
Ambiguity in the UMLS Metathesaurus

2002 Edition

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1. Introduction

The UMLS[®] Metathesaurus[®] denotes explicit ambiguity by appending an ambiguity designator, a number in angle brackets, to the end of an ambiguous string. Because strings with ambiguity designators require significant special processing, the original string (with possible case changes) is included as another string for the concept involved.¹ Thus each concept with a string ‘aaa <n>’ also has string ‘aaa’ (ignoring case differences). But now any application which gains access to the Metathesaurus textually, cannot tell the difference among the concepts of an ambiguous cluster ‘aaa <n>’ each of which is represented by ‘aaa’. The purpose of this report is to examine ambiguity in the 2002 release of the Metathesaurus in the context of its effect on natural language processing (NLP) applications.

The number of explicitly ambiguous Metathesaurus terms has grown over the years. Table 1 shows several counts that indicate that growth in broad terms. Percentage changes are computed

	1999	2000	2001	2002
Strings with an ambiguity designator	7,912	9,416 (+19%)	12,840 (+36%)	13,837 (+8%)
Concepts with one or more ambiguity	6,565	7,409 (+13%)	9,637 (+30%)	10,328 (+7%)
Non-suppressible concepts with one or more ambiguity	5,736	6,501 (+13%)	8,074 (+24%)	8,754 (+8%)
Cases of ambiguity	3,669	4,361 (+19%)	5,571 (+28%)	6,014 (+8%)
Non-suppressible cases of ambiguity	3,449	4,139 (+20%)	5,311 (+28%)	5,752 (+8%)

Table 1. **Measures of ambiguity in the UMLS Metathesaurus**

1. This year there are 51 exceptions to this rule. See the Appendix for details.

relative to the previous year. Some examples will clarify the meaning of the counts. There are 23 Metathesaurus strings ‘Protocols <n>’ for n ranging from 1 to 23; these strings occur in 23 distinct concepts but represent a single case of ambiguity. Some concepts contain more than one ambiguous string, i.e. they are ambiguous in more than one (not necessarily distinct) way. In fact, the concept ‘Optic Nerve Glioma, Childhood’ has 37 ambiguous strings, more than any other concept. A more manageable example of a concept with multiple ambiguities is ‘Arthrogyrosis’ which has the following six ambiguous strings:

Amyoplasia congenita <1>
Congenital Arthromyodysplasia <1>
Congenital multiple arthrogyrosis <1>
myodystrophia fetalis deformans <2>
myodystrophia foetalis deformans <2>
pterygium universale <2>

All but the last string are ambiguous with the concept ‘Amyoplasia congenita disruptive sequence’. The concept containing ‘pterygium universale <1>’, however, is ‘Multiple pterygium syndrome’. Finally, separate counts are given after restricting focus to those Metathesaurus strings which are not suppressible synonyms. Since suppressible synonyms are generally unhelpful for NLP purposes, these counts give a more accurate view of Metathesaurus ambiguity.

The information in Table 1 shows that the amount of ambiguity in the Metathesaurus increased by about 8% from 2001 to 2002. This is less than the increase in the previous two years and may indicate a slowing in the rate of growth of ambiguity. Examining the cases of ambiguity more closely, consider the *degree* of ambiguity, i.e., the number of ways a string is ambiguous or, equivalently, the number of concepts in which it occurs.¹ For example ‘Other <n>’ has degree 55. Table 2 contains the distribution of ambiguities in the Metathesaurus according to degree. Note that an ambiguity of degree one is not actually an ambiguity. ‘Abbreviations <1>’, for example, is not ambiguous since there are no other ‘Abbreviations <n>’ strings in the Metathesaurus.

Ignoring suppressible synonyms produces the more realistic distribution shown in Table 3. Most of the ambiguity of degree greater than eight has disappeared, and all of that would disappear if appropriate strings were marked as suppressible. For example, ‘Other <n>’ now has degree six, and five of these remaining cases should be marked as suppressible. Suppressible synonyms are ignored for the remainder of this report.

Section 2 of this report describes ambiguity cases of degree three or more, section 3 provides some conclusions derived from the study, and the last section is an appendix of supporting information.

2. Cases of Metathesaurus Ambiguity

Ambiguous English Metathesaurus strings are described in this section in decreasing order of degree of ambiguity. Explanations are given for

1. The computation of the degree of an ambiguity was corrected this year. As a result, there are some differences from previous editions of this report in the counts reported in the tables.

Degree of ambiguity	1999 cases	2000 cases	2001 cases	2002 cases
55	0	0 (-)	1 (-)	1 (0%)
54	1	1 (0%)	0 (-100%)	0 (-)
23	1	1 (0%)	1 (0%)	1 (0%)
18	1	1 (0%)	1 (0%)	2 (+100%)
17	0	0 (-)	59 (-)	58 (-2%)
16	2	2 (0%)	2 (0%)	2 (0%)
8	3	3 (0%)	3 (0%)	3 (0%)
7	2	2 (0%)	2 (0%)	5 (+150%)
6	1	2 (+100%)	4 (+100%)	8 (+100%)
5	9	9 (0%)	22 (+144%)	21 (-5%)
4	50	63 (+26%)	55 (-13%)	59 (+7%)
3	305	373 (+22%)	418 (+12%)	472 (+13%)
2	3,102	3,534 (+14%)	4,368 (+24%)	4,641 (+6%)
1	192	370 (+93%)	635 (+72%)	741 (+17%)
Total	3,669	4,361 (+19%)	5,571 (+28%)	6,014 (+8%)

Table 2. Metathesaurus ambiguity distribution by degree

Degree of ambiguity	1999 cases	2000 cases	2001 cases	2002 cases
55	0	0 (-)	0 (-)	0 (-)
54	1	0 (-100%)	0 (-)	0 (-)
23	1	1 (0%)	1 (0%)	1 (0%)
18	1	1 (0%)	1 (0%)	1 (0%)
17	0	0 (-)	1 (-)	1 (0%)
16	1	1 (0%)	0 (-100%)	0 (-)
8	3	3 (0%)	3 (0%)	3 (0%)
7	2	2 (0%)	2 (0%)	3 (+50%)
6	0	1 (-)	2 (+100%)	2 (0%)
5	6	6 (0%)	7 (+17%)	10 (+43%)
4	24	34 (+42%)	37 (+9%)	46 (+24%)
3	223	303 (+36%)	385 (+27%)	448 (+16%)
2	2,849	3,435 (+21%)	4,511 (+31%)	4,878 (+8%)
1	338	352 (+4%)	361 (+3%)	359 (-1%)
Total	3,449	4,139 (+20%)	5,311 (+28%)	5,752 (+8%)

Table 3. Metathesaurus ambiguity distribution after removing suppressibles

- all cases of degree five or more; and
- cases of degree four and three requiring some action.

Some of the 4,878 cases of degree two will be analyzed in a future supplement to this report.

In all cases, suppressible synonyms are ignored as is done in Table 3. Ambiguous forms for concepts shown in bold should be marked as suppressible. Recommendations for cases which are not clear are introduced with the word *consider*. Concepts shown in bold italics have recommendations that are not necessarily directly related to ambiguity considerations.

Starting this year, MeSH subheadings (or topical qualifiers) such as ‘morphological’ (‘morphology <3>’) will be suppressed in MetaMap just as abbreviations have been. They represent ambiguity which some Metathesaurus users may want, but their non-medical, indexing meaning is not appropriate for use with NLP programs such as MetaMap. These cases of ambiguity are not discussed further in this report.

2.1 ‘Protocols <n>’ (degree 23)

Except for ‘Protocols <2>’ with preferred name ‘Protocols documentation’, ‘Protocols <n>’ are generalizations of their preferred names and should be marked as suppressible. Their concepts are

1. C0442711: Protocols documentation (Protocols <2>)
2. **C0542547: Protocols: Activities (Protocols <23>)**
3. **C0677556: Protocols: Pre- or Intra- or Post-Procedure (Protocols <1>)**
4. **C0677557: Protocols: Urinary Elimination (Protocols <3>)**
5. **C0677558: Protocols: Tissue Perfusion (Protocols <4>)**
6. **C0677559: Protocols: Tissue Integrity (Protocols <5>)**
7. **C0677560: Protocols: Sensation, Pain and Comfort (Protocols <6>)**
8. **C0677561: Protocols: Self-Concept (Protocols <7>)**
9. **C0677562: Protocols: Self-Care (Protocols <8>)**
10. **C0677563: Protocols: Safety (Protocols <9>)**
11. **C0677564: Protocols: Role Relationship (Protocols <10>)**
12. **C0677565: Protocols: Respiration (Protocols <11>)**
13. **C0677566: Protocols: Physical Regulation (Protocols <12>)**
14. **C0677567: Protocols: Nutrition (Protocols <13>)**
15. **C0677568: Protocols: Metabolism (Protocols <14>)**
16. **C0677569: Protocols: Medications and Blood Products (Protocols <15>)**
17. **C0677570: Protocols: Immunology (Protocols <16>)**
18. **C0677571: Protocols: Health Behavior (Protocols <17>)**
19. **C0677572: Protocols: Fluid and Electrolyte (Protocols <18>)**
20. **C0677573: Protocols: Coping (Protocols <19>)**
21. **C0677574: Protocols: Cognition (Protocols <20>)**
22. **C0677575: Protocols: Circulation (Protocols <21>)**
23. **C0677576: Protocols: Bowel Elimination (Protocols <22>)**

2.2 ‘Patient Education Plans <n>’ (degree 18)

All 18 strings ‘Patient Education Plans <n>’ are generalizations and should be suppressed. Their concepts are

1. **C0549081: Patient Education Plans: Activities (Patient Education Plans <1>)**
2. **C0549082: Patient Education Plans: Bowel Elimination (Patient Education Plans <2>)**
3. **C0549083: Patient Education Plans: Circulation (Patient Education Plans <3>)**
4. **C0549084: Patient Education Plans: Coping (Patient Education Plans <4>)**
5. **C0549085: Patient Education Plans: Health Behavior (Patient Education Plans <5>)**
6. **C0549086: Patient Education Plans: Immunology (Patient Education Plans <6>)**
7. **C0549087: Patient Education Plans: Medications and Blood Products (Patient Education Plans <7>)**
8. **C0549088: Patient Education Plans: Metabolism (Patient Education Plans <8>)**
9. **C0549089: Patient Education Plans: Nutrition (Patient Education Plans <9>)**
10. **C0549090: Patient Education Plans: Physical Regulation (Patient Education Plans <10>)**
11. **C0549091: Patient Education Plans: Respiration (Patient Education Plans <11>)**
12. **C0549092: Patient Education Plans: Role Relationship (Patient Education Plans <12>)**
13. **C0549093: Patient Education Plans: Safety (Patient Education Plans <13>)**
14. **C0549094: Patient Education Plans: Self-Care (Patient Education Plans <14>)**
15. **C0549095: Patient Education Plans: Sensation, Pain and Comfort (Patient Education Plans <15>)**
16. **C0549096: Patient Education Plans: Tissue Integrity (Patient Education Plans <16>)**
17. **C0549097: Patient Education Plans: Urinary Elimination (Patient Education Plans <17>)**
18. **C0549098: Patient Education Plans: Pre- or Intra- or Post-Procedure (Patient Education Plans <18>)**

2.3 ‘Assessment <n>’ (degree 16)

Similarly, all 17 strings ‘Assessment <n>’ are generalizations and should be suppressed. Note that the degree of ambiguity here is 16 because ‘Assessment <5>’ and ‘Assessment <17>’ both belong to the same concept, ‘Assessment: Cognition’. The concepts involved in this ambiguity are

1. **C0028708: Nutrition Assessment (Assessment <1>)**
2. **C0542573: Assessment: Bowel Elimination (Assessment <3>)**
3. **C0549068: Assessment: Circulation (Assessment <4>)**
4. **C0549070: Assessment: Coping (Assessment <6>)**
5. **C0549071: Assessment: Fluid and Electrolytes (Assessment <7>)**
6. **C0549072: Assessment: Health Behavior (Assessment <8>)**
7. **C0549073: Assessment: Medications and Blood Products (Assessment <9>)**
8. **C0549074: Assessment: Metabolism (Assessment <10>)**
9. **C0549075: Assessment: Respiration (Assessment <11>)**
10. **C0549076: Assessment: Safety (Assessment <12>)**
11. **C0549077: Assessment: Self-Care (Assessment <13>)**
12. **C0549078: Assessment: Sensation, Pain and Comfort (Assessment <14>)**
13. **C0549079: Assessment: Urinary Elimination (Assessment <15>)**
14. **C0549080: Assessment: Pre- or Intra- or Post-Procedure (Assessment <16>)**
15. **C0679207: Knowledge acquisition using a method of assessment (assessment <2>)**
16. **C0870300: Assessment: Cognition (Assessment <5>)**
17. **C0870300: Assessment: Cognition (Assessment <17>)**

2.4 ‘cde genotype <n>’ (degree 8)

The 8 strings ‘cde genotype <n>’ differ only in the case of ‘c’, ‘d’ or ‘e’. They seem to be legitimate concepts from RCD99. In a case sensitive environment, there is no ambiguity; the presence of strings with ambiguity designators, although not harmful, is not necessary. When case is ignored, the ambiguity exists and the additional strings are warranted (albeit possibly confusing because they appear with mixed case). Thus, the ambiguous forms are correctly not suppressed.

2.5 ‘Driver injured in collision with other and unspecified motor vehicles in nontraffic accident <n>’ (degree 8)

The 8 strings ‘Driver injured ... <n>’ occur in the Read Codes and ICD-10 with some variation in the wording. The concepts for these strings are

1. **C0476822: Driver pedal cycle injured in collision with other and unspecified motor vehicles in nontraffic accident (<1>)**
2. **C0476905: Motorcycle driver injured in collision with other and unspecified motor vehicles in nontraffic accident (<2>)**
3. **C0476973: Car driver injured in collision with other and unspecified motor vehicles in nontraffic accident (<4>)**
4. **C0477136: Bus driver injured in collision with other and unspecified motor vehicles in nontraffic accident (<7>)**
5. **C0496239: Driver of three-wheeled motor vehicle injured in collision with other and unspecified motor vehicles in nontraffic accident (<3>)**
6. **C0496408: Pick-up truck or van driver injured in collision with other and unspecified motor vehicles in nontraffic accident (<5>)**
7. **C0496481: Heavy transport vehicle driver injured in collision with other and unspecified motor vehicles in nontraffic accident (<6>)**
8. **C0596026: Driver injured in collision with other and unspecified motor vehicles in nontraffic accident (<8>)**

where, for ease of reading, the strings ‘Driver injured... <n>’ are shown simply as ‘<n>’. Except for the last case, the ambiguous strings are generalizations and should be suppressed.

