

REPLACED_BY - Discussion

The purpose of the **REPLACED_BY** association type is to indicate that the suggested target replacement concept is NOT semantically equivalent to the inactivated concept (ie **SAME_AS** can not apply).

The stated **REPLACED_BY** target represents an alternative which, although not semantically *exactly* the same, is considered to be clinically useful and - in the judgement of the author/editor - represents the intended original meaning of the inactivated concept closely enough for some unspecified data processing use cases, most likely data repair in the context of data retrieval.

The target concept chosen should normally be of the same semantic category as the inactive concept, and have the same or less specificity than the inactivated concept.

Only one **REPLACED_BY** can be declared for an inactive concept.

This association type may be used in the following circumstances:

- Where the concept to be inactivated is considered to be "Outdated"
- Where the concept to be inactivated is considered to be "Erroneous"

Combinatorial Logic:

Whenever an already stated **REPLACED_BY** target itself also becomes inactive - whether at the same release or later - the combinatorial logic of associations should be:

(A) **REPLACED_BY** (B) and (B) **SAME_AS** (C) *implies* (A) **REPLACED_BY** (C)
(A) **REPLACED_BY** (B) and (B) **REPLACED_BY** (C) *implies* (A) **REPLACED_BY** (C)
(A^{IntEd}) **REPLACED_BY** (B^{IntEd}) and (B^{IntEd}) **MOVED_TO** (C^{NRC}) *implies* (A^{IntEd}) **MOVED_TO** (C^{NRC})
(A^{IntEd}) **REPLACED_BY** (B^{IntEd}) and (C^{NRC}) **MOVED_FROM** (B^{IntEd}) *implies* (A^{IntEd}) **REPLACED_BY** (C^{NRC})
(A) **REPLACED_BY** (B) and (B) **POSSIBLY_EQUIVALENT_TO** (C, D) *implies* (A) **POSSIBLY_EQUIVALENT_TO** (C, D)
(A) **REPLACED_BY** (B) and (B) **WAS_A** (C AND D) *implies* (A) **WAS_A** (C AND D)

Examples from historical data

Numerous examples exist in the historical data that appear to be within the intended model of use, such as:

102455002 Hemorrhagic nephroso-nephritis (disorder)	REPLAC ED_BY	716864001 Hemorrhagic fever with renal syndrome (disorder)
10441006 Poisoning by other agent affecting skin and mucous membrane, NEC (disorder)	REPLAC ED_BY	43124005 Poisoning caused by skin AND/OR mucous membrane drug (disorder)
10512004 Sprain of other site of shoulder and upper arm (disorder)	REPLAC ED_BY	123536004 Sprain of upper extremity (disorder)
10125004 No diagnosis on Axis II (finding)	REPLAC ED_BY	116367006 Psychological finding (finding)
10234003 Engaged in job-related physical activity (finding)	REPLAC ED_BY	80638004 Work-related activity, function (observable entity)
102489001 Hypermobility (finding)	REPLAC ED_BY	40507009 Musculoskeletal hypermobility (finding)
102944006 Sexual behavior (finding)	REPLAC ED_BY	118199002 Finding relating to sexuality and sexual activity (finding)
103279008 Ear sign or symptom (finding)	REPLAC ED_BY	118236001 Ear and auditory finding (finding)
103642003 Reactive cellular changes associated with intrauterine contraceptive device (morphologic abnormality)	REPLAC ED_BY	733529001 Reactive cellular changes caused by intrauterine contraceptive device (finding)
103683000 Marginal zone lymphoma (morphologic abnormality)	REPLAC ED_BY	128803008 Marginal zone B-cell lymphoma (morphologic abnormality)
103684006 Mucosal-associated lymphoid tissue (MALT) lymphoma (morphologic abnormality)	REPLAC ED_BY	128803008 Marginal zone B-cell lymphoma (morphologic abnormality)
103687004 Acute lymphoblastic leukemia, L2 type (morphologic abnormality)	REPLAC ED_BY	128822004 Precursor cell lymphoblastic leukemia (morphologic abnormality)

10080009 Salmonella III arizonae 38:z52:z35 (organism)	REPLAC ED_BY	404389000 Salmonella IIIb 38:z52:z35 (organism)
10307004 Pseudomonas putrefaciens (organism)	REPLAC ED_BY	113700003 Shewanella putrefaciens (organism)
103440000 Enterococcus solitarius (organism)	REPLAC ED_BY	431990001 Tetragenococcus solitarius (organism)
10267004 Primary repair of torn capsule of knee, cruciate (procedure)	REPLAC ED_BY	118750007 Procedure on knee joint (procedure)
103731000 Diagnostic medical procedure (procedure)	REPLAC ED_BY	103693007 Diagnostic procedure (procedure)
10433006 Incision of lacrimal passage (procedure)	REPLAC ED_BY	417117000 Incision of lacrimal drainage structure (procedure)
103351004 Transorbital (qualifier value)	REPLAC ED_BY	129226004 Transorbital approach (qualifier value)
102715003 Aliphatic carboxylic acid, C24-0 (substance)	REPLAC ED_BY	78573001 Lignoceric acid (substance)
102767004 Clinically relevant enzymes with no Enzyme Commission designation (substance)	REPLAC ED_BY	90668006 Enzyme (substance)
103037007 11-Oxy fraction of 17-KS (substance)	REPLAC ED_BY	103039005 11-oxy-17-ketosteroid (substance)
103043009 Androstenedione (substance)	REPLAC ED_BY	56146000 Androstenedione (substance)
103047005 11-Oxycorticosterone (substance)	REPLAC ED_BY	103036003 11-oxycorticosteroid (substance)

However, there are also significant numbers where the original (inactive) and target concepts are semantically much closer together than might be expected.

If not, in fact, identical.

For example, trivially the following extract of 213 examples in current data where the FSNs are lexically identical:

362800001 Entire calf of leg (body structure)	REPLACED_BY	244015008 Entire calf of leg (body structure)
123287002 Acute cecitis (disorder)	REPLACED_BY	25552000 Acute cecitis (disorder)
123268008 Thrombosis of renal vein (disorder)	REPLACED_BY	15842009 Thrombosis of renal vein (disorder)
63495002 Fetishistic transvestism (disorder)	REPLACED_BY	472981000 Fetishistic transvestism (disorder)
123277001 Single umbilical artery (disorder)	REPLACED_BY	204470001 Single umbilical artery (disorder)
123203001 Condyloma latum (disorder)	REPLACED_BY	91554004 Condyloma latum (disorder)
172422001 Disorder of pregnancy (disorder)	REPLACED_BY	173300003 Disorder of pregnancy (disorder)
123305006 Contraction of eye socket after enucleation (disorder)	REPLACED_BY	39209001 Contraction of eye socket after enucleation (disorder)

...and also the following examples where the clinical meaning appears to be identical even though the words are different, or where the inactive code is clearly a list closure concept from a classification such as ICD but where similar codes from that classification have been treated differently¹

103057006 Intact parathyrin (substance)	REPLACED_BY	4076007 Intact parathyroid hormone (substance)
10010002 Tuberculosis of cervical lymph nodes (disorder)	REPLACED_BY	54084005 Cervical tuberculous lymphadenitis (disorder)
10156007 Other early complication of trauma, NEC (disorder)	REPLACED_BY	22564003 Early complication of trauma (disorder)
10483001 Toxic effect of other alcohol, NEC (disorder)	REPLACED_BY	67426006 Toxic effect of alcohol (disorder)

Notes

1. Compare with 206207002 Other specified scalp injury due to birth trauma (disorder) **SAME_AS** 37384000 Birth injury to scalp (disorder)