
Ambiguity in the UMLS Metathesaurus

2009 Edition

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1. Introduction

The UMLS[®] Metathesaurus[®] contains a significant amount of ambiguity. For example, the string “Cold” (or “cold” or “COLD”) occurs in six distinct concepts with six distinct meanings. The purpose of this report is to examine ambiguity in the 2008AA release of the Metathesaurus in the context of its effect on natural language processing (NLP) applications.

Until the 2004AC release of the UMLS Knowledge Sources, ambiguity was denoted explicitly by appending an ambiguity designator, a number in angle brackets, to the end of an ambiguous string. Thus the ambiguity for “cold” was denoted by ‘Cold <1>’, ‘Cold <2>’, ‘COLD <3>’, etc. Now ambiguity is computed by finding concepts with strings that differ only with respect to case.¹

Table 1 shows that the degree of Metathesaurus ambiguity has grown over the years and was particularly explosive in 2005, partly due to the direct computation of ambiguity mentioned above.

	2004	2005	2006	2007	2008	2009
Strings with an ambiguity designator	21,295 (+30%)	N/A	N/A	N/A	N/A	N/A
Concepts with one or more ambiguity	16,775 (+35%)	36,133 (+115%)	44,591 (+23%)	48,820 (+9%)	61,873 (+27%)	71,127 (+15%)
Concepts with one or more non-suppressible ambiguity	12,387 (+19%)	33,513 (+171%)	40,977 (+22%)	43,499 (+6%)	55,168 (+27%)	64,322 (+17%)
Cases of ambiguity	10,018 (+39%)	22,218 (+122%)	27,599 (+24%)	29,415 (+7%)	40,574 (+38%)	45,540 (+12%)
Cases of non-suppressible ambiguity	9,521 (+40%)	20,996 (+121%)	25,290 (+20%)	26,084 (+3%)	36,266 (+39%)	40,937 (+13%)

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

Note that in the table, percentage changes are computed relative to the previous year. More

1. Note that AMBIGSUI.RRF or AMBIG.SUI cannot be used for this purpose because they do not conflate case.

recently, ambiguity grew significantly in 2006 and 2008, less so in 2009 and quite modestly in 2007.

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 (or one of its case variants) occurs.¹ For example “deprecated ^ wbc-acnc” has degree 124 in 2008 all of which are marked as suppressible; “other” has degree 89 (43 if suppressibles are ignored). 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. In 2004 and before, for example, ‘Abbreviations <1>’ is not ambiguous since there were 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 higher degree has disappeared, and all of that would disappear if appropriate strings were marked as suppressible. Suppressible synonyms are ignored for the remainder of this report.

Section 2 of this report describes general classes of ambiguity found in the Metathesaurus. Section 3 describes only the most notable cases of ambiguity in the Metathesaurus, i.e., the cases of degree 10 or more. The bulk of the cases are now reported automatically by the Migration Assistant, a tool developed generally for annotating ambiguity and specifically for the purpose of marking appropriate cases as suppressible. Finally, Section 4 is an appendix containing instructions for populating the tables in the report.

2. Classes of Metathesaurus Ambiguity

Some concepts contain strings which should be marked as suppressible. Many of these strings are already marked suppressible for a given UMLS release; this report recommends further cases some of which are universally applicable and some of which are appropriate in more limited environments such as the natural language processing done by MetaMap.

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’. (Many of these problems have been fixed by suppressing the misleading string for the concept; but the problems continue to reappear as the Metathesaurus grows.) 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’

1. The computation of the degree of an ambiguity was corrected in 2002. As a result, there are some differences from previous editions of this report in the counts reported in the tables.

Degree of ambiguity	2006 cases	2007 cases	2008 cases	2009 cases
124		1	1 (0%)	
93		1		
92	1			
54				
89			1	1 (0%)
39	1	1 (0%)	1 (0%)	1 (0%)
36	1	1 (0%)	1 (0%)	3 (+200%)
25				1
24	1			3
23		1	1 (0%)	3 (+200%)
22				1
21				6
20	1		1 (0%)	3 (+200%)
19	1	1 (0%)		3
18	1 (0%)	2 (+100%)	2 (0%)	3 (+50%)
17			2 (0%)	5 (+150%)
16	2 (+100%)	1 (-50%)	1 (0%)	2 (+100%)
15	1	3 (+200%)	2 (-33%)	10 (+400%)
14	1		3 (+200%)	2 (-33%)
13	1	1 (0%)	3 (+200%)	9 (+200%)
12	1 (0%)	3 (+200%)	6 (+100%)	12 (+100%)
11	3	4 (+33%)	10 (+150%)	13 (+30%)
10	4	7 (+75%)	17 (+143%)	18 (+6%)
9	13 (+117%)	14 (+8%)	25 (+79%)	40 (+60%)
8	23 (+130%)	24 (+4%)	61 (+154%)	70 (+15%)
7	28 (+155%)	42 (+50%)	70 (+67%)	118 (+69%)
6	66 (+175%)	104 (+58%)	185 (78%)	242 (+31%)
5	158 (+193%)	195 (+23%)	404 (+107%)	464 (+15%)
4	452 (+117%)	562 (+24%)	996 (77%)	1,231 (24%)
3	1,868 (+51%)	2,380 (+27%)	4,226 (+78%)	4,873 (+15%)
2	24,971 (+21%)	26,067 (+4%)	34,555 (+32%)	38,403 (+11%)
1				
Total	27,599 (+24%)	29,415 (+7%)	40,574 (+38%)	45,540 (+12%)

Table 2. Metathesaurus ambiguity distribution by degree

- **Medical device/procedure ambiguity** exemplified by ‘Prosthesis’ and ‘Prosthesis Implantation’

Degree of ambiguity	2006 cases	2007 cases	2008 cases	2009 cases
43			1	1 (0%)
41		1		
40	1			
39	1			
36	1	1 (0%)	1 (0%)	3 (+200%)
25				1
24	1			2
23		1	1 (0%)	4 (+300%)
22				1
21				6
20	1		1 (0%)	3 (+200%)
19	1	1 (0%)		3
18	1 (0%)	2 (+100%)	2 (0%)	3 (+50%)
17				3
16				1
15	1	1 (0%)	1 (0%)	9 (+800%)
14		1	4 (+300%)	2 (-50%)
13	1		1	8 (+700%)
12	1 (0%)	3 (+200%)	6 (+100%)	9 (+50%)
11	1	2 (+100%)	7 (+250%)	12 (+71%)
10	4	6 (+50%)	16 (+167%)	18 (+13%)
9	9 (+80%)	12 (+33%)	22 (+83%)	27 (+23%)
8	16 (+100%)	19 (+19%)	40 (+110%)	56 (+40%)
7	16 (+220%)	25 (+56%)	60 (+140%)	99 (+65%)
6	39 (+457%)	87 (+123%)	142 (+63%)	214 (+51%)
5	123 (+297%)	160 (+30%)	306 (+91%)	355 (+16%)
4	360 (+131%)	481 (+34%)	899 (+87%)	1,133 (+26%)
3	1,586 (+59%)	2,076 (+31%)	3,857 (+86%)	4,474 (+16%)
2	23,126 (+17%)	23,205 (+0%)	30,899 (+33%)	34,490 (+12%)
1				
Total	25,290 (+20%)	26,084 (+3%)	36,266 (+39%)	40,937 (+13%)

Table 3. Metathesaurus ambiguity distribution after removing suppressibles

- **Substance/therapy ambiguity** exemplified by ‘Anthracyclines’ and ‘prior anthracycline therapy’
- **Substance/measurement ambiguity** exemplified by ‘Thyroid stimulating immunoglobulins (TSI)’ 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, 23 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 ‘Stress fracture, NEC in ICD10_1998’, contain meta information. In this case it is the name of the vocabulary, ICD10_1998 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.

3. Higher Degree Metathesaurus Ambiguity

Ambiguous English Metathesaurus strings are described in this section in decreasing order of degree of ambiguity. Only those cases of degree 10 or more are covered. See Migration Assistant reports for cases of ambiguity of lesser degree.

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*. Ambiguous forms for concepts shown in italics should be marked as suppressible in MetaMap only.

3.1 “other” (degree 43) <no change from last year>

Except for ‘Other’, the remaining cases should be suppressed because they mean something more specific than “other”. The concepts involved are

1. C0205394| Other
2. **C0220886| Other location of complaint**

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3. C1271040| **Other health professional**
 4. C1521979| **Other Routes of Drug Administration**
 5. C1546380| **Other - Event Reason**
 6. C1546725| **Other Specimen Source Code**
 7. C1546836| **Other - Special Program Code**
 8. C1546840| **Other - Publicity Code**
 9. C1546902| **Other - Diagnosis Classification**
 10. C1546930| **Other - Report Source**
 11. C1547110| **Other - Modality**
 12. C1547196| **Other - Organization unit type**
 13. C1547233| **Other - Triage Code**
 14. C1547241| **Other - Newborn Code**
 15. C1547267| **Other - Risk Management Incident Code**
 16. C1547272| **Other - Incident Type Code**
 17. C1547281| **Other - Production Class Code**
 18. C1547292| **Other - Recreational Drug Use Code**
 19. C1547304| **Other - Precaution Code**
 20. C1547309| **Other - Patient Condition Code**
 21. C1547994| **Other - Diagnostic Service Section ID**
 22. C1549063| **Other - Notify Clergy Code**
 23. C1549104| **Other - Administrative Gender**
 24. C1549110| **Other - Marital Status**
 25. C1550146| **Other - Substance Type**
 26. C1556042| **Other - Relationship**
 27. C1556043| **Other - Religion**
 28. C1556044| **other - No Information**
 29. C1556045| **Other - What subject filter**
 30. C1556046| **Other - Employment Status**
 31. C1556048| **Other - Contact Role**
 32. C1556049| **Other - Mail Claim Party**
 33. C1556050| **Other - Living Dependency**
 34. C1556051| **Other - Event Consequence**
 35. C1556052| **Other - Indirect exposure mechanism**
 36. C1556053| **Other - Action Taken in Response to the Event**
 37. C1556054| **Other - Status of Evaluation**
 38. C1556055| **Other - Causality Observations**
 39. C1556056| **Other - Job Status**
 40. C1556057| **Other - Immunization Registry Status**
 41. C1561608| **Other - Mode of Arrival**
 42. C1868670| **Other Growth**
 43. C1996846| **Other (qualifier in LNC)**

3.2 “(+)” (degree 36)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C2071858| *uncorrected binocular vision (at 14in) using Jaeger in plus diopters*
2. C2071860| *uncorrected vision in right eye (at 14in) using Jaeger in plus diopters*