2.6 ‘Driver injured in collision with other and unspecified motor vehicles in traffic accident <n>’ (degree 8)

This case is analogous to the previous one (section 2.5); all but the last should be suppressed. The relevant concepts (with abbreviated ambiguity designator strings as before) are

1. **C0476826: Pedal cycle driver injured in collision with other and unspecified motor vehicles in traffic accident (<1>)**
2. **C0476909: Motor cycle driver injured in collision with other and unspecified motor vehicles in traffic accident (<2>)**
3. **C0476977: Car driver injured in collision with other and unspecified motor vehicles in traffic accident (<4>)**
4. **C0477140: Bus driver injured in collision with other and unspecified motor vehicles in traffic accident (<7>)**
5. **C0496241: Three-wheeled motor vehicle driver injured in collision with other and unspecified motor vehicles in traffic accident (<3>)**

6. **C0496410: Pick-up truck or van driver injured in collision with other and unspecified motor vehicles in traffic accident (<5>)**
7. **C0496483: Heavy transport driver injured in collision with other and unspecified motor vehicles in traffic accident (<6>)**
8. C0596027: Driver injured in collision with other and unspecified motor vehicles in traffic accident (<8>)

2.7 ‘DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 249CC, BUT LESS THAN OR EQUAL TO 999CC, FOR PERITONEAL DIALYSIS <n>’ (degree 7)

This is simply not an instance of ambiguity; the quantities differ. Except for the first concept which matches the ambiguous strings exactly, the ambiguous strings are just not the same as the preferred concept name and should be suppressed. The concepts involved are

1. C0993689: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 249CC, BUT LESS THAN OR EQUAL TO 999CC, FOR PERITONEAL DIALYSIS (<1>)
2. **C0993690: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 999CC, FOR PERITONEAL DIALYSIS (<2>)**
3. **C0993691: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 1999CC, FOR PERITONEAL DIALYSIS (<3>)**
4. **C0993692: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 2999CC, FOR PERITONEAL DIALYSIS (<7>)**
5. **C0993693: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 3999CC, FOR PERITONEAL DIALYSIS (<4>)**
6. **C0993694: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 4999CC, FOR PERITONEAL DIALYSIS (<6>)**
7. **C0993695: DIALYSATE SOLUTION, ANY CONCENTRATION OF DEXTROSE, FLUID VOLUME GREATER THAN 5999CC, FOR PERITONEAL DIALYSIS (<5>)**

2.8 ‘Passenger injured in collision with other and unspecified motor vehicles in nontraffic accident <n>’ (degree 7)

This case is analogous to the one in section 2.5 except that all no strings should remain unsuppressed. The relevant concepts are

1. **C0476823: Pedal cycle passenger injured in collision with other and unspecified motor vehicles in nontraffic accident (<1>)**
2. **C0476906: Motor cycle passenger injured in collision with other and unspecified motor vehicles in nontraffic accident (<2>)**
3. **C0496240: Three-wheeled motor vehicle passenger injured in collision with other and unspecified motor vehicles in nontraffic accident (<3>)**
4. **C0496324: Passenger of car injured in collision with other and unspecified motor vehicles in nontraffic accident (<4>)**
5. **C0496409: Pick-up truck or van passenger injured in collision with other and unspecified motor vehicles in nontraffic accident (<5>)**
6. **C0496482: Heavy transport vehicle passenger injured in collision with other and unspecified motor vehicles in nontraffic accident (<6>)**

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7. **C0496486: Bus passenger injured in collision with other and unspecified motor vehicles in nontraffic accident (<7>)**

2.9 ‘Passenger injured in collision with other and unspecified motor vehicles in traffic accident <n>’ (degree 7)

This case is analogous to the previous one; all ambiguous strings (except for sense <3>) should be suppressed. The relevant concepts are

1. **C0476827: Pedal cycle passenger injured in collision with other and unspecified motor vehicles in traffic accident (<1>)**
2. **C0476910: Motor cycle passenger injured in collision with other and unspecified motor vehicles in traffic accident (<2>)**
3. C0496242: Passenger injured in collision with other and unspecified motor vehicles in traffic accident (<3>)
4. **C0496326: Passenger of car injured in collision with other and unspecified motor vehicles in traffic accident (<4>)**
5. **C0496411: Passenger of pick-up truck or van vehicle injured in collision with other and unspecified motor vehicles in traffic accident (<5>)**
6. **C0496484: Passenger of heavy transport vehicle vehicle injured in collision with other and unspecified motor vehicles in traffic accident (<6>)**
7. **C0496488: Passenger of bus injured in collision with other and unspecified motor vehicles in traffic accident (<7>)**

2.10 ‘Cold <n>’ (degree 6)

The concepts associated with the six senses of ‘Cold <n>’ are

1. C0009264: cold temperature (Cold <1>)
2. C0009443: Common Cold (Cold <2>)
3. **C0010412: Cold Therapy (Cold <4>) [consider suppressing]**
4. C0024117: Chronic Obstructive Airway Disease (COLD <3>) (which has string ‘Chronic Obstructive Lung Disease’)
5. C0234192: Cold Sensation (Cold <5>)
6. C0719425: Cold brand of chlorpheniramine-phenylpropanolamine (Cold <6>)

Senses <3>, <4> and <6> are currently suppressed by MetaMap for mainly practical reasons. The only sense that might be marked as suppressible in the Metathesaurus is sense <4>, ‘Cold Therapy’, because it is extremely rare to find the word *cold* by itself meaning ‘Cold Therapy’.

2.11 ‘Other <n>’ (degree 6)

The only remaining ‘Other <n>’ strings which have not already been suppressed are listed below. All but the first should be suppressed.

1. C0205394: Other (Other <1>)
2. **C0220886: Other location of complaint (Other <2>)**
3. **C0697270: Miscellaneous Dietary Supplements (Other <55>)**
4. **C0700060: Other activities involving preparation of a routine non-injectable drug product (Other <52>)**

5. **C0700062: Other activities involving preparation of compounded non-parenteral medications (Other <53>)**
6. **C0700063: Other activities involving preparation of compounded parenteral medications (Other <54>)**

2.12 '[SO] Premolar tooth <n>' (degree 5)

All ambiguous strings are generalizations and should be suppressed.

1. **C0005373: Bicuspid ([SO] Premolar tooth <1>)**
2. **C0447259: Permanent upper right first premolar tooth ([SO] Premolar tooth <2>)**
3. **C0447265: Permanent upper left second premolar tooth ([SO] Premolar tooth <3>)**
4. **C0447266: Permanent upper left first premolar tooth ([SO] Premolar tooth <4>)**
5. **C0447299: Permanent lower right second premolar tooth ([SO] Premolar tooth <5>)**

2.13 'Adjustment <n>' (degree 5)

The concepts for the 5 senses of 'adjustment' are

1. C0001537: Clinical Adjustment (Adjustment <2>)
2. C0376209: Individual Adjustment (Adjustment <1>)
3. C0456081: Adjustment Action (Adjustment <3>)
4. **C0678219: Adjustment - classification term (Adjustment <4>) [consider renaming]**
5. C0683269: Psychological adjustment (adjustment <5>)

This is legitimate ambiguity. However, the preferred name of sense <4>, 'Adjustment - classification term', is self referential and should be renamed. If the string 'Adjustment - classification term' is kept, it should be marked as suppressible.

2.14 'CAM <n>' (degree 5)

Suppress ambiguous forms (MetaMap only) because they are either abbreviatory or, in the case of 'CAM brand of Ephedrine Hydrochloride', a brand name.

1. C0007578: Cell Adhesion Molecules (CAM <1>)
2. C0178551: chorioallantoic membrane (CAM <3>)
3. C0678112: CAM brand of Ephedrine Hydrochloride (CAM <2>)
4. C0713465: Cam, topical lotion (Cam <4>)
5. C0936077: Complementary therapies (CAM <5>)

2.15 'CD <n>' (degree 5)

This is legitimate ambiguity (although it is not clear why 'CP protocol' is related to 'CD'). However, the ambiguous forms are suppressed in MetaMap because they are abbreviations.

1. C0006632: Cadmium (Cd <3>)
2. C0056447: CP protocol (CD <2>)
3. C0079141: Compact discs (CD <4>)
4. C0332140: Diagnosis, clinical (CD <1>)
5. C0700300: candela (cd <5>)

2.16 'Cl <n>' (degree 5)

With the exception of 'Chloride measurement', the senses are legitimate but are suppressed in MetaMap. Suppress the ambiguous forms of 'Chloride measurement' (sense <5>) because it is a laboratory procedure, not a substance.

1. C0008209: Chlorine (Cl <4>)
2. C0010575: Cycloleucine (CL <2>)
3. **C0201952: Chloride measurement (Cl <5>)**
4. C0475212: centiliter (cL <1>)
5. C0596019: Chloride Ion (CL <3>)

2.17 'Liver <n>' (degree 5)

Senses <1>, <4> and <7> are legitimate (although MetaMap suppresses <4>), and senses <5> and <6> should be marked as suppressible since they simply do not mean *liver*.

1. C0023884: Liver (Liver <1>)
2. **C0023895: Liver diseases (Liver <6>)**
3. C0023899: Liver Extract (LIVER <7>)
4. C0721399: Liver brand of Vitamin B 12 (Liver <4>)
5. **C0872387: Procedures on liver (Liver <5>)**

2.18 'P <n>' (degree 5)

Suppress the ambiguous forms of 'Phosphorus measurement' (sense <5>) because it is a 'Laboratory Procedure', not a substance. In addition, the senses of 'P' are abbreviations and, in the last two cases, self referential. They are all suppressed by MetaMap.

1. C0031705: Phosphorus (P <4>)
2. C0033452: Properdin (P <3>)
3. **C0202178: Phosphorus measurement (P <5>)**
4. C0439115: upper case pea (P <1>)
5. C0439140: lower case pea (p <2>)

2.19 'Premolar tooth <n>' (degree 5)

Like '[SO] Premolar tooth <n>', all ambiguous strings are generalizations and should be suppressed.

1. **C0005373: Bicuspid (Premolar tooth <1>)**
2. **C0447259: Permanent upper right first premolar tooth (Premolar tooth <2>)**
3. **C0447265: Permanent upper left second premolar tooth (Premolar tooth <3>)**
4. **C0447266: Permanent upper left first premolar tooth (Premolar tooth <4>)**
5. **C0447299: Permanent lower right second premolar tooth (Premolar tooth <5>)**

2.20 'Tourniquet on <n>' (degree 5)

There is no obvious reason why these terms have been made ambiguous using the expression 'Tourniquet on'. All senses should be marked as suppressible.

1. **C0204731: Application of tourniquet (Tourniquet on <1>)**

2. **C0412800: Upper tourniquet cuff inflation (Tourniquet on <2>)**
3. **C0412801: Lower tourniquet cuff inflation (Tourniquet on <3>)**
4. **C0412802: Manual tourniquet application (Tourniquet on <4>)**
5. **C0549105: Tourniquet cuff inflation (Tourniquet on <5>)**

2.21 'AD <n>' (degree 4)

Suppress all ambiguous forms (MetaMap only).

1. C0002395: Alzheimer's Disease (AD <3>)
2. C0010934: Dactinomycin (AD <2>)
3. C0228318: Anterodorsal nucleus of thalamus (AD <4>)
4. C0332133: Admitting diagnosis (AD <1>)

2.22 'Ash <n>' (degree 4)

Suppress ambiguous forms for sense <2> (MetaMap only). Of the two concepts 'Ash tree' (<1> and <3>), sense <1> only involves MTH strings and should be suppressed or deleted entirely.

1. C0205700: Asymmetric Septal Hypertrophy (ash <2>)
2. **C0446287: Ash tree (Ash <1>)**
3. C0994524: Ash tree (Ash <3>)
4. C0994955: ASH <4> (ASH <4>)

2.23 'COORDINATED CARE FEE, RISK ADJUSTED MAINTENANCE, LEVEL 3 <n>' (degree 4)

Although this appears to be a case of ambiguity, i.e., the terms come from HCPCS02 with different IDs within the vocabulary, there is no discernible difference among them. They seem to be the same thing and should probably be marked as suppressible.

1. **C0993926: COORDINATED CARE FEE, RISK ADJUSTED MAINTENANCE, LEVEL 3 <1>**
2. **C0993927: COORDINATED CARE FEE, RISK ADJUSTED MAINTENANCE, LEVEL 3 <3>**
3. **C0993928: COORDINATED CARE FEE, RISK ADJUSTED MAINTENANCE, LEVEL 3 <4>**
4. **C0993929: COORDINATED CARE FEE, RISK ADJUSTED MAINTENANCE, LEVEL 3 <2>**

2.24 'COPE <n>' (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0068301: N-succinyl-1,2-dioleoylphosphatidylethanolamine (COPE <1>)
2. C0280558: cisplatin/cyclophosphamide/etoposide/vincristine (COPE <2>)
3. C0740229: Cope brand of aspirin-caffeine (Cope <4>)
4. C0809943: Cope brand of Methapyrilene (COPE <3>)

2.25 'CVP <n>' (degree 4)

Suppress 'Measurement of central venous pressure' (sense <4>) because it is a 'Diagnostic Procedure', not a biological function. (Note that we actually mean that the ambiguous forms 'CVP <4>' and 'Cvp' of 'Measurement of central venous pressure', not the concept itself, should be suppressed. This informal expression is used throughout the report.) In addition, suppress the other abbreviatory forms (for MetaMap).

1. C0056633: cyclophosphamide/prednisone/vincristine (CVP <3>)
2. **C0199666: Measurement of central venous pressure (CVP <4>)**
3. C0280556: cisplatin/cyclophosphamide/etoposide (CVP <1>)
4. C0520454: Central Venous Pressure-Biological function (Cvp <2>)

2.26 'Dandruff <n>' (degree 4)

Suppress 'Dandruff brand of pyrithione zinc' (sense <4>) (MetaMap only) because it is a brand name.

1. C0221244: Seborrheic dermatitis of scalp (Dandruff <2>)
2. C0423775: Scurfiness of scalp (Dandruff <1>)
3. C0600024: Pityriasis simplex (Dandruff <3>)
4. C0719659: Dandruff brand of pyrithione zinc (Dandruff <4>)

2.27 'EPI <n>' (degree 4)

Suppress ambiguous forms (MetaMap only). (Sense 4 has no other names and will not be suppressed even by MetaMap.)

