaphylactic shock, due to adverse effect of correct medicinal substance properly administered	Narrow



RCD2	SN501	Ana s d/ad ef/c drg o md prp a	C0274304	Anaphylactic shock, due to adverse effect of correct medicinal substance properly administered	Narrow
RCD2	SN51.	Angioneurotic oedema	C0002994	Angioedema	Possible
RCD2	SN53.	Allergy, unspecified	C0020517	Hypersensitivity	Possible
RCD2	SN53.	Allergy, unspecified	C0020517	Hypersensitivity	Possible
RCD2	SN530	Allergic reaction	C0020517	Hypersensitivity	Possible
RCD2	SN530	Allergic reaction	C0020517	Hypersensitivity	Possible
RCD2	SP34.	Anaphylact.shock due to serum	C0161840	Anaphylactic transfusion reaction	Narrow
RCD2	SP34.	Anaphylact.shock due to serum	C0161840	Anaphylactic transfusion reaction	Narrow
SCTSPA	3415004	cianosis	C0010520	Cyanosis	Possible
SCTSPA	10803007	reacción de Jarisch Herxheimer	C0259756	Jarisch Herxheimer reaction	Possible
SCTSPA	12263007	respuesta de hipersensibilidad tipo 1	C0429892	Type 1 hypersensitivity response	Possible
SCTSPA	20741006	hidropesía	C0013604	Edema	Possible
SCTSPA	21957007	reacción alérgica	C0020517	Hypersensitivity	Possible
SCTSPA	21957007	reacción alérgica	C0020517	Hypersensitivity	Possible
SCTSPA	27942005	choque	C0036974	Shock	Possible
SCTSPA	35001004	reacción anafilactoide	C0340865	Anaphylactoid reaction	Narrow
SCTSPA	35001004	reacción anafilactoide	C0340865	Anaphylactoid reaction	Narrow
SCTSPA	35001004	reacción anafilactoide	C0340865	Anaphylactoid reaction	Narrow
SCTSPA	39579001	anafilaxia	C0002792	anaphylaxis	Narrow
SCTSPA	40178009	urticaria alérgica	C0149526	Allergic urticaria	Possible
SCTSPA	41291007	angioedema	C0002994	Angioedema	Possible
SCTSPA	45007003	hipotensión arterial	C0020649	Hypotension	Possible
SCTSPA	79337003	reacción anafiláctica a una transfusión	C0161840	Anaphylactic transfusion reaction	Narrow
SCTSPA	79337003	reacción anafiláctica a una transfusión	C0161840	Anaphylactic transfusion reaction	Narrow
SCTSPA	79654002	edema	C0013604	Edema	Possible
SCTSPA	87467006	anafilaxia generalizada	C0002792	anaphylaxis	Narrow
SCTSPA	91232002	hipersensibilidad	C0020517	Hypersensitivity	Possible
SCTSPA	91232002	hipersensibilidad	C0020517	Hypersensitivity	Possible
SCTSPA	91941002	anafilaxia alimentaria	C0685898	Food anaphylaxis	Narrow
SCTSPA	106190000	alergia	C0020517	Hypersensitivity	Possible
SCTSPA	111737003	anafilaxis causada por efecto adverso	C0274304	Anaphylactic shock, due to adverse	Narrow