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3. C2071862| *uncorrected vision in left eye (at 14in) using Jaeger in plus diopters*
 4. C2071866| *corrected vision in right eye (at 14in) using Jaeger in plus diopters*
 5. C2071868| *corrected vision in left eye (at 14in) using Jaeger in plus diopters*
 6. C2072856| *uncorrected distance acuity on right: (plus ___)*
 7. C2072857| *distance acuity right with current correction: (plus ___)*
 8. C2072858| *distance acuity left uncorrected: (plus ___)*
 9. C2072859| *distance acuity left with current correction: (plus ___)*
 10. C2072860| *binocular distance acuity uncorrected: (plus ___)*
 11. C2072861| *near vision right eye (uncorrected) (plus ___)*
 12. C2072862| *near vision left eye (uncorrected) (plus ___)*
 13. C2072863| *uncorrected near vision in both eyes (plus ___)*
 14. C2072864| *corrected near vision in both eyes (plus ___)*
 15. C2072865| *near vision left eye (current correction) (plus ___)*
 16. C2072866| *near vision right eye (corrected) (plus ___)*
 17. C2072877| *distance acuity binocular, with current correction: plus ___*
 18. C2087278| *uncorrected binocular vision (at 26in) using Jaeger in plus diopter*
 19. C2087281| *uncorrected vision in right eye (at 26in) using Jaeger in plus diopters*
 20. C2087284| *uncorrected vision in left eye (at 26in) using Jaeger in plus diopters*
 21. C2087287| *corrected binocular vision (at 26in) using Jaeger in plus diopters*
 22. C2087290| *corrected vision in right eye (at 26in) using Jaeger in plus diopters*
 23. C2087293| *corrected vision in left eye (at 26in) using Jaeger in plus diopters*
 24. C2087332| *manifest vision in right eye (at 14in) using Jaeger in plus diopters*
 25. C2087335| *manifest vision in left eye (at 14in) using Jaeger in plus diopters*
 26. C2087381| *manifest near vision in both eyes (plus ___)*
 27. C2087384| *near vision right eye manifest (plus ___)*
 28. C2087387| *near vision left eye manifest (plus ___)*
 29. C2087401| *manifest vision in right eye (at 26in) using Jaeger in plus diopters*
 30. C2087406| *manifest vision in left eye (at 26in) using Jaeger in plus diopters*
 31. C2087590| *binocular visual acuity with new correction (plus ___)*
 32. C2087593| *manifest binocular vision (at 26in) using Jaeger in plus diopters*
 33. C2089354| *uncorrected distance acuity on right: pinhole: (plus ___)*
 34. C2089356| *distance acuity left uncorrected: pinhole: (plus ___)*
 35. C2089358| *distance acuity right with current correction: pinhole: (plus ___)*
 36. C2089360| *distance acuity left with current correction pinhole (plus ___)*

3.3 “(-)” (degree 36)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C2071857| *uncorrected binocular vision (at 14in) using Jaeger in minus diopters*
2. C2071859| *uncorrected vision in right eye (at 14in) using Jaeger in minus diopters*
3. C2071861| *uncorrected vision in left eye (at 14in) using Jaeger in minus diopters*
4. C2071865| *corrected vision in right eye (at 14in) using Jaeger in minus diopters*
5. C2071867| *corrected vision in left eye (at 14in) using Jaeger in minus diopters*
6. C2072844| *uncorrected distance acuity on right: (minus ___)*
7. C2072845| *distance acuity right with current correction: (minus ___)*
8. C2072846| *distance acuity left uncorrected: (minus ___)*
9. C2072847| *distance acuity left with current correction: (minus ___)*

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10. C2072848| *binocular distance acuity uncorrected: (minus ___)*
 11. C2072849| *distance acuity binocular with specified current correction: (minus ___)*
 12. C2072850| *near vision right eye (uncorrected) (minus ___)*
 13. C2072851| *near vision left eye (uncorrected) (minus ___)*
 14. C2072852| *uncorrected near vision in both eyes (minus ___)*
 15. C2072853| *near vision right eye (corrected) (minus ___)*
 16. C2072854| *near vision left eye (current correction) (minus ___)*
 17. C2072855| *corrected near vision in both eyes (minus ___)*
 18. C2087277| *uncorrected binocular vision (at 26in) using Jaeger in minus diopters*
 19. C2087280| *uncorrected vision in right eye (at 26in) using Jaeger in minus diopters*
 20. C2087283| *uncorrected vision in left eye (at 26in) using Jaeger in minus diopters*
 21. C2087286| *corrected binocular vision (at 26in) using Jaeger in minus diopters*
 22. C2087289| *corrected vision in right eye (at 26in) using Jaeger in minus diopters*
 23. C2087292| *corrected vision in left eye (at 26in) using Jaeger in minus diopters*
 24. C2087331| *manifest vision in right eye (at 14in) using Jaeger in minus diopters*
 25. C2087334| *manifest vision in left eye (at 14in) using Jaeger in minus diopters*
 26. C2087362| *binocular visual acuity with new correction (minus ___)*
 27. C2087380| *manifest near vision in both eyes (minus ___)*
 28. C2087383| *near vision right eye manifest (minus ___)*
 29. C2087386| *near vision left eye manifest (minus ___)*
 30. C2087400| *manifest vision in right eye (at 26in) using Jaeger in minus diopters*
 31. C2087405| *manifest vision in left eye (at 26in) using Jaeger in minus diopters*
 32. C2087592| *manifest binocular vision (at 26in) using Jaeger in minus diopters*
 33. C2089353| *uncorrected distance acuity on right: pinhole: (minus ___)*
 34. C2089355| *distance acuity left uncorrected: pinhole: (minus ___)*
 35. C2089357| *distance acuity right with current correction pinhole: (minus ___)*
 36. C2089359| *distance acuity left with current correction pinhole (minus ___)*

3.4 “unknown” (degree 36) <no change from last year>

Except for ‘Unknown’ (occurs twice), the remaining cases should be suppressed because they mean something more specific than “unknown”. The concepts involved are

1. C0439673| Unknown
2. C1521803| **Unknown Route of Drug Administration**
3. C1546837| **Unknown - Special Program Code**
4. C1546841| **Unknown Publicity Code**
5. C1547283| **Unknown - Production Class Code**
6. C1547294| **Unknown - Recreational Drug Use Code**
7. C1547306| **Unknown - Precaution Code**
8. C1547312| **Unknown - Patient Condition Code**
9. C1548340| **Unknown - Allergy Severity**
10. C1548502| **Unknown - Vaccines administered**
11. C1548543| **Unknown - Living Will Code**
12. C1548550| **Unknown - Organ Donor Code**
13. C1549064| **Unknown - Notify Clergy Code**
14. C1549105| **Unknown - Administrative Gender**
15. C1549115| **Marital Status - Unknown**
16. C1549625| **Unknown - Ethnic Group**

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17. C1556120| **Unknown - Religion**
 18. C1556121| **Unknown - Event reason**
 19. C1556122| **Unknown - Relationship**
 20. C1556123| **Unknown - Employment Status**
 21. C1556124| **Unknown - Living Arrangement**
 22. C1556125| **Unknown - Transport Arranged**
 23. C1556126| **Unknown - Escort Required**
 24. C1556127| **Unknown - Patient Outcome**
 25. C1556128| **Unknown - Job Status**
 26. C1556129| **Unknown - Patient_s Relationship to Insured**
 27. C1556130| **Unknown - CWE statuses**
 28. C1556131| **Unknown - Container status**
 29. C1556132| **Unknown - Immunization Registry Status**
 30. C1556133| **Unknown - Expanded yes/no indicator**
 31. C1556134| **Unknown - Event Expected**
 32. C1556135| **Unknown - Patient Class**
 33. C1556136| **Unknown - Living Dependency**
 34. C1556137| **Unknown - Contact Role**
 35. C1561529| **Unknown**
 36. C1609613| **unknown - NullFlavor**

3.5 “grade II” (degree 25)

Except for ‘Grade two rank’, ‘G2 stage (tumor staging)’, and ‘Disease Grade 2’, the remaining cases should be suppressed because they mean something more specific than “grade II”. The concepts involved are

1. C0441802| **Grade two rank**
2. C0475270| **G2 stage (tumor staging)**
3. C1522446| **Disease Grade 2**
4. C1883547| **WHO Central Nervous System Grade II**
5. C2012450| **grade II continuous axillary murmur**
6. C2012451| **grade II continuous interscapular murmur**
7. C2012452| **grade II diastolic interscapular murmur**
8. C2012453| **grade II systolic interscapular murmur**
9. C2012454| **grade II systolic murmur along left upper sternal border**
10. C2071964| **murmur left upper sternal border diastolic grade II**
11. C2072012| **murmur left upper sternal border continuous grade II**
12. C2072058| **murmur right upper sternal border systolic grade II**
13. C2072107| **murmur right upper sternal border diastolic grade II**
14. C2072155| **murmur right upper sternal border continuous grade II**
15. C2072201| **murmur right lower sternal border systolic grade II**
16. C2072246| **murmur right lower sternal border diastolic grade II**
17. C2072294| **murmur right lower sternal border continuous grade II**
18. C2072337| **murmur left lower sternal border systolic grade II**
19. C2072383| **murmur left lower sternal border diastolic grade II**
20. C2072427| **murmur left lower sternal border continuous grade II**
21. C2072470| **murmur apical systolic grade II**
22. C2072516| **murmur apical diastolic grade II**

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23. **C2072560| murmur apical continuous grade II**
 24. **C2072603| murmur axilla systolic grade II**
 25. **C2072640| murmur axilla diastolic grade II**

3.6 “grade III” (degree 24)

Except for ‘Poorly differentiated’ and ‘Grade three rank’, the remaining cases should be suppressed because they mean something more specific than “grade III”. The concepts involved are

1. C0205617| Poorly differentiated
2. C0450094| Grade three rank
3. **C1883548| WHO Central Nervous System Grade III**
4. **C2012455| grade III continuous axillary murmur**
5. **C2012456| grade III continuous interscapular murmur**
6. **C2012457| grade III diastolic interscapular murmur**
7. **C2012458| grade III systolic interscapular murmur**
8. **C2071886| murmur left upper sternal border systolic grade III**
9. **C2071965| murmur left upper sternal border diastolic grade III**
10. **C2072013| murmur left upper sternal border continuous grade III**
11. **C2072059| murmur right upper sternal border systolic grade III**
12. **C2072108| murmur right upper sternal border diastolic grade III**
13. **C2072156| murmur right upper sternal border continuous grade III**
14. **C2072202| murmur right lower sternal border systolic grade III**
15. **C2072247| murmur right lower sternal border diastolic grade III**
16. **C2072295| murmur right lower sternal border continuous grade III**
17. **C2072338| murmur left lower sternal border systolic grade III**
18. **C2072384| murmur left lower sternal border diastolic grade III**
19. **C2072428| murmur left lower sternal border continuous grade III**
20. **C2072471| murmur apical systolic grade III**
21. **C2072517| murmur apical diastolic grade III**
22. **C2072561| murmur apical continuous grade III**
23. **C2072604| murmur axilla systolic grade III**
24. **C2072641| murmur axilla diastolic grade III**

3.7 “no radiographic evidence of any osteoarticular abnormality” (degree 24)

All twenty-four cases should be suppressed because they are specific kinds of “no radiographic evidence of any osteoarticular abnormality”. Their concepts are

1. **C2029127| hand x-ray without radiographic evidence of osteoarticular abnormality**
2. **C2046269| hip x-ray without radiographic evidence of osteoarticular abnormalities**
3. **C2052331| pelvic x-ray without radiographic evidence of osteoarticular abnormality**
4. **C2075477| clavicle x-ray without radiographic evidence of osteoarticular abnormality**
5. **C2106288| coccyx x-ray without radiographic evidence of osteoarticular abnormality**
6. **C2110833| knee x-ray without radiographic evidence of osteoarticular abnormality**
7. **C2115714| thoracic spine x-ray without radiographic evidence of osteoarticular abnormality**
8. **C2115857| thoracolumbar spine x-ray without radiographic evidence osteoarticular abnormality**
9. **C2120873| finger x-ray without radiographic evidence of osteoarticular abnormality**

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10. C2120875| wrist x-ray without radiographic evidence of osteoarticular abnormality
 11. C2120876| x-ray of radius and ulna without radiographic evidence of osteoarticular abnormality
 12. C2120879| arm x-ray without radiographic evidence of osteoarticular abnormality
 13. C2120881| shoulder x-ray without radiographic evidence of osteoarticular abnormality
 14. C2120882| scapular x-ray without radiographic evidence of osteoarticular abnormality
 15. C2120883| rib x-ray without radiographic evidence of osteoarticular abnormality
 16. C2120884| lumbosacral spine x-ray without radiographic evidence of osteoarticular abnormalities
 17. C2120886| sacroiliac joint x-ray without radiographic evidence osteoarticular abnormality
 18. C2120887| sacrum x-ray without radiographic evidence of osteoarticular abnormality
 19. C2120888| femur x-ray without radiographic evidence of osteoarticular abnormality
 20. C2120890| lower leg x-ray without radiographic evidence of osteoarticular abnormality
 21. C2120892| ankle x-ray without radiographic evidence of osteoarticular abnormality
 22. C2120894| foot x-ray without radiographic evidence of osteoarticular abnormality
 23. C2120895| toe x-ray without radiographic evidence of osteoarticular abnormality
 24. C2121024| skull x-ray without radiographic evidence of osteoarticular abnormality