1. C0065061: lipoprotein-associated coagulation inhibitor (EPI <1>)
2. C0267963: Exocrine pancreatic insufficiency (EPI <2>)
3. C0451152: Eysenck personality inventory (EPI <3>)
4. C0994343: EPI <4> (EPI <4>)

2.28 'ERP <n>' (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0008310: Endoscopic Retrograde Cholangiopancreatography (ERP <3>)
2. C0015214: Evoked Potentials (ERP <4>)
3. C0337380: Endoscopic retrograde pancreatography (ERP <1>)
4. C0812375: ELK3 Gene (ERP <2>)

2.29 'ET - Esotropia <n>' (degree 4)

Consider suppressing ambiguous forms for all concepts except 'Esotropia' since they are findings of the disease.

1. C0014877: Esotropia (ET - Esotropia <4>)
2. **C0423054: Manifest alternating convergent squint (ET - Esotropia <1>)**
3. **C0423061: Intermittent convergent squint (ET - Esotropia <2>)**
4. **C0423070: Incomitant esotropia (ET - Esotropia <3>)**

2.30 'Fire <n>' (degree 4)

Sense <1>, with string 'Burning, NOS', is not well-defined; its ambiguous forms should be suppressed.

1. **C0000912: Accident caused by unspecified fire (Fire <1>)**
2. C0016141: Fire - disasters (Fire <3>)
3. C0700614: Fire - physical phenomenon (fire <2>)
4. C0702194: Fire as a heat source (Fire <4>)

2.31 'Lupus <n>' (degree 4)

The four senses seem to be legitimate although the senses <3> and <4> seem to be specific types of sense <2> and as such could be suppressed.

1. C0024131: Lupus Vulgaris (Lupus <1>)
2. **C0024138: Lupus Erythematosus, Discoid (lupus <3>)**
3. **C0024141: Lupus Erythematosus, Systemic (lupus <4>)**
4. C0409974: Lupus Erythematosus (Lupus <2>)

2.32 'MAC <n>' (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0009545: Complement Membrane Attack Complex (MAC <1>)
2. C0026914: Mycobacterium avium Complex (MAC <4>)
3. C0451273: MacAndrew Alcoholism Scale (MAC <3>)
4. C0453947: Raincoat (Mac <2>)

2.33 'Mole <n>' (degree 4)

Consider suppressing ambiguous forms for 'Nevus, Pigmented' (<4>) as being a kind of 'Benign melanocytic nevus of skin' (<2>).

1. C0026386: Mole the mammal (Mole <1>)
2. **C0027962: Nevus, Pigmented (Mole <4>)**
3. C0349514: Benign melanocytic nevus of skin (Mole <2>)
4. C0439189: Mole, unit of measurement (mole <3>)

2.34 'Morphology <n>' (degree 4)

Consider collapsing 'Morphology' and 'Physical shape' (senses <1> and <4>).

1. **C0332437: Morphology (Morphology <1>)**
2. C0543482: morphological (morphology <3>)
3. **C0700329: Physical shape (morphology <4>)**
4. C0700619: Science of Morphology (morphology <2>)

2.35 'MS <n>' (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0026269: Mitral Valve Stenosis (ms <4>)

2. C0026769: Multiple Sclerosis (MS <3>)
3. C0066814: Morphine Sulfate (MS <2>)
4. C0439223: millisecond (ms <1>)

2.36 'Nutrition <n>' (degree 4)

Consider collapsing senses <2> and <3>. Also, in addition to having semantic type 'Biomedical Occupation or Discipline', 'Science of nutrition' (sense <1>) also has the incorrect type 'Organism Function'.

1. C0028707: Science of nutrition (Nutrition <1>)
2. **C0392209: Nutritional status (Nutrition <2>)**
3. **C0518896: Nutrition outcomes (Nutrition <3>)**
4. C0600072: Feeding and dietary regimes (Nutrition <4>)

2.37 'Pathology <n>' (degree 4)

'Pathology procedure' (sense <4>) should be suppressed since it is a 'Therapeutic or Preventive Procedure' and does not mean *pathology*. The ambiguous forms of 'Pathological aspects' (sense <2>) will be suppressed by MetaMap because of its indexing meaning in MeSH. In addition, the concept is probably not well-defined anyway since it involves both a MeSH topical qualifier and terms from SNMI98 which should either be split out into a separate concept or merged with 'Pathology processes' (sense <3>).

1. C0030664: Pathology (Pathology <1>)
2. **C0205469: Pathological aspects (pathology <2>)**
3. C0677042: Pathology processes (pathology <3>)
4. **C0919386: Pathology procedure (Pathology <4>)**

2.38 'PNET <n>' (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0206663: Neuroectodermal Tumor, Primitive (PNET <4>)
2. C0279980: Extraosseous Ewings sarcoma-primitive neuroepithelial tumor (PNET <2>)
3. C0684337: Ewings sarcoma-primitive neuroectodermal tumor (PNET) (PNET <1>)
4. C0877849: Askin's tumor (PNET <3>)

2.39 'Pressure <n>' (degree 4)

Consider collapsing 'Pressure' (sense <2>) with one of the other senses, perhaps 'Pressure- physical agent' (sense <1>).

1. **C0033095: Pressure- physical agent (Pressure <1>)**
2. C0234222: Baresthesia (PRESSURE <4>)
3. **C0392677: Pressure (Pressure <2>)**
4. C0460139: Pressure - action (Pressure <3>)

2.40 ‘Relapse <n>’ (degree 4)

Suppress ‘Cancer Relapse’ (sense <3>) as being too specific. Also, consider collapsing ‘Relapsing course’ and ‘Relapse phase’ (senses <2> and <4>) due to their closeness in meaning.

1. C0035020: Relapse (Relapse <1>)
2. **C0205336: Relapsing course (Relapse <2>)**
3. **C0580802: Relapse phase (Relapse <4>)**
4. **C0699753: Cancer Relapse (relapse <3>)**

2.41 ‘Screening <n>’ (degree 4)

Suppress ‘Screening for cancer’ (sense <3>) as being too specific.

1. **C0199230: Screening for cancer (screening <3>)**
2. C0220908: Screening procedure (Screening <1>)
3. C0220909: Aspects of disease screening (screening <2>)
4. C0260968: Screening for unspecified condition (Screening <4>)

2.42 ‘Sperm count <n>’ (degree 4)

Although it is not clear how to handle this case, it seems very unlikely that there are four distinct senses of *sperm count* in the Metathesaurus. Consider collapsing one or more of ‘Sperm Count Procedure’, ‘Sperm number’ and ‘Sperm number observed’ (senses <1>, <3> and <4>) having semantic types ‘Laboratory Procedure’, ‘Quantitative Concept’ and ‘Laboratory or Test Result’. Even consider suppressing ‘Encounter due to sperm count’ (sense <3>); its meaning seems to be more specific than *sperm count*.

1. **C0037842: Sperm Count Procedure (sperm count <1>)**
2. **C0600338: Sperm number (SPERM COUNT <2>)**
3. **C0678217: Encounter due to sperm count (Sperm count <3>)**
4. **C0740036: Sperm number observed (Sperm count <4>)**

2.43 ‘Sterilization <n>’ (degree 4)

Consider collapsing ‘Sexual sterilization’ and ‘Family planning for women/sterilization’ (senses <4> and <3>). Also consider suppressing ‘Encounter due to sterilization’ (sense <2>) as being too specific.

1. C0038280: Sterilization for infection control (Sterilization <1>)
2. **C0038288: Sexual sterilization (Sterilization <4>)**
3. **C0362065: Encounter due to sterilization (Sterilization <2>)**
4. **C0497562: Family planning for women/sterilization (STERILIZATION <3>)**

2.44 ‘TEM <n>’ (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0040975: Triethylenemelamine (TEM <3>)
2. C0262880: Transmission Electron Microscopes (TEM <2>)
3. C0276640: Transmissible mink encephalopathy (TEM <1>)
4. C0678118: Transmission Electron Microscopy (TEM <4>)

2.45 ‘Thymus <n>’ (degree 4)

Senses <5> and <4> should be marked suppressible.

1. C0040112: Thymus Extracts (THYMUS <6>)
2. C0040113: Thymus Gland (Thymus <1>)
3. **C0154199: Disease of thymus gland (Thymus <5>)**
4. **C0869570: Procedures on Thymus (Thymus <4>)**

2.46 ‘TMP <n>’ (degree 4)

Suppress ambiguous forms (MetaMap only).

1. C0040079: Thymidine Monophosphate (TMP <1>)
2. C0041041: Trimethoprim (TMP <2>)
3. C0384479: epithelial membrane protein-1 (TMP <4>)
4. C0812384: EMP1 Gene (TMP <3>)

2.47 ‘Translocation <n>’ (degree 4)

Consider suppressing all ambiguous forms as being more specific than simply *translocation*. (Alternatively, senses could be collapsed if that makes sense.)

1. **C0040715: Chromosomal translocation (Translocation <1>)**
2. **C0599718: Cellular translocation (translocation <2>)**
3. **C0599813: Intracellular translocation (translocation <3>)**
4. **C0599893: Protein translocation (translocation <4>)**

2.48 ‘XT - Exotropia <n>’ (degree 4)

Consider suppressing ambiguous forms for all concepts since they are findings of the disease Exotropia.

1. **C0423055: Manifest divergent squint (XT - Exotropia <1>)**
2. **C0423056: Manifest alternating divergent squint (XT - Exotropia <2>)**
3. **C0423062: Intermittent divergent squint (XT - Exotropia <3>)**
4. **C0423071: Incomitant exotropia (XT - Exotropia <4>)**

2.49 ‘5 Alpha-Reductase <n>’ (degree 3)

Suppress senses <2> and <3> as being too specific.

1. **C0039602: Testosterone 5-alpha-Reductase (5 Alpha-Reductase <2>)**
2. **C0055533: cholestenone 5 alpha-reductase (5 alpha-reductase <3>)**
3. C0097622: 5 alpha-reductase, unspecified (5 alpha-reductase <1>)

2.50 ‘A33 <n>’ (degree 3)

Suppress senses <3> and <2> as being too specific. (Sense <3> is even marked as narrower than sense <1>, although sense <2> is only related as *other*.)

1. C0392959: A33 monoclonal antibody (A33 <1>)
2. **C0677678: iodine I 124 monoclonal antibody A33 (A33 <3>)**

3. **C0678093: iodine I 131 monoclonal antibody A33 (A33 <2>)**

2.51 'Acetoacetate <n>' (degree 3)

Suppress ambiguous forms for 'Acetoacetate measurement' (sense <3>) since it is a 'Laboratory Procedure', not a substance.

1. C0000988: Acetoacetates (acetoacetate <2>)
2. C0220778: acetoacetate (acetoacetate <1>)
3. **C0392886: Acetoacetate measurement (Acetoacetate <3>)**

2.52 'Acne <n>' (degree 3)

Suppress ambiguous forms for 'Acne brand of benozyl [sic] peroxide' (sense <1>) (MetaMap only). Also, correct the spelling error in sense <1>.

1. C0001144: Acne Vulgaris (Acne <3>)
2. C0702166: Acne (acne <2>)
3. **C0718217: Acne brand of benozyl peroxide (Acne <1>)**

2.53 'ADH <n>' (degree 3)

Suppress ambiguous forms for 'Antidiuretic hormone measurement' (sense <3>) because it is a 'Laboratory Procedure', not a substance. In addition, suppress the remaining abbreviatory forms for MetaMap.

1. C0001942: Alcohol dehydrogenase (ADH <2>)
2. C0042413: Vasopressins (ADH <1>)
3. **C0201849: Antidiuretic hormone measurement (ADH <3>)**

2.54 'AG <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0002555: Aminoglutethimide (AG <1>)
2. C0003320: Antigens (Ag <3>)
3. C0037125: Silver (AG <2>)

2.55 'Allograft <n>' (degree 3)

Consider suppressing the ambiguous forms of 'Allograft surgical material' (sense <3>) because of the meaning difference.

1. C0085769: Allogeneic graft (Allograft <2>)
2. **C0450127: Allograft surgical material (Allograft <3>)**
3. C0522536: Allografting (Allograft <1>)

2.56 'AMI <n>' (degree 3)

Suppress ambiguous forms (MetaMap only), but also consider suppressing 'Myocardial Infarction' (sense <3>) as being too general.

1. **C0027051: Myocardial Infarction (AMI <3>)**
2. C0155626: Acute myocardial infarction (ami <2>)
3. C0340293: Anterior myocardial infarction (ami <1>)

2.57 'ANA <n>' (degree 3)

Suppress 'Antinuclear Antibody Assay' (sense <3>) because it is a 'Laboratory Procedure', not a substance. In addition, suppress the remaining abbreviatory forms for MetaMap.

1. C0003243: Antibodies, Antinuclear (ANA <1>)
2. C0027385: Naphthol AS D Esterase (ANA <2>)
3. **C0702121: Antinuclear Antibody Assay (ANA <3>)**

2.58 'Angelica <n>' (degree 3)

Suppress ambiguous forms of 'Angelica archenaglica' (sense <1>) as being more specific than 'Angelica' (sense <3>) since in MeSH, it is more specific with sibling 'Angelica sinensis'.

1. C0771998: Angelica Extract (ANGELICA <2>)
2. **C0877891: Angelica archangelica (Angelica <1>)**
3. C0936217: Angelica (Angelica <3>)

2.59 'Anterior <n>' (degree 3)

Suppress ambiguous forms of 'Adenohypophyseal Diseases' (sense <3>) since diseases are neither spatial concepts nor anatomical structures; and consider suppressing the ambiguous forms of 'Pituitary Gland, Anterior' (sense <1>) unless *anterior* really means the gland.

1. **C0032008: Pituitary Gland, Anterior (Anterior <1>)**
2. C0205094: Anterior (Anterior <2>)
3. **C0751437: Adenohypophyseal Diseases (Anterior <3>)**

2.60 'Anthracyclines <n>' (degree 3)

Suppress ambiguous forms of 'prior anthracycline therapy' (sense <3>) since it is a therapeutic procedure, not some kind of chemical. Also, consider collapsing senses <1> and <2> especially if the notion of *antibiotics* is redundant.

1. **C0003234: Anthracycline Antibiotics (anthracyclines <1>)**
2. **C0278941: prior anthracycline therapy (anthracyclines <3>)**
3. **C0282564: Anthracyclines (anthracyclines <2>)**

2.61 'Anus <n>' (degree 3)

Suppress <3> and <2> since they are not body parts.

1. C0003461: Anus (anus <1>)
2. **C0003462: Anus Diseases (Anus <3>)**
3. **C0870072: Procedures on Anus (Anus <2>)**

2.62 ‘APC <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0003315: Antigen-Presenting Cells (APC <1>)
2. C0033036: Atrial Premature Complexes (APC <2>)
3. C0162832: APC Gene (APC <3>)

2.63 ‘Arthrotomy <n>’ (degree 3)

Consider suppressing ‘Temporomandibular joint arthrotomy by dentist’ (sense <3>) or collapsing it with sense <2>.