		secundario al uso correcto de una sustancia medicinal bien administrada s		effect of correct medicinal substance properly administered	
SCTSPA	119419001	cianosis cutánea	C0010520	Cyanosis	Possible
SCTSPA	127072000	trastorno alérgico	C0020517	Hypersensitivity	Possible
SCTSPA	139250008	Edema NOS	C0013604	Edema	Possible
SCTSPA	155490006	hipotensión, SAI	C0020649	Hypotension	Possible
SCTSPA	157758001	Allergic reaction NOS	C0020517	Hypersensitivity	Possible
SCTSPA	161988006	edema, SAI	C0013604	Edema	Possible
SCTSPA	195508000	hipotensión, SAI	C0020649	Hypotension	Possible
SNOMEDCT_US	3415004	Cyanosis	C0010520	Cyanosis	Possible
SNOMEDCT_US	10803007	Jarisch Herxheimer reaction	C0259756	Jarisch Herxheimer reaction	Possible
SNOMEDCT_US	12263007	Type 1 hypersensitivity response	C0429892	Type 1 hypersensitivity response	Possible
SNOMEDCT_US	20741006	Hydrops	C0013604	Edema	Possible
SNOMEDCT_US	21957007	Allergic reaction	C0020517	Hypersensitivity	Possible
SNOMEDCT_US	27942005	Shock	C0036974	Shock	Possible
SNOMEDCT_US	35001004	Anaphylactoid reaction	C0340865	Anaphylactoid reaction	Narrow
SNOMEDCT_US	39579001	Anaphylaxis	C0002792	anaphylaxis	Narrow
SNOMEDCT_US	40178009	Allergic urticaria	C0149526	Allergic urticaria	Possible
SNOMEDCT_US	41291007	Angioedema	C0002994	Angioedema	Possible
SNOMEDCT_US	42265009	Idiopathic angio-oedema-urticaria			possible
SNOMEDCT_US	45007003	Low blood pressure	C0020649	Hypotension	Possible
SNOMEDCT_US	49563000	Periorbital oedema			possible
SNOMEDCT_US	79337003	Anaphylactic transfusion reaction	C0161840	Anaphylactic transfusion reaction	Narrow
SNOMEDCT_US	79654002	Edema	C0013604	Edema	Possible
SNOMEDCT_US	82966003	Quincke's edema	C0002994	Angioedema	Possible
SNOMEDCT_US	87467006	Anaphylactic shock	C0002792	anaphylaxis	Narrow
SNOMEDCT_US	91232002	Hypersensitivity	C0020517	Hypersensitivity	Possible
SNOMEDCT_US	91941002	Food anaphylaxis	C0685898	Food anaphylaxis	Narrow
SNOMEDCT_US	106190000	Allergic state	C0020517	Hypersensitivity	Possible
SNOMEDCT_US	111737003	Allergic shock, due to adverse effect of correct medicinal substance properly administered	C0274304	Anaphylactic shock, due to adverse effect of correct medicinal substance properly administered	Narrow
SNOMEDCT_US	119419001	Cyanosis of skin	C0010520	Cyanosis	Possible
SNOMEDCT_US	127072000	Allergic disorder	C0020517	Hypersensitivity	Possible
SNOMEDCT_US	139250008	Edema NOS	C0013604	Edema	Possible
SNOMEDCT_US	155375008	Dropsy	C0013604	Edema	Possible



SNOMEDCT_US	155487000	Hypotension	C0020649	Hypotension	Possible
SNOMEDCT_US	155490006	Hypotension NOS	C0020649	Hypotension	Possible
SNOMEDCT_US	156428000	Allergic urticaria	C0149526	Allergic urticaria	Possible
SNOMEDCT_US	157754004	Allergic reaction NOS	C0020517	Hypersensitivity	Possible
SNOMEDCT_US	157755003	Systemic anaphylaxis	C0002792	anaphylaxis	Narrow
SNOMEDCT_US	157756002	Angioneurotic edema	C0002994	Angioedema	Possible
SNOMEDCT_US	157758001	Allergic reaction NOS	C0020517	Hypersensitivity	Possible
SNOMEDCT_US	158241008	[D]Edema	C0013604	Edema	Possible
SNOMEDCT_US	158244000	[D]Dropsy	C0013604	Edema	Possible
SNOMEDCT_US	158247007	[D]Edema NOS	C0013604	Edema	Possible
SNOMEDCT_US	158252002	[D]Cyanosis	C0010520	Cyanosis	Possible
SNOMEDCT_US	158354004	[D]Failure of peripheral circulation	C0036974	Shock	Possible
SNOMEDCT_US	161979002	Edema	C0013604	Edema	Possible
SNOMEDCT_US	161988006	Edema NOS	C0013604	Edema	Possible
SNOMEDCT_US	195506001	Idiopathic hypotension			possible

10. Algorithm proposal

Broad: possible & narrow codes

Narrow: only narrow codes

12. Background rates

Varying between 1-9/100,000 across different regions

13. References

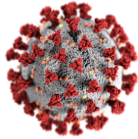
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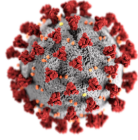
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