3.8 “grade I” (degree 23)

Except for ‘Grade one rank’ and ‘WHO Central Nervous System Grade I’, the remaining cases should be suppressed because they mean something more specific than “grade I”. The concepts involved are

1. C0687695| Grade one rank
2. C1883546| WHO Central Nervous System Grade I
3. C2012446| grade I continuous axillary murmur
4. C2012447| grade I continuous interscapular murmur
5. C2012448| grade I diastolic interscapular murmur
6. C2012449| grade I systolic interscapular murmur
7. C2071885| murmur left upper sternal border systolic grade I
8. C2071963| murmur left upper sternal border diastolic grade I
9. C2072011| murmur left upper sternal border continuous grade I
10. C2072057| murmur right upper sternal border systolic grade I
11. C2072106| murmur right upper sternal border diastolic grade I
12. C2072154| murmur right upper sternal border continuous grade I
13. C2072200| murmur right lower sternal border systolic grade I
14. C2072245| murmur right lower sternal border diastolic grade I
15. C2072293| murmur right lower sternal border continuous grade I
16. C2072336| grade I systolic murmur along left lower sternal border
17. C2072382| murmur left lower sternal border diastolic grade I
18. C2072426| murmur left lower sternal border continuous grade I
19. C2072469| grade I apical systolic murmur
20. C2072515| murmur apical diastolic grade I
21. C2072559| murmur apical continuous grade
22. C2072602| murmur axilla systolic grade I
23. C2072639| murmur axilla diastolic grade I

3.9 “grade IV” (degree 23)

Except for ‘Grade four rank’ and ‘WHO Central Nervous System Grade IV’, the remaining cases should be suppressed because they mean something more specific than “grade IV”. The concepts involved are

1. C0547054| Grade four rank
2. C1883549| WHO Central Nervous System Grade IV
3. **C2012459| grade IV continuous axillary murmur**
4. **C2012460| grade IV continuous interscapular murmur**
5. **C2012461| grade IV diastolic interscapular murmur**
6. **C2012462| grade IV systolic interscapular murmur**
7. **C2071887| murmur left upper sternal border systolic grade IV**
8. **C2071966| murmur left upper sternal border diastolic grade IV**
9. **C2072014| murmur left upper sternal border continuous grade IV**
10. **C2072060| murmur right upper sternal border systolic grade IV**
11. **C2072109| murmur right upper sternal border diastolic grade IV**
12. **C2072157| murmur right upper sternal border continuous grade IV**
13. **C2072203| murmur right lower sternal border systolic grade IV**
14. **C2072248| murmur right lower sternal border diastolic grade IV**
15. **C2072296| murmur right lower sternal border continuous grade IV**
16. **C2072339| murmur left lower sternal border systolic grade IV**
17. **C2072385| murmur left lower sternal border diastolic grade IV**
18. **C2072429| murmur left lower sternal border continuous grade IV**
19. **C2072472| murmur apical systolic grade IV**
20. **C2072518| murmur apical diastolic grade IV**
21. **C2072562| murmur apical continuous grade IV**
22. **C2072605| murmur axilla systolic grade IV**
23. **C2072642| murmur axilla diastolic grade IV**

3.10 “new” (degree 23)

Except for ‘New’, the remaining cases should be suppressed because they mean something more specific than “new”. The concepts involved are

1. C0205314| New
2. **C1553390| Act Status - new**
3. **C1578513| Query Status Code - new**
4. **C2071883| murmur left upper sternal border systolic new**
5. **C2071961| murmur left upper sternal border diastolic new**
6. **C2072009| murmur left upper sternal border continuous new**
7. **C2072055| murmur right upper sternal border systolic new**
8. **C2072104| murmur right upper sternal border diastolic new**
9. **C2072152| murmur right upper sternal border continuous new**
10. **C2072198| murmur right lower sternal border systolic new**
11. **C2072243| murmur right lower sternal border diastolic new**
12. **C2072291| murmur right lower sternal border continuous new**
13. **C2072334| murmur left lower sternal border systolic new**
14. **C2072380| murmur left lower sternal border diastolic new**
15. **C2072424| murmur left lower sternal border continuous new**

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16. C2072467| **murmur apical systolic new**
 17. C2072513| **murmur apical diastolic new**
 18. C2072600| **murmur axilla systolic new**
 19. C2072637| **murmur axilla diastolic new**
 20. C2072672| **new continuous axillary murmur**
 21. C2072699| **new systolic interscapular murmur**
 22. C2072707| **new diastolic interscapular murmur**
 23. C2072734| **new continuous interscapular murmur**

3.11 “protocols” (degree 23) <no change from last year>

Except for ‘Protocols documentation’, the remaining cases should be suppressed because they mean something more specific than “protocols”. The concepts involved are

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

3.12 “high-pitched” (degree 22)

Except for ‘High pitched voice’, the remaining cases should be suppressed because they mean something more specific than “high-pitched”. The concepts involved are

1. C0241703| High pitched voice
2. C2030957| **high-pitched continuous axillary murmur**
3. C2030958| **high-pitched continuous interscapular murmur**
4. C2030959| **high-pitched diastolic interscapular murmur**
5. C2030960| **high-pitched systolic interscapular murmur**
6. C2071927| **murmur left upper sternal border systolic high-pitched**
7. C2071975| **murmur left upper sternal border diastolic high-pitched**

8. C2072022| murmur left upper sternal border continuous high-pitched
9. C2072071| murmur right upper sternal border systolic high-pitched
10. C2072118| murmur right upper sternal border diastolic high-pitched
11. C2072165| murmur right upper sternal border continuous high-pitched
12. C2072214| murmur right lower sternal border systolic high-pitched
13. C2072257| murmur right lower sternal border diastolic high-pitched
14. C2072304| murmur right lower sternal border continuous high-pitched
15. C2072350| murmur left lower sternal border systolic high-pitched
16. C2072394| murmur left lower sternal border diastolic high-pitched
17. C2072437| murmur left lower sternal border continuous high-pitched
18. C2072483| murmur apical systolic high-pitched
19. C2072527| murmur apical diastolic high-pitched
20. C2072570| murmur apical continuous high-pitched
21. C2072616| murmur axilla systolic high-pitched
22. C2072651| murmur axilla diastolic high-pitched

3.13 “clearest at end exhalation in the left lateral recumbent position” (degree 21)

All twenty-one cases should be suppressed because they are specific kinds of “clearest at end exhalation in the left lateral recumbent position”. Their concepts are

1. C2039723| systolic interscapular murmur heard best with patient in left lateral recumbent position in full expiration
2. C2071947| murmur left upper sternal border systolic heard clearest left lateral recumbent position at end of expiration
3. C2071995| murmur left upper sternal border diastolic heard clearest left lateral recumbent position at end of expiration
4. C2072041| murmur left upper sternal border continuous heard clearest left lateral recumbent position at end of expiration
5. C2072090| murmur right upper sternal border systolic heard clearest left lateral recumbent position at end of expiration
6. C2072138| murmur right upper sternal border diastolic heard clearest left lateral recumbent position at end of expiration
7. C2072184| murmur right upper sternal border continuous heard clearest left lateral recumbent position at end of expiration
8. C2072229| murmur right lower sternal border systolic heard clearest left lateral recumbent position at end of expiration
9. C2072273| murmur right lower sternal border diastolic heard clearest left lateral recumbent position at end of expiration
10. C2072320| murmur right lower sternal border continuous heard clearest left lateral recumbent position at end of expiration
11. C2072366| murmur left lower sternal border systolic heard clearest left lateral recumbent position at end of expiration
12. C2072410| murmur left lower sternal border diastolic heard clearest left lateral recumbent position at end of expiration
13. C2072453| murmur left lower sternal border continuous heard clearest in left lateral recumbent position at end of expiration
14. C2072499| murmur apical systolic heard clearest in left lateral recumbent position at end of expiration

15. C2072543| diastolic apical murmur heard clearest in left lateral recumbent position in end expiration
16. C2072586| continuous apical murmur heard clearest in left lateral recumbent position in end expiration
17. C2072623| murmur axilla systolic heard clearest in left lateral recumbent position at end of expiration
18. C2072658| murmur axilla diastolic heard clearest in left lateral recumbent position at end of expiration
19. C2072685| continuous axillary murmur heard best with patient in left lateral recumbent position in full expiration
20. C2072720| diastolic interscapular murmur heard best with patient in left lateral recumbent position in full expiration
21. C2072747| continuous interscapular murmur heard best with patient in left lateral recumbent position in full expiration

3.14 “clearest at end exhalation while sitting and leaning forward” (degree 21)

All twenty-one cases should be suppressed because they are specific kinds of “clearest at end exhalation while sitting and leaning forward”. Their concepts are

1. C2039724| systolic interscapular murmur heard best with patient sitting up leaning forward in full expiration
2. C2071946| murmur left upper sternal border systolic heard clearest with patient sitting and leaning forward at end exhalation
3. C2071994| murmur left upper sternal border diastolic heard clearest with patient sitting and leaning forward at end of expiration
4. C2072040| murmur left upper sternal border continuous heard clearest with patient sitting and leaning forward at end of expiration
5. C2072089| murmur right upper sternal border systolic heard clearest with patient sitting and leaning forward at end of expiration
6. C2072137| murmur right upper sternal border diastolic heard clearest with patient sitting and leaning forward at end of expiration
7. C2072183| murmur right upper sternal border continuous heard clearest with patient sitting and leaning forward at end of expiration
8. C2072228| murmur right lower sternal border systolic heard clearest with patient sitting and leaning forward at end of expiration
9. C2072272| murmur right lower sternal border diastolic heard clearest with patient sitting and leaning forward at end of expiration
10. C2072319| murmur right lower sternal border continuous heard clearest with patient sitting and leaning forward at end of expiration
11. C2072365| murmur left lower sternal border systolic heard clearest with patient sitting and leaning forward at end of expiration
12. C2072409| murmur left lower sternal border diastolic heard clearest with patient sitting and leaning forward at end of expiration
13. C2072452| murmur left lower sternal border continuous heard clearest with patient sitting and leaning forward at end expiration
14. C2072498| murmur apical systolic heard clearest with patient sitting and leaning forward at end expiration

15. C2072542| diastolic apical murmur heard clearest with patient sitting and leaning forward in end expiration
16. C2072585| continuous apical murmur heard clearest with patient sitting and leaning forward in end expiration
17. C2072622| murmur axilla systolic heard clearest with patient sitting and leaning forward at end expiration
18. C2072657| murmur axilla diastolic heard clearest with patient sitting and leaning forward at end expiration
19. C2072684| continuous axillary murmur heard best with patient sitting up leaning forward in full expiration
20. C2072719| diastolic interscapular murmur heard best with patient sitting up leaning forward in full expiration
21. C2072746| continuous interscapular murmur heard best with patient sitting up leaning forward in full expiration

3.15 “harsh” (degree 21)

All twenty-one cases should be suppressed because they are specific kinds of “harsh”. Their concepts are