1. C0185160: Arthrotomy (Arthrotomy <1>)
2. C0498275: Temporomandibular joint arthrotomy (ARTHROTOMY <2>)
3. **C0700234: Temporomandibular joint arthrotomy by dentist (ARTHROTOMY <3>)**

2.64 ‘Autograft <n>’ (degree 3)

Consider suppressing the ambiguous forms of ‘Autograft Material’ (sense <2>) because of the meaning difference.

1. C0040736: Transplantation, Autologous (Autograft <1>)
2. **C0559189: Autograft Material (Autograft <2>)**
3. C0702173: Autochthonous graft (Autograft <3>)

2.65 ‘B <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0006030: Boron (B <3>)
2. C0439105: Upper case Bee (B <1>)
3. C0439127: Lower Case Bee (b <2>)

2.66 ‘Balance <n>’ (degree 3)

Consider suppressing ambiguous forms for ‘Assessment of balance’ (sense <3>), a finding of the organism attribute (sense <1>).

1. C0014653: Equilibrium (Balance <1>)
2. C0205415: Balanced - adjective (Balance <2>)
3. **C0702095: Assessment of balance (Balance <3>)**

2.67 ‘Bar <n>’ (degree 3)

Consider suppressing ‘External fixator bar’ (sense <2>) and ‘Bar form’ (sense <3>) as being too specific.

1. **C0441233: External fixator bar (Bar <2>)**
2. C0687760: Taverns (bar <1>)
3. **C0993613: Bar form (Bar <3>)**

2.68 ‘Barbiturate <n>’ (degree 3)

Suppress ambiguous forms of ‘Poisoning by barbiturate (sense <3>) because it is an injury caused by the chemical.

1. C0004745: Barbiturates (Barbiturate <2>)
2. **C0161558: Poisoning by barbiturate (BARBITURATE <3>)**
3. C0220791: barbiturate (barbiturate <1>)

2.69 ‘Blood alcohol level <n>’ (degree 3)

Suppress ambiguous forms of ‘Blood alcohol level measurement’ since it is a ‘Laboratory Procedure’, not a ‘Laboratory or Test Result’. Also, consider collapsing senses <2> and <3> since they are both test results.

1. *C0428249: Blood alcohol level result (Blood alcohol level <2>)*
2. **C0542492: Blood alcohol level measurement (blood alcohol level <1>)**
3. *C0684262: Blood alcohol concentration (blood alcohol level <3>)*

2.70 ‘Blood letting <n>’ (degree 3)

Consider collapsing senses <1> and <3> since they are both therapeutic procedures.

1. C0005857: Bloodletting - Incision into vein (blood letting <2>)
2. **C0190979: Phlebotomy - Blood Draw Procedure (Blood letting <1>)**
3. *C0684257: Venesection (Blood letting <3>)*

2.71 ‘Blood supply <n>’ (degree 3)

Consider collapsing senses <2> and <3> since they are both organ or tissue functions.

1. *C0005839: Blood supply aspects (blood supply <2>)*
2. C0678861: Arterial blood supply (blood supply <1>)
3. **C0920762: blood supply <3> (blood supply <3>)**

2.72 ‘Brain <n>’ (degree 3)

Suppress the ambiguous forms of ‘Brain Diseases’ (sense <3>) because it is not a body part.

1. C0006104: Brain (brain <1>)
2. **C0006111: Brain Diseases (Brain <3>)**
3. C0595917: Brain Tissue Sample (BRAIN <2>)

2.73 ‘Brain tumor, childhood optic nerve glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms. (The next several cases involve the same concepts in the same way.)

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.74 ‘Brain tumor, childhood optic tract glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.75 ‘Brain tumor, optic nerve glioma, childhood <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.76 ‘Brain tumor, optic tract glioma, childhood <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.77 ‘Brain tumor, pediatric optic nerve glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.78 ‘Brain tumor, pediatric optic tract glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.79 ‘C <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0439106: Upper case sea (C <1>)
2. C0439128: Lower case sea (c <2>)
3. C0596255: Carbon ion (C <3>)

2.80 ‘CA <n>’ (degree 3)

Suppress ambiguous forms of ‘Calcium measurement’ (sense <3>) because it is a ‘Laboratory Procedure’, not a substance. Also, suppress the remaining ambiguous forms for MetaMap.

1. C0006675: Calcium (CA <2>)
2. C0050385: AC protocol (CA <1>)
3. **C0201925: Calcium measurement (Ca <3>)**

2.81 'CAD <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0010054: Coronary Arteriosclerosis (CAD <2>)
2. C0170509: cyclophosphamide/dacarbazine/doxorubicin protocol (CAD <3>)
3. C0280573: cytarabine/daunorubicin (CAD <1>)

2.82 'Cast <n>' (degree 3)

Suppress the abbreviatory sense <2> (MetaMap only).

1. C0179686: Orthopedic Cast (CAST <3>)
2. C0302143: Casts body substance (Cast <1>)
3. C0687709: Children of Alcoholics Screening Test (CAST <2>)

2.83 'Cat <n>' (degree 3)

Suppress the abbreviatory sense <2> (MetaMap only).

1. C0007450: Felis catus (Cat <1>)
2. C0040405: X-Ray Computed Tomography (CAT <2>)
3. C0677516: Feline species (cat <3>)

2.84 'Cave <n>' (degree 3)

Suppress the abbreviatory senses <2> and <1> (MetaMap only).

1. C0058928: ECHO protocol (CAVE <2>)
2. C0059914: EVAC protocol (CAVE <1>)
3. C0600051: Cavern (Cave <3>)

2.85 'CDV <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0054889: cyclophosphamide/doxorubicin/vincristine protocol (CDV <2>)
2. C0056632: cyclophosphamide/dacarbazine/vincristine protocol (CDV <1>)
3. C0286079: Cidofovir (CDV <3>)

2.86 'Central nervous system tumor, optic nerve glioma, childhood <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.87 ‘Central nervous system tumor, optic tract glioma, childhood <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.88 ‘Central venous pressure <n>’ (degree 3)

Suppress ‘Measurement of central venous pressure’ (sense <3>) and ‘CVP Finding - Central venous pressure’ (sense <2>) because they are a ‘Diagnostic Procedure’ and ‘Laboratory or Test Result’, respectively, not an attribute.

1. **C0199666: Measurement of central venous pressure (Central venous pressure <3>)**
2. **C0428640: CVP Finding - Central venous pressure (Central venous pressure <2>)**
3. C0520454: Central Venous Pressure-Biological function (Central Venous Pressure <1>)

2.89 ‘Cervical discharge <n>’ (degree 3)

Consider suppressing the ambiguous forms of ‘Pathologic Cervical Discharge’ (sense <2>) as being too specific.

1. C0235664: Physiologic Cervical Discharge (Cervical discharge <1>)
2. **C0553737: Pathologic Cervical Discharge (CERVICAL DISCHARGE <2>)**
3. C0702246: Cervical discharge observation (Cervical discharge <3>)

2.90 ‘Chemotherapy <n>’ (degree 3)

Consider collapsing senses <1> and <3> since they are both therapeutic procedures.

1. **C0013216: Pharmacotherapy (Chemotherapy <1>)**
2. C0013217: pharmacotherapeutic (chemotherapy <2>)
3. **C0392920: Chemotherapy-Oncologic Procedure (Chemotherapy <3>)**

2.91 ‘Childhood brain tumor, optic nerve glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.92 ‘Childhood brain tumor, optic tract glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.93 ‘Childhood cns tumor, optic nerve glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.94 ‘Childhood cns tumor, optic tract glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.95 ‘Childhood optic nerve glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.96 ‘Childhood optic tract glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.97 ‘Citrate <n>’ (degree 3)

Suppress ‘Citrate measurement’ (sense <2>) because it is a ‘Laboratory Procedure’, not a substance.

1. C0008857: Citrates (Citrate <1>)
2. **C0201956: Citrate measurement (Citrate <2>)**
3. C0376259: Citrate (Citrate <3>)

2.98 ‘Class 1 alpha chain <n>’ (degree 3)

Suppress all ambiguous forms as being too specific.

1. **C0427360: Human leucocyte antigen A genotype (Class 1 alpha chain <1>)**
2. **C0427361: Human leucocyte antigen B genotype (Class 1 alpha chain <2>)**
3. **C0427362: Human leucocyte antigen C genotype (Class 1 alpha chain <3>)**

2.99 ‘Class I malocclusion <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> since they are therapies, not anatomic abnormalities.

1. C0399523: Class I malocclusion (Class I malocclusion <1>)
2. **C0498320: Class I malocclusion therapy (CLASS I MALOCCLUSION <2>)**
3. **C0498322: Atypical class I malocclusion therapy (CLASS I MALOCCLUSION <3>)**

2.100 'Class III malocclusion <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> since they are therapies, not anatomic abnormalities.

1. C0399526: Class III malocclusion (Class III malocclusion <1>)
2. **C0498321: Transitional class III malocclusion therapy (CLASS III MALOCCLUSION <2>)**
3. **C0498324: Permanant class III malocclusion therapy (CLASS III MALOCCLUSION <3>)**

2.101 'CNS tumor, childhood optic nerve glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.102 'CNS tumor, pediatric optic nerve glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.103 'CNS tumor, pediatric optic tract glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (<1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (<2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (<3>)**

2.104 'Complications of surgical and medical care, not elsewhere classified <n>' (degree 3)

All ambiguous forms are generalizations and should be suppressed.

1. **C0178335: Complications of surgical and medical care NEC in RCD99 (<3>)**
2. **C0869271: Complications of surgical and medical care NEC in ICD10 (<1>)**
3. **C0869272: Complications of surgical and medical care NEC in ICD2002 (<2>)**

2.105 'Conjunctiva <n>' (degree 3)

Suppress the ambiguous forms for senses <4> and <5> because they are not body parts.

1. C0009758: conjunctiva (Conjunctiva <1>)

2. **C0009759: Conjunctival Diseases (conjunctiva <4>)**
3. **C0872390: Procedures on conjunctiva (Conjunctiva <5>)**

2.106 'Control <n>' (degree 3)

Suppress senses <2> and <3> since they are brand names (MetaMap only).

1. C0243148: control (control <1>)
2. **C0308718: CONTROL veterinary product (CONTROL <2>)**
3. **C0728976: Control brand of phenylpropanolamine (Control <3>)**

2.107 'Cortex <n>' (degree 3)

Suppress the ambiguous forms for senses <3> and <1> because they are not body parts.

1. C0001613: Adrenal Cortex (Cortex <2>)
2. **C0001614: Adrenal Cortex Diseases (Cortex <3>)**
3. **C0595905: cortex bone disorders (cortex <1>)**

2.108 'CPDD <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0008838: Cisplatin (CPDD <3>)
2. C0056451: CPDD protocol-altretamine/cisplatin/cyclophosphamide/doxorubicin (CPDD <1>)
3. C0553730: Calcium pyrophosphate deposition disease (CPDD <2>)

2.109 'CPI <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0009825: Consumer Price Index (CPI <2>)
2. C0451055: California personality inventory (CPI <3>)
3. C0671646: cyclopropapyrroloindole (CPI <1>)

2.110 'Cultural deprivation <n>' (degree 3)

Consider suppressing 'Encounter due to cultural deprivation' (sense <3>) as being too specific.

1. C0010449: Cultural deprivation (cultural deprivation <2>)
2. C0037421: Social isolation (Cultural deprivation <1>)
3. **C0221481: Encounter due to cultural deprivation (Cultural deprivation <3>)**

2.111 'Cytomegalovirus <n>' (degree 3)

Suppress 'Cytomegalovirus Infections' (sense <3>) because it is a 'Disease or Syndrome', not a 'Virus'.

1. **C0010823: Cytomegalovirus Infections (Cytomegalovirus <3>)**
2. C0010825: Cytomegalovirus (cytomegalovirus <1>)
3. C0677047: Genus: Human cytomegalovirus group (Cytomegalovirus <2>)

2.112 ‘DA <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0280573: cytarabine/daunorubicin (DA <2>)
2. C0332151: Asymptomatic diagnosis of (DA <1>)
3. C0678223: dalton (Da <3>)

2.113 ‘DAP - diastolic arterial pressure <n>’ (degree 3)

Consider removing abbreviation from ambiguous string. Suppress ambiguous forms (MetaMap only).

1. C0428883: Diastolic blood pressure (DAP - Diastolic arterial pressure <1>)
2. C0428884: Non invasive diastolic arterial pressure (DAP - Diastolic arterial pressure <2>)
3. C0428885: Invasive diastolic arterial pressure (DAP - Diastolic arterial pressure <3>)

2.114 ‘Deaf mutism, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0155553: Deaf mutism NEC in RCD99 (Deaf mutism, not elsewhere classified <3>)**
2. **C0869282: Deaf mutism NEC in ICD10 (Deaf mutism, not elsewhere classified <1>)**
3. **C0869284: Deaf mutism NEC in MDR40 (Deaf mutism, not elsewhere classified <2>)**

2.115 ‘Depressed <n>’ (degree 3)

Consider suppressing ‘Depressed fracture’ (sense <1>) as being too specific.

1. C0011581: Depressive disorder (Depressed <3>)
2. **C0332759: Depressed fracture (Depressed <1>)**
3. C0344315: Depressed mood (Depressed <2>)

2.116 ‘Depression <n>’ (degree 3)

Consider suppressing ‘Cancer patients and suicide and depression’ (sense <3>) as being too specific.

1. C0011570: Mental Depression (Depression <1>)
2. C0460137: Depression motion (Depression <2>)
3. **C0812393: Cancer patients and suicide and depression (depression <3>)**

2.117 ‘Depressive disorder, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0868892: Depressive disorder NEC in ICD2002 (Depressive disorder, not elsewhere classified <1>)**
2. **C0868893: Depressive disorder NEC in MDR40 (Depressive disorder, not elsewhere classified <3>)**
3. **C0868894: Depressive disorder NEC in CCS99 (Depressive disorder, not elsewhere classified <2>)**

2.118 ‘Dialysis, extracorporeal <n>’ (degree 3)

Consider suppressing ‘Encounter for extracorporeal dialysis’ (sense <2>) as being too specific.

1. C0019004: Hemodialysis (Dialysis, Extracorporeal <1>)
2. **C0260771: Encounter for extracorporeal dialysis (Dialysis, extracorporeal <2>)**
3. C0917872: Extracorporeal Dialysis (Dialysis, Extracorporeal <3>)

2.119 ‘Diastema <n>’ (degree 3)

Consider suppressing sense <2> and sense <3> as being too specific.