1. C2029356| harsh continuous axillary murmur
2. C2029357| harsh continuous interscapular murmur
3. C2029359| harsh diastolic interscapular murmur
4. C2029360| harsh systolic interscapular region
5. C2071928| murmur left upper sternal border systolic harsh
6. C2071976| murmur left upper sternal border diastolic harsh
7. C2072023| murmur left upper sternal border continuous harsh
8. C2072072| murmur right upper sternal border systolic harsh
9. C2072119| murmur right upper sternal border diastolic harsh
10. C2072166| murmur right upper sternal border continuous harsh
11. C2072215| murmur right lower sternal border systolic harsh
12. C2072258| murmur right lower sternal border diastolic harsh
13. C2072305| murmur right lower sternal border continuous harsh
14. C2072351| murmur left lower sternal border systolic harsh
15. C2072395| murmur left lower sternal border diastolic harsh
16. C2072438| murmur left lower sternal border continuous harsh
17. C2072484| murmur apical systolic harsh
18. C2072528| murmur apical diastolic harsh
19. C2072571| murmur apical continuous harsh
20. C2072617| murmur axilla systolic harsh
21. C2072652| murmur axilla diastolic harsh

3.16 “intermittent” (degree 21)

Except for ‘Intermittent’, the remaining cases should be suppressed because they mean something more specific than “intermittent”. The concepts involved are

1. C0205267| Intermittent
2. C2039746| systolic interscapular murmur with intermittent pattern
3. C2108127| continuous interscapular murmur with intermittent pattern

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4. **C2183337** | **diastolic interscapular murmur with intermittent pattern**
 5. **C2221248** | **murmur left upper sternal border systolic intermittent**
 6. **C2221251** | **murmur left upper sternal border diastolic intermittent**
 7. **C2221255** | **murmur left upper sternal border continuous intermittent**
 8. **C2221259** | **murmur right upper sternal border systolic intermittent**
 9. **C2221263** | **murmur right upper sternal border diastolic intermittent**
 10. **C2221267** | **murmur right upper sternal border continuous intermittent**
 11. **C2221271** | **murmur right lower sternal border systolic intermittent**
 12. **C2221275** | **murmur right lower sternal border diastolic intermittent**
 13. **C2221279** | **murmur right lower sternal border continuous intermittent**
 14. **C2221283** | **murmur left lower sternal border systolic intermittent**
 15. **C2221291** | **murmur left lower sternal border continuous intermittent**
 16. **C2221295** | **murmur apical systolic intermittent**
 17. **C2221299** | **murmur apical diastolic intermittent**
 18. **C2221303** | **murmur apical continuous intermittent**
 19. **C2221307** | **murmur axilla systolic intermittent**
 20. **C2221311** | **murmur axilla diastolic intermittent**
 21. **C2221313** | **murmur axilla continuous intermittent**

3.17 “low-pitched” (degree 21)

All twenty-one cases should be suppressed because they are specific kinds of “low-pitched”. Their concepts are

1. **C2071925** | **murmur left upper sternal border systolic low-pitched**
2. **C2071973** | **murmur left upper sternal border diastolic low-pitched**
3. **C2072020** | **murmur left upper sternal border continuous low-pitched**
4. **C2072069** | **murmur right upper sternal border systolic low-pitched**
5. **C2072116** | **murmur right upper sternal border diastolic low-pitched**
6. **C2072163** | **murmur right upper sternal border continuous low-pitched**
7. **C2072212** | **murmur right lower sternal border systolic low-pitched**
8. **C2072255** | **murmur right lower sternal border diastolic low-pitched**
9. **C2072302** | **murmur right lower sternal border continuous low-pitched**
10. **C2072348** | **murmur left lower sternal border systolic low-pitched**
11. **C2072392** | **murmur left lower sternal border diastolic low-pitched**
12. **C2072435** | **murmur left lower sternal border continuous low-pitched**
13. **C2072481** | **murmur apical systolic low-pitched**
14. **C2072525** | **murmur apical diastolic low-pitched**
15. **C2072568** | **murmur apical continuous low-pitched**
16. **C2072614** | **murmur axilla systolic low-pitched**
17. **C2072649** | **murmur axilla diastolic low-pitched**
18. **C2072678** | **low-pitched continuous axillary murmur**
19. **C2072701** | **low-pitched systolic interscapular murmur**
20. **C2072713** | **low-pitched diastolic interscapular murmur**
21. **C2072740** | **low-pitched continuous interscapular murmur**

3.18 “medium-pitched” (degree 21)

All twenty-one cases should be suppressed because they are specific kinds of “medium-pitched”.
Their concepts are

1. C2071926| murmur left upper sternal border systolic medium-pitched
2. C2071974| murmur left upper sternal border diastolic medium-pitched
3. C2072021| murmur left upper sternal border continuous medium pitched
4. C2072070| murmur right upper sternal border systolic medium pitched
5. C2072117| murmur right upper sternal border diastolic medium-pitched
6. C2072164| murmur right upper sternal border continuous medium pitched
7. C2072213| murmur right lower sternal border systolic medium-pitched
8. C2072256| murmur right lower sternal border diastolic medium-pitched
9. C2072303| murmur right lower sternal border continuous medium-pitched
10. C2072349| murmur left lower sternal border systolic medium-pitched
11. C2072393| murmur left lower sternal border diastolic medium-pitched
12. C2072436| murmur left lower sternal border continuous medium-pitched
13. C2072482| murmur apical systolic medium-pitched
14. C2072526| murmur apical diastolic medium-pitched
15. C2072569| murmur apical continuous medium-pitched
16. C2072615| murmur axilla systolic medium-pitched
17. C2072650| murmur axilla diastolic medium-pitched
18. C2072679| medium-pitched continuous axillary murmur
19. C2072702| medium-pitched systolic interscapular murmur
20. C2072714| medium-pitched diastolic interscapular murmur
21. C2072741| medium-pitched continuous interscapular murmur

3.19 “crescendo pattern” (degree 20)

All twenty cases should be suppressed because they are specific kinds of “crescendo pattern”.
Their concepts are

1. C2039742| systolic interscapular murmur with crescendo pattern
2. C2071920| murmur left upper sternal border systolic crescendo
3. C2071968| murmur left upper sternal border diastolic crescendo
4. C2072016| murmur left upper sternal border continuous crescendo
5. C2072064| murmur right upper sternal border systolic crescendo
6. C2072111| murmur right upper sternal border diastolic crescendo
7. C2072159| murmur right upper sternal border continuous crescendo
8. C2072207| murmur right lower sternal border systolic crescendo
9. C2072250| murmur right lower sternal border diastolic crescendo
10. C2072343| murmur left lower sternal border systolic crescendo
11. C2072387| murmur left lower sternal border diastolic crescendo
12. C2072431| murmur left lower sternal border continuous crescendo
13. C2072476| murmur apical systolic crescendo
14. C2072520| murmur apical diastolic crescendo
15. C2072564| murmur apical continuous crescendo
16. C2072609| murmur axilla systolic crescendo
17. C2072644| murmur axilla diastolic crescendo
18. C2072674| continuous axillary murmur with crescendo pattern

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19. C2072709| **diastolic interscapular murmur with crescendo pattern**
 20. C2072736| **continuous interscapular murmur with crescendo pattern**

3.20 “crescendo-decrescendo pattern” (degree 20)

All twenty cases should be suppressed because they are specific kinds of “crescendo-decrescendo pattern”. Their concepts are

1. C2039743| **systolic interscapular murmur with crescendo-decrescendo pattern**
2. C2071922| **murmur left upper sternal border systolic crescendo-decrescendo**
3. C2071970| **murmur left upper sternal border diastolic crescendo-decrescendo**
4. C2072018| **murmur left upper sternal border continuous crescendo-decrescendo**
5. C2072066| **murmur right upper sternal border systolic crescendo-decrescendo**
6. C2072113| **murmur right upper sternal border diastolic crescendo-decrescendo**
7. C2072161| **murmur right upper sternal border continuous crescendo-decrescendo**
8. C2072209| **murmur right lower sternal border systolic crescendo-decrescendo**
9. C2072252| **murmur right lower sternal border diastolic crescendo-decrescendo**
10. C2072345| **murmur left lower sternal border systolic crescendo-decrescendo**
11. C2072389| **murmur left lower sternal border diastolic crescendo-decrescendo**
12. C2072433| **murmur left lower sternal border continuous crescendo-decrescendo**
13. C2072478| **murmur apical systolic crescendo-decrescendo**
14. C2072522| **murmur apical diastolic crescendo-decrescendo**
15. C2072566| **murmur apical continuous crescendo-decrescendo**
16. C2072611| **murmur axilla systolic crescendo-decrescendo**
17. C2072646| **murmur axilla diastolic crescendo-decrescendo**
18. C2072676| **continuous axillary murmur with crescendo-decrescendo pattern**
19. C2072711| **diastolic interscapular murmur with crescendo-decrescendo pattern**
20. C2072738| **continuous interscapular murmur with crescendo-decrescendo pattern**

3.21 “decrescendo pattern” (degree 20)

All twenty cases should be suppressed because they are specific kinds of “decrescendo pattern”. Their concepts are

1. C2039744| **systolic interscapular murmur with decrescendo pattern**
2. C2071921| **murmur left upper sternal border systolic decrescendo**
3. C2071969| **murmur left upper sternal border diastolic decrescendo**
4. C2072017| **murmur left upper sternal border continuous decrescendo**
5. C2072065| **murmur right upper sternal border systolic decrescendo**
6. C2072112| **murmur right upper sternal border diastolic decrescendo**
7. C2072160| **murmur right upper sternal border continuous decrescendo**
8. C2072208| **murmur right lower sternal border systolic decrescendo**
9. C2072251| **murmur right lower sternal border diastolic decrescendo**
10. C2072344| **murmur left lower sternal border systolic decrescendo**
11. C2072388| **murmur left lower sternal border diastolic decrescendo**
12. C2072432| **murmur left lower sternal border continuous decrescendo**
13. C2072477| **murmur apical systolic decrescendo**
14. C2072521| **murmur apical diastolic decrescendo**
15. C2072565| **murmur apical continuous decrescendo**
16. C2072610| **murmur axilla systolic decrescendo**

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17. C2072645| **murmur axilla diastolic decrescendo**
 18. C2072675| **continuous axillary murmur with decrescendo pattern**
 19. C2072710| **diastolic interscapular murmur with decrescendo pattern**
 20. C2072737| **continuous interscapular murmur with decrescendo pattern**

3.22 “assessment” (degree 19)

Except for ‘Evaluation procedure’ and ‘Assessed’, the remaining cases should be suppressed because they are specific kinds of “assessment”. The concepts involved are

1. C0028708| **Nutrition Assessment**
2. C0031809| **Physical Examination**
3. C0542573| **Assessment: Bowel Elimination**
4. C0549068| **Assessment: Circulation**
5. C0549070| **Assessment: Coping**
6. C0549071| **Assessment: Fluid and Electrolytes**
7. C0549072| **Assessment: Health Behavior**
8. C0549073| **Assessment: Medications and Blood Products**
9. C0549074| **Assessment: Metabolism**
10. C0549075| **Assessment: Respiration**
11. C0549076| **Assessment: Safety**
12. C0549077| **Assessment: Self-Care**
13. C0549078| **Assessment: Sensation, Pain and Comfort**
14. C0549079| **Assessment: Urinary Elimination**
15. C0549080| **Assessment: Pre- or Intra- or Post-Procedure**
16. C0679207| **Knowledge acquisition using a method of assessment**
17. C0870300| **Assessment: Cognition**
18. C1261322| **Evaluation procedure**
19. C1516048| **Assessed**

3.23 “it had a blowing quality” (degree 19)

All nineteen cases should be suppressed because they are specific kinds of “it had a blowing quality”. Their concepts are

1. C2072025| **continuous blowing murmur along left upper sternal border**
2. C2072074| **murmur right upper sternal border systolic blowing**
3. C2072121| **murmur right upper sternal border diastolic blowing**
4. C2072168| **murmur right upper sternal border continuous blowing**
5. C2072217| **murmur right lower sternal border systolic blowing**
6. C2072260| **murmur right lower sternal border diastolic blowing**
7. C2072307| **murmur right lower sternal border continuous blowing**
8. C2072353| **murmur left lower sternal border systolic blowing**
9. C2072397| **murmur left lower sternal border diastolic blowing**
10. C2072440| **murmur left lower sternal border continuous blowing**
11. C2072486| **murmur apical systolic blowing**
12. C2072530| **murmur apical diastolic blowing**
13. C2072573| **murmur apical continuous blowing**
14. C2072619| **murmur axilla systolic blowing**
15. C2072654| **murmur axilla diastolic blowing**

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16. C2072681| **blowing continuous axillary murmur**
 17. C2072704| **blowing systolic interscapular region**
 18. C2072716| **blowing diastolic interscapular murmur**
 19. C2072743| **blowing continuous interscapular murmur**

3.24 “presystolic accentuation” (degree 19)

All nineteen cases should be suppressed because they are specific kinds of “presystolic accentuation”. Their concepts are

1. C2039749| **systolic interscapular murmur with presystolic accentuation pattern**
2. C2071923| **murmur left upper sternal border systolic with presystolic accentuation**
3. C2071971| **murmur left upper sternal border diastolic with presystolic accentuation**
4. C2072019| **murmur left upper sternal border continuous with presystolic accentuation**
5. C2072067| **murmur right upper sternal border systolic with presystolic accentuation**
6. C2072114| **murmur right upper sternal border diastolic with presystolic accentuation**
7. C2072162| **murmur right upper sternal border continuous with presystolic accentuation**
8. C2072210| **murmur right lower sternal border systolic with presystolic accentuation**
9. C2072253| **murmur right lower sternal border diastolic with presystolic accentuation**
10. C2072346| **murmur left lower sternal border systolic with presystolic accentuation**
11. C2072390| **murmur left lower sternal border diastolic presystolic accentuation**
12. C2072434| **murmur left lower sternal border continuous with presystolic accentuation**
13. C2072479| **murmur apical systolic with presystolic accentuation**
14. C2072567| **murmur apical continuous with presystolic accentuation**
15. C2072612| **murmur axilla systolic with presystolic accentuation**
16. C2072647| **murmur axilla diastolic with presystolic accentuation**
17. C2072677| **continuous axillary murmur with presystolic accentuation pattern**
18. C2072712| **diastolic interscapular murmur with presystolic accentuation pattern**
19. C2072739| **continuous interscapular murmur with presystolic accentuation**

3.25 “ec 2.7.1.112” (degree 18) <no change from last year>

All Enzyme Commission (EC) numbers (strings beginning “ec <integer>.”) are suppressed by MetaMap because they represent classes of enzymes and are consequently highly ambiguous. The concepts involved are

1. C0033681| *Protein Tyrosine Kinase*
2. C0065344| *Lymphocyte Specific Protein Tyrosine Kinase p56(lck)*
3. C0109317| *EphB2 Receptor*
4. C0117718| *fibroblast growth factor receptor 3*
5. C0138965| *protein-tyrosine kinase c-src*
6. C0169658| *Janus kinase 1*
7. C0169661| *Janus kinase 2*
8. C0290067| *Platelet-Derived Growth Factor alpha Receptor*
9. C0290068| *Platelet-Derived Growth Factor beta Receptor*
10. C0907648| *Ephrin Receptor EphB1*
11. C0915156| *Ephrin Receptor EphA8*
12. C1259418| *MERTK protein, human*
13. C1333408| *EPHA4 protein, human*
14. C1333409| *EPHB3 protein, human*

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15. C1333410| *EPHA2 protein, human*
 16. C1334392| *LTK protein, human*
 17. C1370509| *EPHA1 protein, human*
 18. C1504624| *KDR protein, human*

3.26 “patient education plans” (degree 18) <no change from last year>

All eighteen cases should be suppressed because they are specific kinds of “patient education plans”. Their concepts are

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

3.27 “rumbling” (degree 18)

All eighteen cases should be suppressed because they are specific kinds of “rumbling”. Their concepts are

1. C2071931| **murmur left upper sternal border systolic rumbling**
2. C2071979| **murmur left upper sternal border diastolic rumbling**
3. C2072122| **murmur right upper sternal border diastolic rumbling**
4. C2072261| **murmur right lower sternal border diastolic rumbling**
5. C2072290| **murmur right lower sternal border systolic rumbling**
6. C2072308| **murmur right lower sternal border continuous rumbling**
7. C2072354| **murmur left lower sternal border systolic rumbling**
8. C2072398| **murmur left lower sternal border diastolic rumbling**
9. C2072441| **murmur left lower sternal border continuous rumbling**
10. C2072487| **murmur apical systolic rumbling**
11. C2072531| **murmur apical diastolic rumbling**
12. C2072574| **murmur apical continuous rumbling**
13. C2072620| **murmur axilla systolic rumbling**
14. C2072655| **murmur axilla diastolic rumbling**
15. C2072682| **rumbling continuous axillary murmur**
16. C2072705| **rumbling systolic interscapular region**

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17. C2072717| **rumbling diastolic interscapular murmur**
 18. C2072744| **rumbling continuous interscapular murmur**

3.28 “changed since previous exam” (degree 17)

All seventeen cases should be suppressed because they are specific kinds of “changed since previous exam”. Their concepts are

1. C2045662| **change in continuous axillary murmur**
2. C2045685| **changed continuous interscapular murmur**
3. C2045686| **changed diastolic interscapular murmur**
4. C2045687| **changed systolic interscapular murmur**
5. C2071884| **murmur left upper sternal border systolic changed**
6. C2071962| **murmur left upper sternal border diastolic changed**
7. C2072010| **continuous murmur along left upper sternal border changed since previous exam**
8. C2072105| **murmur right upper sternal border diastolic changed**
9. C2072244| **murmur right lower sternal border diastolic changed**
10. C2072292| **murmur right lower sternal border continuous changed**
11. C2072335| **murmur left lower sternal border systolic changed**
12. C2072381| **murmur left lower sternal border diastolic changed**
13. C2072468| **murmur apical systolic changed**
14. C2072514| **murmur apical diastolic changed**
15. C2072558| **murmur apical continuous changed**
16. C2072601| **murmur axilla systolic changed**
17. C2072638| **murmur axilla diastolic changed**

3.29 “it had a musical quality” (degree 17)

All seventeen cases should be suppressed because they are specific kinds of “it had a musical quality”. Their concepts are

1. C2072120| **murmur right upper sternal border diastolic musical**
2. C2072167| **murmur right upper sternal border continuous musical**
3. C2072216| **murmur right lower sternal border systolic musical**
4. C2072259| **murmur right lower sternal border diastolic musical**
5. C2072306| **murmur right lower sternal border continuous musical**
6. C2072352| **murmur left lower sternal border systolic musical**
7. C2072396| **murmur left lower sternal border diastolic musical**
8. C2072439| **murmur left lower sternal border continuous musical**
9. C2072485| **murmur apical systolic musical**
10. C2072529| **murmur apical diastolic musical**
11. C2072572| **murmur apical continuous musical**
12. C2072618| **murmur axilla systolic musical**
13. C2072653| **murmur axilla diastolic musical**
14. C2072680| **musical continuous axillary murmur**
15. C2072703| **musical systolic interscapular region**
16. C2072715| **musical diastolic interscapular murmur**
17. C2072742| **musical continuous interscapular murmur**

3.30 “transmitted” (degree 17)

Except for ‘disease transmission’ and ‘transmission process’, the remaining cases should be suppressed because they mean something more specific than “transmitted”. The concepts involved are

1. C0242781| disease transmission
2. C1521797| transmission process
3. **C2071932| murmur left upper sternal border systolic transmitted**
4. **C2071980| murmur left upper sternal border diastolic transmitted**
5. **C2072026| murmur left upper sternal border continuous transmitted**
6. **C2072075| murmur right upper sternal border systolic transmitted**
7. **C2072123| murmur right upper sternal border diastolic transmitted**
8. **C2072169| murmur right upper sternal border continuous transmitted**
9. **C2072218| murmur right lower sternal border systolic transmitted**
10. **C2072262| murmur right lower sternal border diastolic transmitted**
11. **C2072309| murmur right lower sternal border continuous transmitted**
12. **C2072355| murmur left lower sternal border systolic transmitted**
13. **C2072399| murmur left lower sternal border diastolic transmitted**
14. **C2072442| murmur left lower sternal border continuous transmitted**
15. **C2072488| murmur apical systolic transmitted**
16. **C2072532| murmur apical diastolic transmitted**
17. **C2072575| murmur apical continuous transmitted**

3.31 “constant” (degree 16)

Except for ‘Constant (qualifier)’, the remaining cases should be suppressed because they mean something more specific than “constant”. The concepts involved are

1. **C1720529| Constant - dosing instruction fragment**
2. C1948059| Constant (qualifier)
3. **C2071919| murmur left upper sternal border systolic constant**
4. **C2071967| murmur left upper sternal border diastolic constant**
5. **C2072063| murmur right upper sternal border systolic constant**
6. **C2072110| murmur right upper sternal border diastolic constant**
7. **C2072206| murmur right lower sternal border systolic constant**
8. **C2072249| murmur right lower sternal border diastolic constant**
9. **C2072342| murmur left lower sternal border systolic constant**
10. **C2072386| murmur left lower sternal border diastolic constant**
11. **C2072475| murmur apical systolic constant**
12. **C2072519| murmur apical diastolic constant**
13. **C2072608| murmur axilla systolic constant**
14. **C2072643| murmur axilla diastolic constant**
15. **C2072700| murmur interscapular systolic constant|**
16. **C2072708| diastolic interscapular murmur with constant pattern**

3.32 “ar” (degree 15)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0003504| *Aortic Valve Insufficiency*
2. C0003761| *Country of Argentina*
3. C0003790| *Arkansas*
4. C0051755| *Amphiregulin*
5. C0332284| *Arising in*
6. C0559546| *Adverse reactions*
7. C0560271| *acre*
8. C1367578| *AR gene*
9. C1412322| *AKR1B1 gene*
10. C1447749| *AR protein, human*
11. C1514768| *Recombinant Amphiregulin*
12. C1551058| *are unit of measure*
13. C1704744| *Suppository Dosing Unit*
14. C1704903| *AREG wt Allele*
15. C1705240| *AR wt Allele*

3.33 “ec 2.1.1.43” (degree 15)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C2348051| *DOTIL wt Allele*
2. C2348110| *SETD2 wt Allele*
3. C2348111| *SETD7 wt Allele*
4. C2348112| *SETD8 wt Allele*
5. C2348121| *SUV39H1 wt Allele*
6. C2348122| *SUV39H2 wt Allele*
7. C2348123| *SUV420H1 wt Allele*
8. C2348124| *SUV420H2 wt Allele*
9. C2348977| *Histone-Lysine N-Methyltransferase SETD2*
10. C2348978| *Histone-Lysine N-Methyltransferase SETD8*
11. C2348979| *Histone-Lysine N-Methyltransferase SUV39H2*
12. C2348980| *Histone-Lysine N-Methyltransferase SUV420H1*
13. C2348981| *Histone-Lysine N-Methyltransferase SUV420H2*
14. C2348982| *Histone-Lysine N-Methyltransferase SETD7*
15. C2348983| *Histone-Lysine N-Methyltransferase SUV39H1*

3.34 “emergency” (degree 15) <no change from last year>

Except for ‘Emergency Situation’ and ‘Bale out’, the remaining cases should be suppressed because they are specific kinds of “emergency”. The concepts involved are

1. C0013956| **Emergency Situation**
2. C0175673| **Bale out**
3. **C1546399| Encounter Admission Source - emergency**
4. **C1546844| Visit Priority Code - Emergency**
5. **C1547144| Specialty Type - Emergency**
6. **C1552231| Clinical Nurse Specialist - Emergency**
7. **C1553500| Act Code - emergency**
8. **C1555975| Registered Nurse - Emergency**