1. C0011998: Diastema of Teeth (Diastema <3>)
2. **C0399545: Anterior Diastema of Teeth (Diastema <1>)**
3. **C0399546: Posterior Diastema of Teeth (Diastema <2>)**

2.120 ‘Disorders of meninges, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0795685: Disorders of meninges NEC in ICD10 (Disorders of meninges, not elsewhere classified <1>)**
2. **C0869492: Disorders of meninges NEC in ICD2002 (Disorders of meninges, not elsewhere classified <2>)**
3. **C0869493: Disorders of meninges NEC in MDR40 (Disorders of meninges, not elsewhere classified <3>)**

2.121 ‘Displacement <n>’ (degree 3)

The ambiguities for ‘Displacement <n>’ and ‘Displacements <n>’ are inconsistent. ‘Qualitative Displacement’ (sense <3>) is not included in the concepts with ‘Displacements <n>’ as an ambiguous string.

1. C0012725: Psychologic Displacement (Displacement <1>)
2. C0012727: Spatial Displacement (Displacement <2>)
3. C0456080: Qualitative Displacement (Displacement <3>)

2.122 ‘Displacements <n>’ (degree 3)

The ambiguities for ‘Displacement <n>’ and ‘Displacements <n>’ are inconsistent. ‘Displacement - action’ (sense <3>) is not included in the concepts with ‘Displacement <n>’ as an ambiguous string.

1. C0012725: Psychologic Displacement (Displacements <2>)
2. C0012727: Spatial Displacement (DISPLACEMENTS <1>)
3. C0441526: Displacement - action (Displacements <3>)

2.123 ‘Disruption of operation wound, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0302418: Disruption of operation wound NEC in ICD10 (Disruption of operation wound, not elsewhere classified <3>)**

2. **C0877699: Disruption of operation wound NEC in MDR40 (Disruption of operation wound, not elsewhere classified <1>)**
3. **C0877700: Disruption of operation wound NEC in ICD91 (Disruption of operation wound, not elsewhere classified <2>)**

2.124 'Divorce <n>' (degree 3)

Consider suppressing 'Encounter due to family disruption' (sense <2>) as being too specific.

1. C0012828: Divorce (divorce <1>)
2. C0086170: Divorced state (Divorce <3>)
3. **C0481798: Encounter due to family disruption (Divorce <2>)**

2.125 'DM <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0011633: Dermatomyositis (DM <1>)
2. C0011849: Diabetes Mellitus (dm <2>)
3. C0439199: decimeter (dm <3>)

2.126 'DT <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0086126: 2'-Deoxythymidine (dT <2>)
2. C0678226: Due to (DT <1>)
3. C0740010: DT pack size (DT <3>)

2.127 'Ear piercing <n>' (degree 3)

Consider suppressing 'Encounter due to ear piercing' (sense <2>) as being too specific.

1. C0198023: Piercing of external ear (Ear piercing <1>)
2. C0411665: Piercing of ear lobe (Ear piercing <3>)
3. **C0700645: Encounter due to ear piercing (Ear piercing <2>)**

2.128 'Ectopic hormone secretion, not elsewhere classified <n>' (degree 3)

Suppress all senses as being too specific.

1. **C0869496: Ectopic hormone secretion NEC in ICD10 (Ectopic hormone secretion, not elsewhere classified <1>)**
2. **C0869497: Ectopic hormone secretion NEC in ICD2002 (Ectopic hormone secretion, not elsewhere classified <3>)**
3. **C0869498: Ectopic hormone secretion NEC in MDR40 (Ectopic hormone secretion, not elsewhere classified <2>)**

2.129 'Epiphysis <n>' (degree 3)

Suppress 'Epiphysis disorders' (sense <1>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Consider suppressing sense <3> as being too specific.

1. C0014570: Epiphysis of bone (epiphysis <2>)
2. **C0031939: Pineal gland (Epiphysis <3>)**
3. **C0700136: Epiphysis disorders (epiphysis <1>)**

2.130 'Esophagus <n>' (degree 3)

Suppress 'Esophageal Diseases' (sense <6>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on the esophagus' (sense <5>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. **C0014852: Esophageal Diseases (Esophagus <6>)**
2. C0014876: Esophagus (Esophagus <1>)
3. **C0872395: Procedures on the esophagus (Esophagus <5>)**

2.131 'Ethylene glycol <n>' (degree 3)

Suppress 'Ethylene glycol measurement' (sense <3>) because it is a 'Laboratory Procedure', not a substance.

1. C0015083: ethylene glycol (ethylene glycol <1>)
2. C0015086: Ethylene Glycols (Ethylene glycol <2>)
3. **C0202382: Ethylene glycol measurement (Ethylene glycol <3>)**

2.132 'External ear <n>' (degree 3)

Suppress 'Diseases of external ear' (sense <3>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on the External Ear' (sense <2>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0013453: External Ear (external ear <1>)
2. **C0155388: Diseases of external ear (external ear <3>)**
3. **C0869644: Procedures on External Ear (External Ear <2>)**

2.133 'Extracorporeal dialysis <n>' (degree 3)

Consider suppressing 'Encounter for extracorporeal dialysis' (sense <2>) as being too specific.

1. C0019004: Hemodialysis (<1>)
2. **C0260771: Encounter for extracorporeal dialysis (Extracorporeal dialysis <2>)**
3. C0917872: Extracorporeal Dialysis (Extracorporeal Dialysis <3>)

2.134 'Facial palsy <n>' (degree 3)

Consider suppressing 'Facial Nerve Diseases' (sense <3>) as being too general.

1. **C0015464: Facial Nerve Diseases (Facial palsy <3>)**
2. C0015469: Facial paralysis (Facial palsy <1>)
3. C0376175: Bell Palsy (Facial palsy <2>)

2.135 ‘Fallopian tube <n>’ (degree 3)

Suppress ‘Fallopian Tube Diseases’ (sense <4>) because it is a ‘Disease or Syndrome’, not a ‘Body Part, Organ, or Organ Component’. Suppress ‘Procedures on the fallopian tube’ (sense <3>) because it is a ‘Therapeutic or Preventive Procedure’, not a ‘Body Part, Organ, or Organ Component’.

1. **C0015556: Fallopian Tube Diseases (fallopian tube <4>)**
2. C0015560: Mammalian Oviducts (Fallopian tube <1>)
3. **C0872396: Procedures on the fallopian tube (Fallopian Tube <3>)**

2.136 ‘FDP <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0060663: formycin diphosphate (FDP <1>)
2. C0163275: Fibrin split products (FDP <2>)
3. C0851147: Followup Drinker Profile (FDP <3>)

2.137 ‘Frequency <n>’ (degree 3)

Consider suppressing ‘Increased frequency of micturition’ (sense <3>) as being too specific.

1. **C0042023: Increased frequency of micturition (Frequency <3>)**
2. C0376249: With frequency (frequency <1>)
3. C0439603: Frequencies (time pattern) (Frequency <2>)

2.138 ‘Frontal dysplasia <n>’ (degree 3)

Consider suppressing all senses as being too specific.

1. **C0432114: Tessier cleft 10 of facial cleft (Frontal dysplasia <1>)**
2. **C0432115: Tessier cleft 11 of facial cleft (Frontal dysplasia <2>)**
3. **C0432116: Tessier cleft 12 of facial cleft (Frontal dysplasia <3>)**

2.139 ‘FSH <n>’ (degree 3)

Suppress ‘Follicle stimulating hormone measurement’ (sense <3>) because it is a ‘Laboratory Procedure’, not a substance. Suppress other ambiguous forms (MetaMap only).

1. C0016424: Follicle stimulating hormone injectable (FSH <2>)
2. **C0202022: Follicle stimulating hormone measurement (FSH <3>)**
3. C0733758: Follicle Stimulating Hormone (FSH <1>)

2.140 ‘G <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0439110: upper case gee (<1>)
2. C0439208: gram (<2>)
3. C0947617: <3> (g <3>)

2.141 ‘Genetic counseling <n>’ (degree 3)

Consider suppressing ‘Encounter due to genetic counseling’ (sense <3>) as being too specific.

1. C0017382: Genetic Counseling (Genetic Counseling <1>)
2. C0017382: Genetic Counseling (Genetic Counseling <2>)
3. **C0599986: Encounter due to genetic counseling (Genetic counseling <3>)**
4. C0886412: elements of cancer genetics risk assessment and counseling (genetic counseling <4>)

2.142 ‘Glioma, childhood optic nerve <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (glioma, childhood optic nerve <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (glioma, childhood optic nerve <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (glioma, childhood optic nerve <3>)**

2.143 ‘Glioma, childhood optic tract <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (glioma, childhood optic tract <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (glioma, childhood optic tract <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (glioma, childhood optic tract <3>)**

2.144 ‘Glioma, pediatric optic nerve <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (glioma, pediatric optic nerve <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (glioma, pediatric optic nerve <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (glioma, pediatric optic nerve <3>)**

2.145 ‘Glioma, pediatric optic tract <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (glioma, pediatric optic tract <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (glioma, pediatric optic tract <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (glioma, pediatric optic tract <3>)**

2.146 ‘Gold <n>’ (degree 3)

Suppress ‘Gold measurement’ (sense <2>) because it is a ‘Laboratory Procedure’, not a substance.

1. C0018026: Gold (Gold <1>)
2. **C0337451: Gold measurement (Gold <2>)**
3. C0947649: Gold preparation (gold <3>)

2.147 ‘Group b streptococcus <n>’ (degree 3)

Consider suppressing ‘Carrier or suspected carrier of Group B streptococcus’ (sense <2>) as being too specific.

1. C0038403: Streptococcus agalactiae (Group B streptococcus <1>)
2. C0579233: Streptococcus Lancefield group B (Group B streptococcus <3>)
3. **C0700297: Carrier or suspected carrier of Group B streptococcus (Group B streptococcus <2>)**

2.148 ‘Hereditary disturbances in tooth structure, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0868847: Hereditary disturbances in tooth structure NEC in ICD10 (Hereditary disturbances in tooth structure, not elsewhere classified <1>)**
2. **C0868848: Hereditary disturbances in tooth structure NEC in ICD2002 (Hereditary disturbances in tooth structure, not elsewhere classified <3>)**
3. **C0868849: Hereditary disturbances in tooth structure NEC in MDR40 (Hereditary disturbances in tooth structure, not elsewhere classified <2>)**

2.149 ‘HRF <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0020660: Hypothalamic Releasing Factor (HRF <4>)
2. C0107935: homologous restriction factor (HRF <2>)
3. C0687687: HRF brand of gonadorelin (HRF <1>)
4. C0687687: HRF brand of gonadorelin (HRF <3>)

2.150 ‘HSP <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0018850: Heat shock proteins (HSP <3>)
2. C0034152: Henoch-Schoenlein Purpura (HSP <1>)
3. C0243043: Heat-Shock Proteins 70 (HSP <2>)

2.151 ‘Hypertrophic <n>’ (degree 3)

Consider suppressing ‘Hypertrophic disorder of skin, unspecified’ (sense <1>) as being too specific.

1. C0020564: Hypertrophy (Hypertrophic <3>)

2. **C0263630: Hypertrophic disorder of skin, unspecified (Hypertrophic <1>)**
3. C0333959: Hypertrophic (Hypertrophic <2>)

2.152 'I <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0021968: Iodine (I <3>)
2. C0439068: Upper Case Eye (I <1>)
3. C0439135: Lower case eye (i <2>)

2.153 'Ice <n>' (degree 3)

Suppress 'ifosfamide/cyclophosphamide/etoposide combination chemotherapy' (sense <2>) (MetaMap only).

1. C0020746: Ice (ice <1>)
2. C0025611: Methamphetamine (ice <3>)
3. C0700305: ifosfamide/cyclophosphamide/etoposide combination chemotherapy (ICE <2>)

2.154 'IN <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0021223: Indium (IN <2>)
2. C0332285: Within (In <1>)
3. C0439204: inches (in <3>)

2.155 'Inner ear <n>' (degree 3)

Suppress 'Diseases of inner ear' (sense <1>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on the Inner Ear' (sense <3>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0022889: Labyrinth (inner ear <2>)
2. **C0494559: Diseases of inner ear (inner ear <1>)**
3. **C0869669: Procedures on Inner Ear (Inner Ear <3>)**

2.156 'IUD contraceptive claim <n>' (degree 3)

Consider suppressing 'FP1002 status' (sense <1>) and 'GP103 status' (sense <2>) as being too specific.

1. **C0421691: FP1002 status (IUD contraceptive claim <1>)**
2. **C0555478: GP103 status (IUD contraceptive claim <2>)**
3. C0600085: Intrauterine contraceptive device claim (IUD contraceptive claim <3>)

2.157 'Jaw <n>' (degree 3)

Consider suppressing 'Assessment of active jaw joint movement' (sense <2>) and 'Assessment of passive jaw joint movement' (sense <3>) as being too specific.

1. C0022359: Jaw (Jaw <1>)
2. **C0517670: Assessment of active jaw joint movement (Jaw <2>)**
3. **C0687147: Assessment of passive jaw joint movement (Jaw <3>)**

2.158 'K <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0032821: Potassium (K <3>)
2. C0439112: Upper Case Kay (K <1>)
3. C0439137: Lower case kay (k <2>)

2.159 'Lactate <n>' (degree 3)

Suppress 'Lactic acid measurement' (sense <2>) because it is a 'Laboratory Procedure', not a substance.

1. C0022924: Lactates (lactate <3>)
2. **C0202115: Lactic acid measurement (Lactate <2>)**
3. C0376261: Lactate (Lactate <1>)

2.160 'Larynx <n>' (degree 3)

Suppress 'Laryngeal Diseases' (sense <6>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on larynx' (sense <5>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. **C0023051: Laryngeal Diseases (Larynx <6>)**
2. C0023078: Larynx (Larynx <1>)
3. **C0872392: Procedures on larynx (Larynx <5>)**

2.161 'LD <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0011911: Laboratory Diagnosis (LD <1>)
2. C0022917: Lactate Dehydrogenase (LD <2>)
3. C0228342: Lateral Dorsal Nucleus (LD <3>)

2.162 'LDH <n>' (degree 3)

Suppress 'Lactate dehydrogenase measurement' (sense <2>) because it is a 'Laboratory Procedure', not a substance. In addition, suppress the remaining abbreviatory forms for MetaMap.

1. C0022917: Lactate Dehydrogenase (LDH <1>)
2. **C0202113: Lactate dehydrogenase measurement (LDH <2>)**
3. C0851148: Lifetime Drinking History (LDH <3>)

2.163 ‘Lead <n>’ (degree 3)

Suppress ‘Lead measurement, quantitative’ (sense <2>) because it is a ‘Laboratory Procedure’, not a substance.

1. C0023175: Lead (Lead <1>)
2. **C0373667: Lead measurement, quantitative (Lead <2>)**
3. C0947650: Lead preparation (LEAD <3>)

2.164 ‘Litigation <n>’ (degree 3)

Consider suppressing ‘Litigation affecting health status’ (sense <3>) as being too specific.

1. C0079706: Litigation (Litigation <1>)
2. C0220872: Legal procedural aspects (litigation <2>)
3. **C0684331: Litigation affecting health status (Litigation <3>)**

2.165 ‘Lumbosacral disc <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0223563: L5/S1 lumbosacral disc (Lumbosacral disc <1>)**
2. **C0223578: L6/S1 lumbosacral disc (Lumbosacral disc <3>)**
3. **C0447845: L4/S1 lumbosacral disc (Lumbosacral disc <2>)**

2.166 ‘Mace <n>’ (degree 3)

Suppress ‘cytarabine/etoposide/methotrexate’ (sense <3>) (MetaMap only) because it is abbreviatory. Suppress ‘Mace brand of omega-Chloroacetophenone’ (sense <1>) (MetaMap only) because it is a brand name.

1. C0280578: cytarabine/etoposide/methotrexate (MACE <3>)
2. C0349381: Mace Spice (Mace <2>)
3. C0813802: Mace brand of omega-Chloroacetophenone (Mace <1>)

2.167 ‘Machete <n>’ (degree 3)

Suppress ‘Machete brand of butachlor’ (sense <3>) (MetaMap only) because it is a brand name.

1. C0054233: butachlor (Machete <1>)
2. C0126701: Elops affinis (Machete <2>)
3. C0919296: Machete brand of butachlor (Machete <3>)

2.168 ‘Malt <n>’ (degree 3)

Suppress senses <1> and <3> (MetaMap only) because they are abbreviatory.

1. C0024651: Malt Grain (Malt <2>)
2. C0451327: Munich alcoholism test (MALT <1>)
3. C0599921: mucosa-associated lymphoid tissue (MALT <3>)

2.169 ‘Map <n>’ (degree 3)

Suppress senses <1> and <3> (MetaMap only) because they are abbreviatory.

1. C0024779: Maps (Map <2>)
2. C0065864: Medroxyprogesterone 17-Acetate (MAP <1>)
3. C0520852: Mean arterial pressure (MAP <3>)

2.170 ‘MB-1 <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0244075: 1-alpha-methyl-8-methoxy-6,7-dihydroxy-1-(6,7-dimethoxy-3-phthalidyl)-1,2,3,4-tetrahydroisoquinoline 52246582 (MB-1 <1>)
2. C0286618: CD79a antigen (MB-1 <2>)
3. C0971887: MB-1 <3> (MB-1 <3>)

2.171 ‘Medulla <n>’ (degree 3)

Suppress ‘Disease of adrenal medulla’ (sense <3>) because it is a ‘Disease or Syndrome’, not a ‘Body Part, Organ, or Organ Component’.

1. C0001629: Adrenal Medulla (Medulla <2>)
2. C0025148: Medulla Oblongata (medulla <1>)
3. **C0679431: Disease of adrenal medulla (Medulla <3>)**

2.172 ‘MF <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0026948: Mycosis Fungoides (MF <2>)
2. C0280603: fluorouracil/methotrexate (MF <1>)
3. C0332295: Metastatic from (MF <3>)

2.173 ‘MM <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0026254: Mitomycins (MM <1>)
2. C0439200: millimeter (mm <2>)
3. C0439279: millimole/liter (mM <3>)

2.174 ‘MR <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0025362: Mental Retardation (mr <3>)
2. C0026266: Mitral Valve Insufficiency (mr <1>)
3. C0311284: Lipoid dermatoarthritis (MR <2>)

2.175 ‘N <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0028158: Nitrogen (N <3>)
2. C0347979: Upper Case En (N <1>)
3. C0439138: Lower case en (n <2>)

2.176 'Neck <n>' (degree 3)

Suppress 'Assessment of active neck movement' (sense <2>) and 'Assessment of passive neck movement' (sense <3>) because they are a 'Finding', not a 'Body Location or Region'.

1. C0027530: Neck (neck <1>)
2. **C0684334: Assessment of active neck movement (Neck <2>)**
3. **C0684335: Assessment of passive neck movement (Neck <3>)**

2.177 'Nose <n>' (degree 3)

Suppress 'Nose Diseases' (sense <3>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on Nose' (sense <2>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0028429: Nose (nose <1>)
2. **C0028432: Nose Diseases (Nose <3>)**
3. **C0869679: Procedures on Nose (Nose <2>)**

2.178 'OH <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0063146: Hydroxyl Radical (OH <1>)
2. C0220853: Hydroxide Ion (OH <2>)
3. C0700307: hydroxyl group (OH <3>)

2.179 'Open reduction of dislocation <n>' (degree 3)

Consider suppressing 'Open reduction of temporomandibular dislocation by dentist' (sense <3>) as being too specific.

1. C0185392: Open reduction of dislocation (Open reduction of dislocation <2>)
2. C0185711: Open reduction of temporomandibular dislocation (OPEN REDUCTION OF DISLOCATION <1>)
3. **C0700236: Open reduction of temporomandibular dislocation by dentist (OPEN REDUCTION OF DISLOCATION <3>)**

2.180 'Open wound of other and multiple sites <n>' (degree 3)

Suppress all senses as being too specific.

1. **C0152041: Open wound of ear and other and multiple sites (Open wound of other and multiple sites <1>)**
2. **C0152042: Open wound of face and other and multiple sites (Open wound of other and multiple sites <2>)**

3. **C0152043: Open wound of mouth and other and multiple sites (Open wound of other and multiple sites <3>)**

2.181 ‘Open wound of other and multiple sites, complicated <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0490056: Open wound of ear, other and multiple sites, complicated (Open wound of other and multiple sites, complicated <1>)**
2. **C0490058: Open wound of face, other and multiple sites, complicated (Open wound of other and multiple sites, complicated <2>)**
3. **C0490060: Open wound of internal structure of mouth, other and multiple sites, complicated (Open wound of other and multiple sites, complicated <3>)**

2.182 ‘Optic nerve glioma, childhood <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (optic nerve glioma, childhood <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (optic nerve glioma, childhood <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (optic nerve glioma, childhood <3>)**

2.183 ‘Optic nerve glioma, pediatric <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (optic nerve glioma, pediatric <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (optic nerve glioma, pediatric <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (optic nerve glioma, pediatric <3>)**

2.184 ‘Optic tract glioma, childhood <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (optic tract glioma, childhood <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (optic tract glioma, childhood <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (optic tract glioma, childhood <3>)**

2.185 ‘Optic tract glioma, pediatric <n> (degree 3)’

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (optic tract glioma, pediatric <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (optic tract glioma, pediatric <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (optic tract glioma, pediatric <3>)**

2.186 ‘Osteopathy <n>’ (degree 3)

Suppress ‘Bone Diseases’ (sense <3>) because it is a ‘Disease or Syndrome’, not a ‘Biomedical Occupation or Discipline’ or ‘Therapeutic or Preventive Procedure’.

1. **C0005940: Bone Diseases (Osteopathy <3>)**
2. C0029450: Osteopathic Medicine (Osteopathy <2>)
3. C0419203: Osteopathic procedures (Osteopathy <1>)

2.187 ‘Other adverse food reactions, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0478481: Other adverse food reactions NEC in RCD99 (Other adverse food reactions, not elsewhere classified <1>)**
2. **C0869098: Other adverse food reactions NEC in ICD10 (Other adverse food reactions, not elsewhere classified <2>)**
3. **C0919405: Other adverse food reactions NEC in ICD2002 (Other adverse food reactions, not elsewhere classified <3>)**

2.188 ‘Other complications of labor and delivery, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0868754: Other complications of labor and delivery NEC in ICD10 (Other complications of labor and delivery, not elsewhere classified <1>)**
2. **C0868755: Other complications of labor and delivery NEC in ICD2002 (Other complications of labor and delivery, not elsewhere classified <2>)**
3. **C0868756: Other complications of labour and delivery NEC in MDR40 (Other complications of labor and delivery, not elsewhere classified <3>)**

2.189 ‘Other complications of procedures, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0302416: Other complications of procedures NEC in RCD99 (Other complications of procedures, not elsewhere classified <1>)**
2. **C0869285: Other complications of procedures NEC in ICD10 (Other complications of procedures, not elsewhere classified <2>)**

3. **C0869287: Other complications of procedures NEC in MDR40 (Other complications of procedures, not elsewhere classified <3>)**

2.190 ‘Oxygen saturation <n>’ (degree 3)

Suppress ‘Oxygen saturation test result’ (sense <2>) and ‘Oxygen saturation measurement’ (sense <3>) because they are not a ‘Molecular Function’. The former has semantic type ‘Organism Attribute’ (which seems odd), and the latter is a ‘Laboratory Procedure’.

1. C0369768: Molecular oxygen saturation (Oxygen saturation <1>)
2. **C0483415: Oxygen saturation test result (OXYGEN SATURATION <2>)**
3. **C0523807: Oxygen saturation measurement (Oxygen saturation <3>)**

2.191 ‘PAC <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0033036: Atrial Premature Complexes (PAC <2>)
2. C0280547: cisplatin/cyclophosphamide/doxorubicin (PAC <1>)
3. C0700105: Political action committee (PAC <3>)

2.192 ‘Pancreas <n>’ (degree 3)

Suppress ‘Procedures on Pancreas’ (sense <5>) because it is a ‘Therapeutic or Preventive Procedure’, not a ‘Body Part, Organ, or Organ Component’.

1. C0030274: Pancreas (Pancreas <1>)
2. C0771711: Pancreas extract (PANCREAS <3>)
3. **C0869826: Procedures on Pancreas (Pancreas <5>)**

2.193 ‘Paracetamol <n>’ (degree 3)

Suppress ‘Acetaminophen Assay’ (sense <3>) because it is a ‘Laboratory Procedure’, not a substance.

1. C0000970: Acetaminophen (Paracetamol <2>)
2. C0355438: Paracetamol product (Paracetamol <1>)
3. **C0373527: Acetaminophen Assay (Paracetamol <3>)**

2.194 ‘Parathyroid <n>’ (degree 3)

Suppress ‘Procedures on parathyroid glands’ (sense <1>) because it is a ‘Therapeutic or Preventive Procedure’, not a ‘Body Part, Organ, or Organ Component’.

1. **C0030517: Disease of parathyroid glands (PARATHYROID <1>)**
2. C0030518: Parathyroid gland (parathyroid <2>)
3. C0304854: Parathyroid hormone preparation (PARATHYROID <3>)

2.195 ‘PB <n>’ (degree 3)

Suppress ‘Lead measurement’ (sense <3>) because it is a ‘Laboratory Procedure’, not a substance. In addition, suppress the remaining abbreviatory forms for MetaMap.

1. C0023175: Lead (PB <2>)
2. C0332148: Probable diagnosis (PB <1>)
3. **C0524167: Lead measurement (Pb <3>)**

2.196 ‘PCP <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0030855: Pentachlorophenol (PCP <3>)
2. C0031381: Phencyclidine (PCP <2>)
3. C0032305: Pneumonia, Pneumocystis carinii (pcp <4>)

2.197 ‘PD <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0030230: Palladium (Pd <1>)
2. C0332149: Possible (PD <2>)
3. C0946328: PUPILLARY DISTANCE (PD <3>)

2.198 ‘PE <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0031618: Phosphatidylethanolamines (PE <1>)
2. C0034065: Pulmonary Embolism (PE <3>)
3. C0078414: cisplatin/etoposide protocol (PE <2>)

2.199 ‘Pediatric brain tumor, optic nerve glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric brain tumor, optic nerve glioma <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric brain tumor, optic nerve glioma <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric brain tumor, optic nerve glioma <3>)**

2.200 ‘Pediatric brain tumor, optic tract glioma <n>’ (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric brain tumor, optic tract glioma <1>)

2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric brain tumor, optic tract glioma <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric brain tumor, optic tract glioma <3>)**

2.201 'Pediatric cns tumor, optic nerve glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric CNS tumor, optic nerve glioma <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric CNS tumor, optic nerve glioma <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric CNS tumor, optic nerve glioma <3>)**

2.202 'Pediatric cns tumor, optic tract glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric CNS tumor, optic tract glioma <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric CNS tumor, optic tract glioma <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric CNS tumor, optic tract glioma <3>)**

2.203 'Pediatric optic nerve glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric optic nerve glioma <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric optic nerve glioma <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric optic nerve glioma <3>)**

2.204 'Pediatric optic tract glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric optic tract glioma <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric optic tract glioma <2>)**

-
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric optic tract glioma <3>)**

2.205 'Pediatric visual pathway glioma <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific. Although sense <1> may well be appropriate, it probably would not hurt to suppress it, too, because of the complexity of the ambiguous forms.

1. C0278653: Optic Nerve Glioma, Childhood (pediatric visual pathway glioma <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (pediatric visual pathway glioma <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (pediatric visual pathway glioma <3>)**

2.206 'Perform routine activity (no selection; dispense as written) <n>' (degree 3)

Suppress all senses as being too specific.

1. **C0677196: Perform routine product choice (no selection; dispense as written) (Perform routine activity (no selection; dispense as written) <1>)**
2. **C0677201: Perform routine dosage choice (no selection; dispense as written) (Perform routine activity (no selection; dispense as written) <2>)**
3. **C0677209: Perform routine procurement (no selection; dispense as written) (Perform routine activity (no selection; dispense as written) <3>)**

2.207 'Pet, whole body, for recurrence of colorectal or colorectal metastatic cancer; gamma cameras only <n>' (degree 3)

It is unclear why these are three separate concepts. Consider merging into one concept.

1. **C0993913: PET, WHOLE BODY, FOR RECURRENCE OF COLORECTAL OR COLORECTAL METASTATIC CANCER; GAMMA CAMERAS ONLY <1> (PET, WHOLE BODY, FOR RECURRENCE OF COLORECTAL OR COLORECTAL METASTATIC CANCER; GAMMA CAMERAS ONLY <1>)**
2. **C0993914: PET, WHOLE BODY, FOR RECURRENCE OF COLORECTAL OR COLORECTAL METASTATIC CANCER; GAMMA CAMERAS ONLY <2> (PET, WHOLE BODY, FOR RECURRENCE OF COLORECTAL OR COLORECTAL METASTATIC CANCER; GAMMA CAMERAS ONLY <2>)**
3. **C0993915: PET, WHOLE BODY, FOR RECURRENCE OF COLORECTAL OR COLORECTAL METASTATIC CANCER; GAMMA CAMERAS ONLY <3> (PET, WHOLE BODY, FOR RECURRENCE OF COLORECTAL OR COLORECTAL METASTATIC CANCER; GAMMA CAMERAS ONLY <3>)**

2.208 'Phosphatidylglycerol <n>' (degree 3)

Suppress 'phosphatidylglycerol measurement' (sense <2>) because it is a 'Laboratory Procedure', not a substance.