9. **C1561583** | **Patient Class - Emergency**
10. **C1561584** | **Certification patient type - Emergency**
11. **C1561585** | **Level of Care - Emergency**
12. **C1561586** | **Consent Bypass Reason - Emergency**
13. **C1561587** | **Referral category - Emergency**
14. **C1561588** | **Admission Type - Emergency**
15. **C1561589** | **Consent Non-Disclosure Reason - Emergency**

3.35 “pap” (degree 15)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. *C0030350* | *Papaverine*
2. *C0312402* | *Acid phosphatase isoenzyme, prostatic fraction*
3. *C1367456* | *ACPP gene*
4. *C1413944* | *DDEF1 gene*
5. *C1413945* | *DDEF2 gene*
6. *C1418410* | *MRPS30 gene*
7. *C1422804* | *PDAP1 gene*
8. *C1423108* | *PAPOLA gene*
9. *C1424700* | *TUSC2 gene*
10. *C1538823* | *REG3A gene*
11. *C1705529* | *ACPP wt Allele*
12. *C1705530* | *PAPOLA wt Allele*
13. *C1705531* | *TUSC2 wt Allele*
14. *C1970472* | *PULMONARY ALVEOLAR PROTEINOSIS, ACQUIRED*
15. *C2266415* | *polyphosphate:AMP phosphotransferase activity*

3.36 “transmitted to the axilla” (degree 15)

All fifteen cases should be suppressed because they are specific kinds of “transmitted to the axilla”. Their concepts are

1. **C2071942** | **murmur left upper sternal border systolic transmitted to right clavicle**
2. **C2071990** | **murmur left upper sternal border diastolic transmitted to right clavicle**
3. **C2072036** | **murmur left upper sternal border continuous transmitted to right clavicle**
4. **C2072085** | **murmur right upper sternal border systolic transmitted to right clavicle**
5. **C2072133** | **murmur right upper sternal border diastolic transmitted to right clavicle**
6. **C2072179** | **murmur right upper sternal border continuous transmitted to right clavicle**
7. **C2072224** | **murmur right lower sternal border systolic transmitted to right clavicle**
8. **C2072268** | **murmur right lower sternal border diastolic transmitted to right clavicle**
9. **C2072315** | **murmur right lower sternal border continuous transmitted to right clavicle**
10. **C2072361** | **murmur left lower sternal border systolic transmitted to right clavicle**
11. **C2072405** | **murmur left lower sternal border diastolic transmitted to right clavicle**
12. **C2072448** | **murmur left lower sternal border continuous transmitted to right clavicle**
13. **C2072494** | **murmur apical systolic transmitted to right clavicle**
14. **C2072538** | **murmur apical diastolic transmitted to right clavicle**
15. **C2072581** | **murmur apical continuous transmitted to right clavicle**

3.37 “transmitted to the base” (degree 15)

All fifteen cases should be suppressed because they are specific kinds of “transmitted to the base”. Their concepts are

1. C2071938| murmur left upper sternal border systolic transmitted to base
2. C2071986| murmur left upper sternal border diastolic transmitted to base
3. C2072032| murmur left upper sternal border continuous transmitted to the base
4. C2072081| murmur right upper sternal border systolic transmitted to base
5. C2072129| murmur right upper sternal border diastolic transmitted to base
6. C2072175| murmur right upper sternal border continuous transmitted to base
7. C2072220| murmur right lower sternal border systolic transmitted to base
8. C2072264| murmur right lower sternal border diastolic transmitted to base
9. C2072311| murmur right lower sternal border continuous transmitted to base
10. C2072357| murmur left lower sternal border systolic transmitted to base
11. C2072401| murmur left lower sternal border diastolic transmitted to base
12. C2072444| murmur left lower sternal border continuous transmitted to base
13. C2072491| murmur apical systolic transmitted to base
14. C2072535| murmur apical diastolic transmitted to base
15. C2072578| murmur apical continuous transmitted to base

3.38 “transmitted to the interscapular region” (degree 15)

All fifteen cases should be suppressed because they are specific kinds of “transmitted to the interscapular region”. Their concepts are

1. C2071944| murmur left upper sternal border systolic transmitted to interscapular region
2. C2071992| murmur left upper sternal border diastolic transmitted to interscapular region
3. C2072038| murmur left upper sternal border continuous transmitted to interscapular region
4. C2072087| murmur right upper sternal border systolic transmitted to interscapular region
5. C2072135| murmur right upper sternal border diastolic transmitted to interscapular region
6. C2072181| murmur right upper sternal border continuous transmitted to interscapular region
7. C2072226| murmur right lower sternal border systolic transmitted to interscapular region
8. C2072270| murmur right lower sternal border diastolic transmitted to interscapular region
9. C2072317| murmur right lower sternal border continuous transmitted to interscapular region
10. C2072363| murmur left lower sternal border systolic transmitted to interscapular region
11. C2072407| murmur left lower sternal border diastolic transmitted to interscapular region
12. C2072450| murmur left lower sternal border continuous transmitted to interscapular region
13. C2072496| murmur apical systolic transmitted to interscapular region

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14. C2072540| murmur apical diastolic transmitted to interscapular region
 15. C2072583| murmur apical continuous transmitted to interscapular region

3.39 “transmitted to the left clavicle” (degree 15)

All fifteen cases should be suppressed because they are specific kinds of “transmitted to the left clavicle”. Their concepts are

1. C2071941| murmur left upper sternal border systolic transmitted to left clavicle
2. C2071989| murmur left upper sternal border diastolic transmitted to left clavicle
3. C2072035| murmur left upper sternal border continuous transmitted to left clavicle
4. C2072084| murmur right upper sternal border systolic transmitted to left clavicle
5. C2072132| murmur right upper sternal border diastolic transmitted to left clavicle
6. C2072178| murmur right upper sternal border continuous transmitted to left clavicle
7. C2072223| murmur right lower sternal border systolic transmitted to left clavicle
8. C2072267| murmur right lower sternal border diastolic transmitted to left clavicle
9. C2072314| murmur right lower sternal border continuous transmitted to left clavicle
10. C2072360| murmur left lower sternal border systolic transmitted to left clavicle
11. C2072404| murmur left lower sternal border diastolic transmitted to left clavicle
12. C2072447| murmur left lower sternal border continuous transmitted to left clavicle
13. C2072493| murmur apical systolic transmitted to left clavicle
14. C2072537| murmur apical diastolic transmitted to left clavicle
15. C2072580| murmur apical continuous transmitted to left clavicle

3.40 “transmitted to the right clavicle” (degree 15)

All fifteen cases should be suppressed because they are specific kinds of “transmitted to the right clavicle”. Their concepts are

1. C2071942| murmur left upper sternal border systolic transmitted to right clavicle
2. C2071990| murmur left upper sternal border diastolic transmitted to right clavicle
3. C2072036| murmur left upper sternal border continuous transmitted to right clavicle
4. C2072085| murmur right upper sternal border systolic transmitted to right clavicle
5. C2072133| murmur right upper sternal border diastolic transmitted to right clavicle
6. C2072179| murmur right upper sternal border continuous transmitted to right clavicle
7. C2072224| murmur right lower sternal border systolic transmitted to right clavicle
8. C2072268| murmur right lower sternal border diastolic transmitted to right clavicle
9. C2072315| murmur right lower sternal border continuous transmitted to right clavicle
10. C2072361| murmur left lower sternal border systolic transmitted to right clavicle
11. C2072405| murmur left lower sternal border diastolic transmitted to right clavicle
12. C2072448| murmur left lower sternal border continuous transmitted to right clavicle
13. C2072494| murmur apical systolic transmitted to right clavicle
14. C2072538| murmur apical diastolic transmitted to right clavicle
15. C2072581| murmur apical continuous transmitted to right clavicle

3.41 “cap” (degree 14) <no change from last year>

Except for ‘Caps’, ‘Syringe Caps’, and ‘Cap Device Component’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0006935| *capsule (pharmacologic)*
2. C0179586| Caps
3. C0278651| *cyclophosphamide/doxorubicin/prednisone protocol*
4. C0280547| *cisplatin/cyclophosphamide/doxorubicin protocol*
5. C1416891| *LNPEP gene*
6. C1418551| *SERPINB6 gene*
7. C1419093| *PTPLA gene*
8. C1422073| *BRD4 gene*
9. C1422760| *SORBS1 gene*
10. C1426630| *CAP1 gene*
11. C1657858| Syringe Caps
12. C1706092| Cap Device Component
13. C1706433| *Capsule Dosing Unit*
14. C1855179| *CATARACT, ANTERIOR POLAR*

3.42 “none” (degree 14) <no change from last year>

Except for ‘None’, the remaining cases should be suppressed because they are specific kinds of “none”. The concepts involved are

1. C0549184| None
2. C1546509| **none - TableRules**
3. C1547191| **none - ResponseLevel**
4. C1550083| **None - EntityCode**
5. C1550437| **None - Sequencing**
6. C1551387| **None - ContainerSeparator**
7. C1553523| **none - SubstanceAdminSubstitution**
8. C1556146| **None - Relationship**
9. C1556147| **None - Eligibility Source**
10. C1556148| **None - Action Taken in Response to the Event**
11. C1556150| **None - ObservationValue**
12. C1556151| **None - Language Proficiency**
13. C1556152| **None - Additive/Preservative**
14. C1706277| **None Device Component**

3.43 “active” (degree 13)

Except for ‘Active’ and ‘Active brand of pseudoephedrine-triprolidine’, the remaining cases should be suppressed because they are specific kinds of “active”. Suppress ‘Active brand of pseudoephedrine-triprolidine’ (MetaMap only) because it is a brand name. The concepts involved are

1. C0205177| Active
2. C0718247| *Active brand of pseudoephedrine-triprolidine*
3. C1547419| **ActStatus - active**
4. C1553875| **Concept Status - Active**
5. C1561507| **EditStatus - Active**
6. C1561508| **Managed Participation Status - active**
7. C1561509| **Role Status - active**
8. C1561510| **Entity Status - active**
9. C1561511| **Document Storage - active**

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10. **C1561512** | **Document Storage Status - Active**
 11. **C1561513** | **Immunization Registry Status - Active**
 12. **C1706449** | **Active Control**
 13. **C2347179** | **Active Study**

3.44 “alp” (degree 13) <no change from last year>

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. *C0102159* | *alizarinprimeveroside*
2. *C0201850* | *Alkaline phosphatase measurement*
3. *C0663932* | *SLPI protein, human*
4. *C1366565* | *SLPI gene*
5. *C1366566* | *CCL27 gene*
6. *C1412624* | *ATHS gene*
7. *C1424288* | *ASRGL1 gene*
8. *C1427121* | *PDLIM3 gene*
9. *C1428783* | *ATRNL1 gene*
10. *C1531719* | *Atherogenic lipoprotein phenotype*
11. *C1705078* | *CCL27 wt Allele*
12. *C1706468* | *SLPI wt Allele*
13. *C1826354* | *NAT10 gene*

3.45 “cat” (degree 13)

‘Chloramphenicol O-Acetyltransferase’, ‘X-Ray Computed Tomography’, ‘cytarabine/thioguanine’, ‘catalase activity’, ‘Chloramphenicol Acetyl Transferase Gene’ and ‘CAT gene’ should be suppressed (MetaMap only) because they are abbreviatory. ‘Family Felidae’, ‘Subfamily Felinae’, ‘Cat (antigen)’, and ‘allergy testing cat’ should be suppressed because they are specific kinds of “cat”. The concepts involved are