1. C0031614: Phosphatidyl glycerol (phosphatidylglycerol <3>)
2. C0031619: Phosphatidylglycerols (PHOSPHATIDYLGLYCEROL <1>)

3. C0202172: Phosphatidylglycerol measurement (Phosphatidylglycerol <2>)**2.209 'Phosphorus <n>' (degree 3)**

Suppress 'Phosphorus measurement' (sense <1>) because it is a 'Laboratory Procedure', not a substance.

1. C0031705: Phosphorus (phosphorus <2>)
2. **C0202178: Phosphorus measurement (Phosphorus <1>)**
3. C0947648: Phosphorus preparation (phosphorus <3>)

2.210 'PI <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0034088: Pulmonary Valve Insufficiency (pi <1>)
2. C0483434: PI <2> (PI <2>)
3. C0812425: S-Phase Fraction (PI <3>)

2.211 'Pituitary <n>' (degree 3)

Suppress 'Pituitary Diseases' (sense <2>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'.

1. **C0032002: Pituitary Diseases (Pituitary <2>)**
2. C0032005: Pituitary Gland (Pituitary <1>)
3. C0032015: Pituitary Hormones (PITUITARY <3>)

2.212 'Poisoning by antidotes and chelating agents, not elsewhere classified <n>' (degree 3)

Suppress all senses as being too specific.

1. **C0302407: Poisoning by antidotes and chelating agents, NEC in ICD10 (Poisoning by antidotes and chelating agents, not elsewhere classified <3>)**
2. **C0869440: Poisoning by antidotes and chelating agents, NEC in ICD2002 (Poisoning by antidotes and chelating agents, not elsewhere classified <1>)**
3. **C0869441: Poisoning by antidotes and chelating agents, NEC in MDR40 (Poisoning by antidotes and chelating agents, not elsewhere classified <2>)**

2.213 'Poisoning by enzymes, not elsewhere classified <n>' (degree 3)

Suppress all senses as being too specific.

1. **C0869505: Poisoning by enzymes NEC in ICD10 (Poisoning by enzymes, not elsewhere classified <1>)**
2. **C0869507: Poisoning by enzymes NEC in ICD2002 (Poisoning by enzymes, not elsewhere classified <2>)**
3. **C0869508: Poisoning by enzymes NEC in MDR40 (Poisoning by enzymes, not elsewhere classified <3>)**

2.214 ‘Poisoning by vitamins, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0869509: Poisoning by vitamins NEC in ICD10 (Poisoning by vitamins, not elsewhere classified <1>)**
2. **C0869511: Poisoning by vitamins NEC in ICD2002 (Poisoning by vitamins, not elsewhere classified <3>)**
3. **C0869512: Poisoning by vitamins NEC in MDR40 (Poisoning by vitamins, not elsewhere classified <2>)**

2.215 ‘Posterior <n>’ (degree 3)

Suppress ‘Neurohypophyseal Diseases’ (sense <3>) because it is a ‘Disease or Syndrome’, not a ‘Body Part, Organ, or Organ Component’ or ‘Spatial Concept’.

1. C0032009: Pituitary Gland, Posterior (Posterior <1>)
2. C0205095: Dorsal (Posterior <2>)
3. **C0751438: Neurohypophyseal Diseases (Posterior <3>)**

2.216 ‘Pregnancy confirmed <n>’ (degree 3)

Consider suppressing ‘Encounter due to confirmation of pregnancy’ (sense <1>) as being too specific.

1. **C0033010: Encounter due to confirmation of pregnancy (Pregnancy confirmed <1>)**
2. C0549169: Confirmation of pregnancy (pregnancy confirmed <3>)
3. C0549206: Patient currently pregnant (Pregnancy confirmed <2>)

2.217 ‘PSI <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0439472: Pounds per square inch (psi <2>)
2. C0699833: Psychological Screening Inventory (PSI <1>)
3. C0815302: Problem Situation Inventory (PSI <3>)

2.218 ‘PT <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0032207: Platinum (Pt <1>)
2. C0175252: Paratenial Nucleus (Pt <3>)
3. C0560012: pint (pt <2>)

2.219 ‘PTC <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0015491: Factor IX (PTC <2>)
2. C0203085: Percutaneous transhepatic cholangiography (PTC <1>)
3. C0813143: Oncogene, RET (PTC <3>)

2.220 ‘PVC <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0032624: Polyvinyl Chloride (PVC <1>)
2. C0151636: Ventricular Premature Complexes (PVC <2>)
3. C0280556: cisplatin/cyclophosphamide/etoposide (PVC <3>)

2.221 pyruvate <n> (degree 3)

Suppress ‘Pyruvate measurement’ (sense <2>) because it is a ‘Laboratory Procedure’, not a substance.

1. C0034354: Pyruvates (pyruvate <3>)
2. C0244104: Pyruvate (Pyruvate <1>)
3. **C0302278: Pyruvate measurement (Pyruvate <2>)**

2.222 ‘RDA <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0267244: Right-sided displacement of abomasum (RDA <2>)
2. C0524786: Recommended Daily Allowances (RDA <1>)
3. C0597707: representational difference analysis (RDA <3>)

2.223 ‘Rectum <n>’ (degree 3)

Suppress ‘Rectal Diseases’ (sense <6>) because it is a ‘Disease or Syndrome’, not a ‘Body Part, Organ, or Organ Component’. Suppress ‘Procedures on Rectum’ (sense <5>) because it is a ‘Therapeutic or Preventive Procedure’, not a ‘Body Part, Organ, or Organ Component’.

1. **C0034882: Rectal Diseases (Rectum <6>)**
2. C0034896: Rectum (Rectum <1>)
3. **C0869814: Procedures on Rectum (Rectum <5>)**

2.224 ‘Release <n>’ (degree 3)

Suppress ‘Release brand abscission agent’ (sense <4>) (MetaMap only) because it is a brand name.

1. C0391871: Release procedure (Release <2>)
2. C0541720: Release brand abscission agent (Release <4>)
3. C0680255: Discharge (release) (release <3>)

2.225 ‘RPR <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0201405: Rapid plasma reagin test procedure (RPR <1>)
2. C0240917: Positive rpr (RPR <2>)
3. C0699912: Rapid plasma reagin (RPR <3>)

2.226 ‘S <n>’ (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0038774: Sulfur (S <3>)
2. C0439118: Upper case ess (S <1>)
3. C0457385: seconds (s <2>)

2.227 ‘Sacroiliitis, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0868862: Sacroiliitis NEC in ICD10 (Sacroiliitis, not elsewhere classified <1>)**
2. **C0868863: Sacroiliitis NEC in ICD2002 (Sacroiliitis, not elsewhere classified <2>)**
3. **C0868864: Sacroiliitis NEC in MDR40 (Sacroiliitis, not elsewhere classified <3>)**

2.228 ‘Sage <n>’ (degree 3)

Suppress ‘serial analysis of gene expression’ (sense <2>) (MetaMap only) because it is abbreviatory.

1. C0453265: Salvia officinalis (Sage <1>)
2. C0876956: serial analysis of gene expression (SAGE <2>)
3. C0939930: Sage preparation (SAGE <3>)

2.229 ‘SAP - systolic arterial pressure <n>’ (degree 3)

Consider removing abbreviation from ambiguous string. Suppress ambiguous forms (MetaMap only).

1. C0428880: Systolic blood pressure (SAP - Systolic arterial pressure <1>)
2. C0428881: Non invasive systolic arterial pressure (SAP - Systolic arterial pressure <2>)
3. C0428882: Invasive systolic arterial pressure (SAP - Systolic arterial pressure <3>)

2.230 ‘SE <n>’ (degree 3)

Suppress ‘Selenium measurement’ (sense <3>) because it is a ‘Laboratory Procedure’, not a substance. In addition, suppress the remaining abbreviatory forms for MetaMap.

1. C0036581: Selenium (SE <2>)
2. C0332138: Secondary diagnosis (SE <1>)
3. **C0373721: Selenium measurement (Se <3>)**

2.231 ‘Self-control <n>’ (degree 3)

Consider suppressing ‘Child Self-control indicator’ (sense <1>) as being too specific.

1. **C0517032: Child Self-control indicator (Self-control <1>)**
2. C0518900: Self-Control outcome (Self-Control <2>)
3. C0684274: Self-control as a personality trait (Self-control <3>)

2.232 ‘Serology <n>’ (degree 3)

Suppress ‘Serologic tests’ (sense <3>) because it is a ‘Laboratory Procedure’, not an occupation or a functional concept.

1. **C0036743: Serologic tests (serology <3>)**
2. C0036745: Study of serum (Serology <1>)
3. C0220911: Serological aspects (serology <2>)

2.233 ‘Serum albumin <n>’ (degree 3)

Suppress ‘Serum albumin measurement’ (sense <3>) and ‘Serum albumin level’ (sense <1>) because they are a ‘Laboratory Procedure’ and a ‘Laboratory or Test Result’, respective, not a substance. Also, remove the semantic type ‘Laboratory Procedure’ from ‘Serum Albumin’ (sense <2>); there is no evidence for it in the hierarchies of the vocabularies containing the concept.

1. *C0036773: Serum Albumin (serum albumin <2>)*
2. **C0523465: Serum albumin measurement (Serum albumin <3>)**
3. **C0728877: Serum albumin level (Serum albumin <1>)**

2.234 ‘Ski <n>’ (degree 3)

Suppress senses <2> and <3> (MetaMap only) because they are abbreviatory.

1. C0037262: SKI Anatomical site notation for tumour staging (SKI <2>)
2. C0301560: Manufactured ski (Ski <1>)
3. C0812379: Oncogene, SKI (SKI <3>)

2.235 ‘Sound measurement <n>’ (degree 3)

Consider suppressing senses <4> and <5> as being too specific.

1. C0041618: Ultrasonography (sound measurement <3>)
2. **C0596682: heart sonography (sound measurement <4>)**
3. **C0599424: skeletal sonography (sound measurement <5>)**

2.236 ‘Spores <n>’ (degree 3)

Consider suppressing sense <2> as being too specific.

1. C0038027: Reproduction spores (Spores <1>)
2. **C0429184: Spores found during Potassium hydroxide skin test (Spores <2>)**
3. C0443307: Plant spore (Spores <3>)

2.237 ‘Stiffness of joint, not elsewhere classified <n>’ (degree 3)

Suppress all senses as being too specific.

1. **C0869449: Stiffness of joint NEC in ICD2002 (Stiffness of joint, not elsewhere classified <1>)**
2. **C0869450: Stiffness of joint NEC in ICD10 (Stiffness of joint, not elsewhere classified <3>)**

3. **C0869451: Stiffness of joint NEC in MDR40 (Stiffness of joint, not elsewhere classified <2>)**

2.238 'Stillbirth <n>' (degree 3)

Consider suppressing sense <2> as being too specific.

1. C0015927: Fetal Death (Stillbirth <1>)
2. C0595939: Stillbirth (stillbirth <3>)
3. **C0700072: Encounter due to stillbirth (Stillbirth <2>)**

2.239 'Stomach <n>' (degree 3)

Suppress 'Stomach Diseases' (sense <7>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on the stomach' (sense <6>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0038351: Stomach (Stomach <1>)
2. **C0038354: Stomach Diseases (Stomach <7>)**
3. **C0872393: Procedures on the stomach (Stomach <6>)**

2.240 'T3 <n>' (degree 3)

Suppress 'Tri-iodothyronine measurement' (sense <2>) because it is a 'Laboratory Procedure', not a substance.

1. C0041014: Triiodothyronine (T3 <1>)
2. **C0202237: Tri-iodothyronine measurement (T3 <2>)**
3. C0546882: liothyronine sodium (T3 <3>)

2.241 'Temperature <n>' (degree 3)

Suppress 'Body temperature measurement' (sense <3>) because it is a 'Diagnostic Procedure', not an attribute.

1. C0005903: Body Temperature (Temperature <2>)
2. C0039476: Temperature (Temperature <1>)
3. **C0886414: Body temperature measurement (Temperature <3>)**

2.242 'Tempo <n>' (degree 3)

Suppress sense <1> (MetaMap only) because it is abbreviatory. Suppress 'Tempo brand of antacid' (sense <3>) (MetaMap only) because it is a brand name.

1. C0076084: 2,2,6,6-tetramethyl-4-piperidine-N-oxide (Tempo <1>)
2. C0876945: Tempo (rate) (Tempo <2>)
3. C0920345: Tempo brand of antacid (Tempo <3>)

2.243 ‘Testes <n>’ (degree 3)

Suppress ‘Testicular Diseases’ (sense <3>) because it is a ‘Disease or Syndrome’, not a ‘Body Part, Organ, or Organ Component’.

1. C0021358: Inferior Colliculus (Testes <1>)
2. **C0039584: Testicular Diseases (Testes <3>)**
3. C0039597: Testis (testes <2>)

2.244 ‘Tetracycline <n>’ (degree 3)

Consider suppressing sense <3> as being too specific.

1. C0039644: Tetracycline (Tetracycline <1>)
2. C0039651: Tetracyclines (tetracycline <2>)
3. **C0481114: Tetracyclines causing adverse effects in therapeutic use (TETRACYCLINE <3>)**

2.245 ‘Therapeutic <n>’ (degree 3)

Suppress ‘Therapeutic brand of coal tar’ (sense <3>) (MetaMap only) because it is a brand name.

1. C0039796: The science and art of healing (Therapeutic <2>)
2. C0302350: Therapeutic (Therapeutic <1>)
3. C0723712: Therapeutic brand of coal tar (Therapeutic <3>)

2.246 ‘Thiocyanate <n>’ (degree 3)

Suppress ‘Thiocyanate measurement’ (sense <3>) because it is a ‘Laboratory Procedure’, not a substance.

1. C0039887: Thiocyanates (Thiocyanate <2>)
2. C0220926: thiocyanate (thiocyanate <1>)
3. **C0302279: Thiocyanate measurement (Thiocyanate <3>)**

2.247 ‘Thyroid <n>’ (degree 3)

Suppress ‘Thyroid Diseases’ (sense <3>) because it is a ‘Disease or Syndrome’, not a ‘Body Part, Organ, or Organ Component’.

1. **C0040128: Thyroid Diseases (Thyroid <3>)**
2. C0040132: Thyroid Gland (thyroid <1>)
3. C0040134: Desiccated thyroid (thyroid <2>)

2.248 ‘Tic <n>’ (degree 3)

Suppress ‘Tic disorder’ (sense <1>) because it is a ‘Disease or Syndrome’ involving the underlying ‘Behavioral tic’. (Note that this is another example of a hierarchical ambiguity.) Suppress sense <2> (MetaMap only) because it is abbreviatory.

1. **C0040188: Tic disorder (Tic <1>)**
2. C0063382: imidazole mustard (TIC <2>)

3. C0278076: Behavioral tic (Tic <3>)

2.249 'TPA <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0032143: Tissue Plasminogen Activator (TPA <3>)
2. C0076729: Tissue Polypeptide Antigen (TPA <1>)
3. C0879362: 12-O-tetradecanoylphorbol-13-acetate (TPA <2>)

2.250 'Trachea <n>' (degree 3)

Suppress 'Tracheal Diseases' (sense <5>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on trachea' (sense <4>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0040578: Trachea (Trachea <1>)
2. **C0040580: Tracheal Diseases (Trachea <5>)**
3. **C0872391: Procedures on trachea (Trachea <4>)**

2.251 'Tramp <n>' (degree 3)

Suppress sense <1> (MetaMap only) because it is abbreviatory. Consider suppressing sense <3> as being too specific.

1. C0217846: Vagabond (Tramp <2>)
2. C0217848: tyrosine-rich acidic matrix protein (TRAMP <1>)
3. **C0687129: Encounter due to vagabond status (Tramp <3>)**

2.252 'U <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0041928: Uranium (U <3>)
2. C0041928: Uranium (U <4>)
3. C0439144: Lower case you (u <1>)
4. C0439148: Unit (U <2>)

2.253 'Unconscious <n>' (degree 3)

Consider suppressing sense <1> as being too specific.

1. **C0041654: Unconscious Personality Factor (UNCONSCIOUS <1>)**
2. C0041657: Loss of consciousness (Unconscious <2>)
3. C0700089: Unconscious state (unconscious <3>)

2.254 'Ureter <n>' (degree 3)

Suppress 'Disorder of ureter' (sense <4>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on Ureter' (sense <5>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0041951: Ureter (Ureter <1>)
2. **C0403608: Disorder of ureter (ureter <4>)**
3. **C0869844: Procedures on Ureter (Ureter <5>)**

2.255 'Urethra <n>' (degree 3)

Suppress 'Urethral Diseases' (sense <5>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on Urethra' (sense <6>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0041967: Urethra (Urethra <1>)
2. **C0041969: Urethral Diseases (urethra <5>)**
3. **C0810170: Procedures on Urethra (Urethra <6>)**

2.256 'V <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0042306: Vanadium (V <3>)
2. C0439120: Upper Case Vee (V <1>)
3. C0439145: Lower case vee (v <2>)

2.257 'Vagina <n>' (degree 3)

Suppress 'Vaginal Diseases' (sense <4>) because it is a 'Disease or Syndrome', not a 'Body Part, Organ, or Organ Component'. Suppress 'Procedures on Vagina' (sense <5>) because it is a 'Therapeutic or Preventive Procedure', not a 'Body Part, Organ, or Organ Component'.

1. C0042232: Vagina (Vagina <1>)
2. **C0042251: Vaginal Diseases (vagina <4>)**
3. **C0869896: Procedures on Vagina (Vagina <5>)**

2.258 'VAL - vis acuity left <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0429538: Distance visual acuity - left eye (VAL - Vis acuity left <1>)
2. C0429542: Near visual acuity - left eye (VAL - Vis acuity left <2>)
3. C0429546: Near visual acuity Jaeger's types - left eye (VAL - Vis acuity left <3>)

2.259 'VALE - visual acuity left eye <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0429538: Distance visual acuity - left eye (VALE - Visual acuity left eye <1>)
2. C0429542: Near visual acuity - left eye (VALE - Visual acuity left eye <2>)
3. C0429546: Near visual acuity Jaeger's types - left eye (VALE - Visual acuity left eye <3>)

2.260 'VAR - visual acuity right <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0429539: Distance visual acuity - right eye (VAR - Visual acuity right <1>)
2. C0429543: Near visual acuity - right eye (VAR - Visual acuity right <2>)
3. C0429547: Near visual acuity Jaeger's types - right eye (VAR - Visual acuity right <3>)

2.261 'VARE - visual acuity right eye <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0429539: Distance visual acuity - right eye (VARE - Visual acuity right eye <1>)
2. C0429543: Near visual acuity - right eye (VARE - Visual acuity right eye <2>)
3. C0429547: Near visual acuity Jaeger's types - right eye (VARE - Visual acuity right eye <3>)

2.262 'Vesical fistula, not elsewhere classified <n>' (degree 3)

Suppress all senses as being too specific.

1. **C0868850: Vesical fistula NEC in ICD10 (Vesical fistula, not elsewhere classified <1>)**
2. **C0868851: Vesical fistula NEC in ICD2002 (Vesical fistula, not elsewhere classified <3>)**
3. **C0868852: Vesical fistula NEC in MDR40 (Vesical fistula, not elsewhere classified <2>)**

2.263 vessel <n> (degree 3)

Suppress 'Vessel Positions' (sense <2>) and 'vessel (polysaccharide)' (sense <1>) because they are a 'Spatial Concept' and substance, respectively, not a 'Body Part, Organ, or Organ Component'.

1. C0005847: Blood Vessels (Vessel <3>)
2. **C0042591: Vessel Positions (Vessel <2>)**
3. **C0148346: vessel (polysaccharide) (Vessel <1>)**

2.264 'Vibration <n>' (degree 3)

Suppress 'Injury caused by vibration' (sense <3>) because it is an injury, not the vibration, itself; this is another example of contextual ambiguity caused by a vocabulary hierarchy.

1. C0455941: Vibration - treatment (vibration <2>)
2. C0459800: Vibration - physical agent (Vibration <1>)
3. **C0677519: Injury caused by vibration (Vibration <3>)**

2.265 'Visual pathway glioma, childhood <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (visual pathway glioma, childhood <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (visual pathway glioma, childhood <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (visual pathway glioma, childhood <3>)**

2.266 'Visual pathway glioma, pediatric <n>' (degree 3)

Suppress ambiguous forms for senses <2> and <3> as being too specific.

1. C0278653: Optic Nerve Glioma, Childhood (visual pathway glioma, pediatric <1>)
2. **C0796427: Untreated childhood visual pathway and hypothalamic glioma (visual pathway glioma, pediatric <2>)**
3. **C0796428: Recurrent childhood visual pathway and hypothalamic glioma (visual pathway glioma, pediatric <3>)**

2.267 'VL - vision left <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0429538: Distance visual acuity - left eye (VL - Vision left <1>)
2. C0429542: Near visual acuity - left eye (VL - Vision left <2>)
3. C0429546: Near visual acuity Jaeger's types - left eye (VL - Vision left <3>)

2.268 'VR - vision right <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0429539: Distance visual acuity - right eye (VR - Vision right <1>)
2. C0429543: Near visual acuity - right eye (VR - Vision right <2>)
3. C0429547: Near visual acuity Jaeger's types - right eye (VR - Vision right <3>)

2.269 'W <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0041383: Tungsten (W <3>)
2. C0439121: Upper case double-you (W <1>)
3. C0439146: Lower case double-you (w <2>)

2.270 'X <n>' (degree 3)

Suppress ambiguous forms (MetaMap only).

1. C0160660: Multiple and unspecified open wound of lower limb with complication (x <3>)
2. C0439122: Upper case ecks (X <1>)
3. C0441950: Lower case ecks (x <2>)

3. Conclusions

Some concepts have ambiguous forms which should be marked as suppressible, where *ambiguous forms* means both the string with an ambiguity designator and one or more strings without it. Note that some concepts such as 'Assessment: Cognition' have more than one ambiguous form with ambiguity designator ('Assessment <5>' and 'Assessment <17>' in this case). The analysis in this and previous editions of this report reveals some classes of ambiguity commonly occurring in the Metathesaurus:

- **Contextual (or hierarchical) ambiguity.** This class of false ambiguity is exemplified by the string 'Prostate' for 'Prostatic Diseases'. It normally arises from terms which require context

within their vocabulary (in this case, a disease hierarchy) in order to be properly understood. Contextual ambiguities can be classified according to their participants:

- **Body part/disease ambiguity** exemplified by ‘Prostate’ and ‘Prostatic Diseases’
- **Body part/procedure ambiguity** exemplified by ‘Stomach’ and ‘Procedures on the stomach’
- **Pathology/procedure ambiguity** exemplified by ‘Pathology’ and ‘Pathology procedure’
- **Medical device/procedure ambiguity** exemplified by ‘Prosthesis’ and ‘Prosthesis Implantation’
- **Substance/therapy ambiguity** exemplified by ‘Anthracyclines’ and ‘prior anthracycline therapy’
- **Substance/measurement ambiguity** exemplified by ‘Thyroid stimulating immunoglobulins’ and ‘Thyroid stimulating immunoglobulins assay’
- **Generalization ambiguity.** This is also false ambiguity caused by grouping several concepts together using a more general term. For example, 22 concepts including ‘Protocols: Activities’ and ‘Protocols: Pre- or Intra- or Post-Procedure’ are generalized to ‘Protocols’ which does seem to be a legitimate synonym of the concept ‘Protocols documentation’.
- **Meta ambiguity.** This new class of ambiguity, represented by strings such as ‘Other complications of procedures NEC in ICD10’, contain meta information. In this case it is the name of the vocabulary, ICD10 in the example. As opposed to the first class of ambiguity above in which strings such as ‘Prostate’ meaning ‘Prostatic Diseases’ do not say enough about themselves, these strings say too much. It is true that the meaning of a string containing ‘NEC’, ‘not elsewhere classified’ or like phrase, depends upon its vocabulary, but such information is already available in the MSRO file (where it belongs). It is also true that such strings have different meanings and strictly speaking should be different concepts. But the practical result of such a representational scheme is to introduce an ambiguity that most users do not want or need to resolve. (It is not even clear that those who might want to resolve the ambiguity can do so with the information available in the Metathesaurus.)
- **Abbreviation ambiguity.** This is another, large class of ambiguity caused by distinct concepts having the same acronyms (or abbreviations). An example from above is that ‘Mitral Valve Stenosis’, ‘Multiple Sclerosis’, ‘Morphine Sulfate’ and ‘millisecond’ all have abbreviation ‘MS’ or ‘ms’. Although this class represents true ambiguity in a strict sense, it is better to disallow it in many text processing situations, especially those in which authors define the abbreviations they use. Unlike the other classes of ambiguity defined above, we do not recommend that this case be reflected in changes to the Metathesaurus. This kind of ambiguity will be suppressed for MetaMap processing only.

One limitation of this study is that there was no follow-up of ambiguous strings discovered while examining the strings for a given case. For example, the set of all strings for the concepts containing a ‘sound measurement <n>’ string include the ambiguous strings ‘Ultrasonography <n>’, ‘Echography <n>’, ‘Ultrasound <n>’, ‘Echotomography <n>’ and ‘ultrasound scanning <n>’. If the ambiguous forms for ‘sound measurement <n>’ are to be marked as suppressible, how does that affect the other ambiguous strings? Each of them is part of a cluster of concepts, possibly different from the one for ‘sound measurement <n>’. Although it is probably not necessary to explore the new concept clusters, it is essential to examine the original cluster for additional ambiguous forms to suppress.

Finally, the study ignores the almost 5,000 cases of ambiguity of degree 2. Manual examination of them would be very time-consuming. However, it would be worthwhile to search for patterns such as ‘Procedures on ...’ or ‘<neoplasm> of ...’ which occur frequently in ambiguity of higher degree in order to discover further strings to mark as suppressible. These analyses will be undertaken as time permits and described in a supplement to this report.

4. Appendix

Cases of Strings having an Ambiguity Designator with no Unadorned Counterpart

The concept C0001613 (with preferred name ‘**Adrenal Cortex**’) has string ‘**Cortex <2>**’ but no corresponding string ‘*Cortex*’ without the ambiguity designator. Similarly, concept C0337671 (‘**Former smoker**’) has string ‘**Cessation of smoking <2>**’ but no corresponding string like ‘*cessation of smoking*’. This last example is the only case in which the ambiguous string, ‘**Cessation of smoking <2>**’, is a suppressible synonym. The complete list of 51 cases is given below where a lowercase version of the missing, unadorned string is shown rather than the actual string with ambiguity designator:

1. C0001613: cortex
2. C0001629: medulla
3. C0002667: amphetamine
4. C0007237: therapy
5. C0010076: coronaviruses
6. C0010346: enteritis, regional
7. C0010346: granulomatous colitis
8. C0010346: granulomatous enteritis
9. C0010346: ileitis, regional
10. C0010346: regional enteritis
11. C0010346: regional ileitis
12. C0010481: cushing’s disease
13. C0013080: mongoloid
14. C0014854: diverticulosis, esophagus
15. C0015222: hearing examination
16. C0015222: test, hearing
17. C0015222: tests, hearing
18. C0015223: test, vision
19. C0015223: tests, vision
20. C0019004: extracorporeal dialysis
21. C0022821: hunchback
22. C0027769: nerve
23. C0028165: nitrogen mustard
24. C0029007: p21
25. C0032008: anterior
26. C0032009: posterior
27. C0032743: tomography, emission computed
28. C0054233: machete
29. C0086227: oxyuris vermicularis
30. C0086227: seatworm

31. C0097622: 5 alpha-reductase
32. C0161734: frozen
33. C0176003: examination, dental
34. C0221759: syndrome, parsonage-turner
35. C0260771: dialysis, renal
36. C0260771: hemodialysis
37. C0302487: examination, gynecological
38. C0331000: horse chestnut
39. C0337671: cessation of smoking
40. C0446287: ash
41. C0478431: antigonadotrophins, antiestrogens, antiandrogens, not elsewhere classified
42. C0486224: i nos antigen:arbitrary concentration:point in time:erythrocytes^patient:ordinal:red blood cell agglutination
43. C0486242: i nos antigen:arbitrary concentration:point in time:erythrocytes^patient:ordinal:red blood cell agglutination
44. C0498273: division of muscle
45. C0596235: ca /ca++
46. C0599207: p27
47. C0600078: therapy, physical nec
48. C0699895: insemination, artificial
49. C0851294: other psychotropic drugs, not elsewhere classified
50. C0877849: peripheral neuroectodermal tumor
51. C0878544: myocardial disease