1. *C0007450* | *Felis catus*
2. *C0008169* | *Chloramphenicol O-Acetyltransferase*
3. *C0040405* | *X-Ray Computed Tomography*
4. *C0280589* | *cytarabine/thioguanine*
5. **C0325089** | **Family Felidae**
6. *C0325090* | *Felis silvestris*
7. *C0524517* | *Genus Felis*
8. *C1151515* | *catalase activity*
9. **C1270185** | **Subfamily Felinae**
10. *C1366498* | *Chloramphenicol Acetyl Transferase Gene*
11. *C1413138* | *CAT gene*
12. **C1963009** | **Cat (antigen)**
13. **C2097305** | **allergy testing cat**

3.46 “cd” (degree 13)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

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1. C0006632| *Cadmium*
 2. C0007570| *Celiac Disease*
 3. C0018553| *Hamartoma Syndrome, Multiple*
 4. C0043444| *Democratic Republic of the Congo*
 5. C0056447| *CP protocol*
 6. C0079141| *Compact discs*
 7. C0332140| *Diagnosis, clinical*
 8. C0700300| *candela*
 9. C1426202| *CELIAC3 gene*
 10. C1426204| *CELIAC2 gene*
 11. C1826449| *NOD2 gene*
 12. C1955216| *Clusters of differentiation*
 13. C2348923| *HLA-DQA1 wt Allele*

3.47 “cooing” (degree 13)

All thirteen cases should be suppressed because they are specific kinds of “cooing”. Their concepts are

1. C2137264| **cooing diastolic interscapular murmur**
2. C2137265| **cooing systolic interscapular region**
3. C2220637| **murmur left lower sternal border systolic cooing**
4. C2220657| **murmur left lower sternal border diastolic cooing**
5. C2220683| **murmur right lower sternal border systolic cooing**
6. C2220700| **murmur right lower sternal border diastolic cooing**
7. C2220730| **murmur left upper sternal border systolic cooing**
8. C2220749| **murmur left upper sternal border diastolic cooing**
9. C2220775| **murmur right upper sternal border systolic cooing**
10. C2220792| **murmur right upper sternal border diastolic cooing**
11. C2220818| **murmur axilla systolic cooing**
12. C2220835| **murmur apical diastolic cooing**
13. C2220871| **murmur axilla diastolic cooing**

3.48 “honking” (degree 13)

All thirteen cases should be suppressed because they are specific kinds of “honking”. Their concepts are

1. C2046972| **honking diastolic interscapular murmur**
2. C2046973| **honking systolic interscapular region**
3. C2220639| **murmur left lower sternal border systolic honking**
4. C2220659| **murmur left lower sternal border diastolic honking**
5. C2220685| **murmur right lower sternal border systolic honking**
6. C2220701| **murmur right lower sternal border diastolic honking**
7. C2220732| **murmur left upper sternal border systolic honking**
8. C2220750| **murmur left upper sternal border diastolic honking**
9. C2220777| **murmur right upper sternal border systolic honking**
10. C2220793| **murmur right upper sternal border diastolic honking**
11. C2220820| **murmur axilla systolic honking**
12. C2220836| **murmur apical diastolic honking**

13. C2220872| **murmur axilla diastolic honking****3.49 “ms” (degree 13)**

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0025867| *Metric System*
2. C0026221| *Mississippi (geographic location)*
3. C0026269| *Mitral Valve Stenosis*
4. C0026514| *Montserrat*
5. C0026769| *Multiple Sclerosis*
6. C0037813| *Mass Spectrometry*
7. C0439223| *millisecond*
8. C1417453| *MTR gene*
9. C1513009| *Master of Science*
10. C1552156| *Supernumerary mandibular left primary canine*
11. C1868685| *MULTIPLE SCLEROSIS, SUSCEPTIBILITY TO*
12. C1881819| *Microbiology Susceptibility Domain*
13. C2349943| *Ms. - Title*

3.50 “rasping” (degree 13)

All thirteen cases should be suppressed because they are specific kinds of “rasping”. Their concepts are

1. C2169393| **rasping diastolic interscapular murmur**
2. C2169394| **rasping systolic interscapular region**
3. C2220640| **murmur left lower sternal border systolic rasping**
4. C2220660| **murmur left lower sternal border diastolic rasping**
5. C2220686| **murmur right lower sternal border systolic rasping**
6. C2220702| **murmur right lower sternal border diastolic rasping**
7. C2220733| **murmur left upper sternal border systolic rasping**
8. C2220751| **murmur left upper sternal border diastolic rasping**
9. C2220778| **murmur right upper sternal border systolic rasping**
10. C2220794| **murmur right upper sternal border diastolic rasping**
11. C2220821| **murmur axilla systolic rasping**
12. C2220837| **murmur apical diastolic rasping**
13. C2220873| **murmur axilla diastolic rasping**

3.51 “c” (degree 12)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0007404| *Catechin*
2. C0009170| *Cocaine*
3. C0227087| *Maxillary right primary canine*
4. C0312905| *Blood group antigen C*
5. C0332287| *In addition to*

-
6. C0439106| *Upper case sea*
 7. C0439128| *Lower case sea*
 8. C0439237| *degrees Celsius*
 9. C0562424| *Coulomb*
 10. C1553033| *Cent*
 11. C1556156| *Nutrition, Calories*
 12. C1720692| *Roman numeral C*

3.52 “ec 2.7.1.-” (degree 12) <no change from last year>

All Enzyme Commission (EC) numbers (strings beginning “ec <integer>.”) are suppressed by MetaMap because they represent classes of enzymes and are consequently highly ambiguous. The concepts involved are

1. C0108836| *CDC7 protein, human*
2. C0108855| *CDK2 protein, human*
3. C0259367| *PCTAIRE Protein Kinase 1*
4. C0659150| *CHEK1 protein, human*
5. C0673406| *GPRK7 protein, human*
6. C1333180| *Cyclin-Dependent Kinase 10*
7. C1333735| *GPRK2L protein, human*
8. C1333738| *G Protein-Coupled Receptor Kinase Family*
9. C1337052| *PAK6 protein, human*
10. C1447440| *CDK3 protein, human*
11. C1744605| *G-protein-coupled receptor kinase 5*
12. C1744606| *G-protein-coupled receptor kinase 6*

3.53 “m” (degree 12)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0024554| *Male gender*
2. C0221134| *Blood group antigen M*
3. C0227102| *Mandibular left primary canine tooth*
4. C0439113| *Upper case emm*
5. C0439232| *Minute of time*
6. C0456533| *M - Metastasis stages*
7. C0475209| *meter*
8. C1553028| *Mega*
9. C1553034| *Milli*
10. C1706456| *Roman numeral upper case emm*
11. C1706457| *lower case emm*
12. C1883310| *One Thousand*

3.54 “not applicable” (degree 12) <no change from last year>

Except for ‘Not Applicable’, the remaining cases should be suppressed because they are specific kinds of “not applicable”. The concepts involved are

1. C1272460| Not Applicable
2. **C1546968| No Information - not applicable**
3. **C1547280| Production Class Code - Not Applicable**
4. **C1549103| Administrative Sex - Not applicable**
5. **C1609491| Patient Class - Not Applicable**
6. **C1610044| Derived specimen - Not Applicable**
7. **C1610595| Identity May Be Divulged - Not applicable**
8. **C1611147| CWE statuses - Not applicable**
9. **C1619691| Expanded yes/no indicator - not applicable**
10. **C1705112| Potency Not Applicable**
11. **C1705113| Dosage Form Not Applicable**
12. **C1705512| Route of Administration Not Applicable**

3.55 “p” (degree 12)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0031705| *Phosphorus*
2. C0033452| *Properdin*
3. C0080014| *Dietary Phosphorus*
4. C0202178| *Phosphorus measurement*
5. C0221133| *Blood group antigen P*
6. C0227095| *Deciduous mandibular right central incisor tooth*
7. C0439115| *upper case pea*
8. C0439140| *lower case pea*
9. C0439473| *newton per square metre*
10. C1553025| *peta unit of measure prefix*
11. C1553037| *Pico*
12. C1704238| *Tumor staging descriptor p*

3.56 “ptc” (degree 12) <no change from last year>

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0015491| *Factor IX*
2. C0203085| *Percutaneous transhepatic cholangiography*
3. C0238463| *Papillary thyroid carcinoma*
4. C0694890| *RET gene*
5. C1366464| *F9 gene*
6. C1419055| *TAS2R38 gene*
7. C1425774| *CCDC6 gene*
8. C1704885| *RET wt Allele*
9. C1705338| *F9 wt Allele*
10. C1705339| *PTCH wt Allele*
11. C1706229| *CCDC6 wt Allele*
12. C1826732| *PTCH1 gene*

3.57 “t” (degree 12)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0040223| *Time*
2. C0040715| *Chromosomal translocation*
3. C0227099| *Mandibular right second primary molar*
4. C0439119| *Upper case tea*
5. C0439143| *Lower case tea*
6. C0439216| *metric ton*
7. C0475455| *T - Tumor stage*
8. C1420562| *T gene*
9. C1522168| *Topical Route of Drug Administration*
10. C1551055| *Tesla - unit*
11. C1552647| *ProbabilityDistributionType - T*
12. C1553026| *tera units*

3.58 “transmitted along left sternal border” (degree 12)

All twelve cases should be suppressed because they are specific kinds of “transmitted along left sternal border”. Their concepts are

1. C2071936| **murmur left upper sternal border systolic transmitted along left sternal border**
2. C2071984| **murmur left upper sternal border diastolic transmitted along left sternal border**
3. C2072030| **murmur left upper sternal border continuous transmitted along left sternal border**
4. C2072079| **murmur right upper sternal border systolic transmitted along left sternal border**
5. C2072127| **murmur right upper sternal border diastolic transmitted along left sternal border**
6. C2072173| **murmur right upper sternal border continuous transmitted along left sternal border**
7. C2072219| **murmur right lower sternal border systolic transmitted along left sternal border**
8. C2072263| **murmur right lower sternal border diastolic transmitted along left sternal border**
9. C2072310| **murmur right lower sternal border continuous transmitted along left sternal border**
10. C2072489| **murmur apical systolic transmitted along left sternal border**
11. C2072533| **murmur apical diastolic transmitted along left sternal border**
12. C2072576| **murmur apical continuous transmitted along left sternal border**

3.59 “transmitted to the apex” (degree 12)

All twelve cases should be suppressed because they are specific kinds of “transmitted to the apex”. Their concepts are

1. C2071939| **murmur left upper sternal border systolic transmitted to apex**

2. C2071987| murmur left upper sternal border diastolic transmitted to apex
3. C2072033| murmur left upper sternal border continuous transmitted to the apex
4. C2072082| murmur right upper sternal border systolic transmitted to apex
5. C2072130| murmur right upper sternal border diastolic transmitted to apex
6. C2072176| murmur right upper sternal border continuous transmitted to apex
7. C2072221| murmur right lower sternal border systolic transmitted to apex
8. C2072265| murmur right lower sternal border diastolic transmitted to apex
9. C2072312| murmur right lower sternal border continuous transmitted to apex
10. C2072358| murmur left lower sternal border systolic transmitted to apex
11. C2072402| murmur left lower sternal border diastolic transmitted to apex
12. C2072445| murmur left lower sternal border continuous transmitted to apex

3.60 “a” (degree 11)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0227089| *Deciduous maxillary right second molar tooth*
2. C0348042| *Blood group antigen A*
3. C0439234| *year*
4. C0457243| *Ampere*
5. C1442985| *Tumor staging descriptor a*
6. C1442986| *Abdominal lymph node tumor invasion status A (tumor staging)*
7. C1522424| *A Mouse*
8. C1553039| *Atto*
9. C1706280| *Lower case Roman letter a*
10. C1706281| *Upper case Roman letter A*
11. C1706282| *Lymphoma staging symptom status A*

3.61 “ad” (degree 11) <no change from last year>

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0002395| *Alzheimer's Disease*
2. C0002838| *Andorra*
3. C0010934| *Dactinomycin*
4. C0050841| *dacarbazine/doxorubicin protocol*
5. C0228318| *Anterodorsal nucleus of thalamus*
6. C0280573| *cytarabine/daunorubicin protocol*
7. C0332133| *Admitting Diagnosis*
8. C0547043| *Up*
9. C1630418| *AD Substance*
10. C1704642| *Analysis Dataset Domain*
11. C1706476| *AD Term Type*

3.62 “as” (degree 11)

Except for ‘As - dosing instruction fragment’ and ‘As - qualifier’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. Suppress ‘As - dosing instruction fragment’ and ‘As - qualifier’ because they are specific kinds of “as”. The concepts involved are

1. C0003507| *Aortic valve stenosis*
2. C0003818| *Arsenic*
3. C0162635| *Angelman Syndrome*
4. C0242536| *American Samoa*
5. C1150694| *asparagine synthase (glutamine-hydrolyzing) activity*
6. C1421293| *UBE3A gene*
7. C1442846| *AS gene*
8. C1549947| *Associate of Science*
9. C1563293| *Supernumerary maxillary right second primary molar*
10. C1706103| **As - dosing instruction fragment**
11. C1883713| **As - qualifier**

3.63 “asp” (degree 11)

Except for ‘Asp snake’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0004015| *Aspartic Acid*
2. C0085845| *Aspartate*
3. C0206293| *Asp snake*
4. C0370199| *Aspirate substance*
5. C1412581| *ASIP gene*
6. C1412591| *ASPA gene*
7. C1425978| *ASPM gene*
8. C1538881| *ROPNIL gene*
9. C1825497| *ATG5 gene*
10. C1852701| *ACYLATION-STIMULATING PROTEIN*
11. C2240226| *AICF gene*

3.64 “cam” (degree 11) <no change from last year>

Except for ‘Cam, topical lotion’ and ‘CAM brand of Ephedrine Hydrochloride’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. Suppress ‘CAM brand of Ephedrine Hydrochloride’ (MetaMap only) because it is a brand name. The concepts involved are

1. C0007578| *Cell Adhesion Molecules*
2. C0054551| *cyclophosphamide/doxorubicin/methotrexate protocol*
3. C0178551| *chorioallantoic membrane*
4. C0678112| *CAM brand of Ephedrine Hydrochloride*
5. C0713465| *Cam, topical lotion*
6. C1148475| *Complementary and alternative medicine*
7. C1366910| *Calmodulin 1*
8. C1366911| *Cerebral Cavernous Malformations 1*
9. C1537503| *KRIT1 gene*

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10. C1706432| *KRIT1 wt Allele*
 11. C1861784| *CEREBRAL CAVERNOUS MALFORMATIONS*

3.65 “car” (degree 11)

Except for ‘Automobiles’ and ‘Car - Mode of Arrival Code’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. ‘Car - Mode of Arrival Code’ should be suppressed because it is a specific kind of “car”. The concepts involved are

1. C0004381| *Automobiles*
2. C0406810| *Atrial myxoma with lentiginos*
3. C1166663| *actomyosin contractile ring*
4. C1413828| *CXADR gene*
5. C1417827| *NR1I3 gene*
6. C1420354| *SPG7 gene*
7. **C1547285| Car - Mode of Arrival Code**
8. C1622899| *car <invertebrate>*
9. C1706434| *RFP2 wt Allele*
10. C1858724| *Caronte Gene*
11. C2239319| *CXADRP1 gene*

3.66 “kit” (degree 11)

Except for ‘Kit device’, ‘Kit Component of Device’, and ‘Drug Kit’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. The concepts involved in this ambiguity are

1. C0072470| *Proto-Oncogene Protein c-kit*
2. C0812225| *Kit device*
3. C0920288| *C-KIT Gene*
4. C1416655| *KIT gene*
5. C1553450| *Kit Code*
6. C1690540| *Kit Dosing Unit*
7. C1704742| *Kit Dosage Form*
8. C1704888| *KIT wt Allele*
9. C1705212| *Kit Component of Device*
10. C1705213| *Drug Kit*
11. C2266503| *KIT transmembrane receptor protein tyrosine kinase activity*

3.67 “mac” (degree 11)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0009545| *Complement Membrane Attack Complex*
2. C0024403| *Macao*
3. C0026916| *Mycobacterium avium-intracellulare Infection*
4. C0065465| *cyclophosphamide/dactinomycin/methotrexate protocol*
5. C0083360| *chlorambucil/dactinomycin/methotrexate protocol*
6. C0279190| *cyclophosphamide/doxorubicin/mitomycin protocol*

7. C0451273| *MacAndrew Alcoholism Scale*
8. C0453947| *Raincoat*
9. C0969807| *Methotrexate-Actinomycin-Chlorambucil Regimen*
10. C1167383| *membrane attack complex location*
11. C1416956| *MARCKS gene*

3.68 “p14” (degree 11) <no change from last year>

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0054505| *Calgranulin B*
2. C0292779| *activated RNA polymerase II transcription cofactor 4*
3. C0525037| *CDKN2A gene*
4. C1335798| *SI00A9 gene*
5. C1423800| *CTNNB1 gene*
6. C1428962| *RPP14 gene*
7. C1540306| *CDK2AP2 gene*
8. C1704874| *SI00A9 wt Allele*
9. C1709390| *SUB1 gene*
10. C1835861| *MAPBP-INTERACTING PROTEIN GENE*
11. C1842980| *SPLICING FACTOR 3B, 14-KD SUBUNIT GENE*

3.69 “patient” (degree 11) <no change from last year>

Except for ‘Patients’, the remaining cases should be suppressed because they are specific kinds of “patient”. The concepts involved are

1. C0030705| *Patients*
2. C1550655| **Specimen Type - Patient**
3. C1578478| **Role Class - patient**
4. C1578479| **Role Code - Patient recipient**
5. C1578480| **Role Code - Patient specimen**
6. C1578481| **Mail Claim Party - Patient**
7. C1578483| **Report source - Patient**
8. C1578484| **Relationship modifier - Patient**
9. C1578485| **Specimen Source Codes - Patient**
10. C1578486| **Disabled Person Code - Patient**
11. C1705908| **Veterinary Patient**

3.70 “ts” (degree 11)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0040517| *Gilles de la Tourette's syndr.*
2. C0040963| *Tricuspid Valve Stenosis*
3. C0041341| *Tuberose Sclerosis*
4. C1366824| *TYMS gene*
5. C1413057| *CACNA1C gene*

6. C1420620| *TBXAS1 gene*
7. C1552162| *Supernumerary mandibular right second primary molar*
8. C1704618| *Trial Summary Domain*
9. C1705746| *TYMS wt Allele*
10. C1832916| *TIMOTHY SYNDROME*
11. C1868676| *GROWTH CONTROL, Y-CHROMOSOME INFLUENCED*

3.71 “yes” (degree 11) <no change from last year>

Except for ‘YES1 gene’, ‘Yes (indicator)’ and ‘Yes - Yes/no indicator’, the remaining cases should be suppressed because they are specific kinds of “Yes”. Suppress ‘YES1 gene’ (MetaMap only) because it is abbreviatory. The concepts involved are

1. C0919479| *YES1 gene*
2. C1298907| **Yes - Presence findings**
3. C1546945| **Yes - Event Seriousness**
4. C1546947| **Yes - Event Expected**
5. C1546969| **Yes - Identity May Be Divulged**
6. C1548171| **Yes - Release Information**
7. C1549060| **Yes - Expanded yes/no indicator**
8. C1549065| **Yes - Notify Clergy Code**
9. C1549443| **Yes - Assignment of Benefits**
10. C1549445| Yes - Yes/no indicator
11. C1705108| Yes (indicator)

3.72 “at3” (degree 10) <no change from last year>

Except for ‘Antithrombin III’, the remaining cases should be suppressed because they are specific kinds of “Antithrombin III Deficiency”. Suppress ‘Antithrombin III’ (MetaMap only) because it is abbreviatory. The concepts involved are

1. C0003438| *Antithrombin III*
2. C1862776| **Antithrombin III Deficiency PADUA 2**
3. C1862777| **Antithrombin III Deficiency ROMA [sic]**
4. C1862778| **Antithrombin III Deficiency TRENTO**
5. C1862781| **Antithrombin III Deficiency FONTAINBLEAU**
6. C1862784| **Antithrombin III Deficiency CLICHY**
7. C1862786| **Antithrombin III Deficiency Barcelona**
8. C1862789| **Antithrombin III Deficiency BARCELONA 2**
9. C1862790| **Antithrombin III Deficiency AVRANCHES**
10. C1862797| **Antithrombin III Deficiency Paris**

3.73 “bar” (degree 10) <no change from last year>

Except for ‘External fixator bar’, ‘Taverns’, ‘Bar form’, and ‘bar unit of measure’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0001643| *beta-2 Adrenergic Receptors*
2. C0441233| External fixator bar

3. C0687760| Taverns
4. C0993613| Bar form
5. C1367657| *ADRB2 Gene*
6. C1417825| *NR1H4 gene*
7. C1425012| *BFAR gene*
8. C1551065| bar unit of measure
9. C1704463| *ADRB2 wt Allele*
10. C1704759| *Bar Dosing Unit*

3.74 “ec 2.7.1.37” (degree 10) <no change from last year>

All Enzyme Commission (EC) numbers (strings beginning “ec <integer>.”) are suppressed by MetaMap because they represent classes of enzymes and are consequently highly ambiguous. The concepts involved are

1. C0033640| *PROTEIN KINASE*
2. C0072402| *Protein-Serine-Threonine Kinases*
3. C0244987| *glycogen synthase kinase 3 alpha*
4. C0294209| *LIM Domain Kinase 1*
5. C0380146| *activin receptor-like kinase 1*
6. C0541150| *3-Phosphoinositide Dependent Protein Kinase-1*
7. C1314894| *Col4A3 protein, human*
8. C1332856| *Casein Kinase 2, Alpha 1 Polypeptide*
9. C1447968| *ACVR1 protein, human*
10. C1880254| *Death-Associated Protein Kinase 1 Protein*

3.75 “f” (degree 10)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0015780| *Female*
2. C0016330| *Fluorine*
3. C0439109| *Upper case eff*
4. C0439132| *Lower case eff*
5. C0456628| *Degrees fahrenheit*
6. C0582515| *farad*
7. C1533615| *Maxillary left central primary incisor*
8. C1552648| *Probability Distribution Type - F*
9. C1553038| *Femto*
10. C2348266| *Dietary Fluorine*

3.76 “gas” (degree 10)

‘GALNS gene’, ‘GAST gene’, ‘Beta-hemolytic Streptococcus, group A’, ‘Gas Dosage Form’, and ‘germacrene-A synthase activity’ should be suppressed (MetaMap only) because they are abbreviatory. ‘Gas - Specimen Source Codes’ and ‘Gas - SpecimenType’ should be suppressed because they are specific kinds of “gas”. The concepts involved are

1. C0016204| [D]Flatulence

-
2. C0017110| Gases
 3. C0596601| gastrointestinal gas
 4. C1414950| *GALNS gene*
 5. C1439341| *GAST gene*
 6. C1541907| *Beta-hemolytic Streptococcus, group A*
 7. **C1546643| Gas - Specimen Source Codes**
 8. **C1550641| Gas - Specimen Type**
 9. C1704673| *Gas Dosage Form*
 10. C2266618| *germacrene-A synthase activity*

3.77 “ice” (degree 10)

Except for ‘Ice’, ‘cryotherapy using ice’, and ‘Ice Pharmaceutical’, the remaining cases should be suppressed (MetaMap only) because they are abbreviatory. ‘cryotherapy using ice’ should be suppressed because it is a specific kind of “ice”. The concepts involved are

1. C0020746| Ice
2. C0025611| *Methamphetamine*
3. C0249492| *cytarabine/etoposide/idarubicin*
4. C0280697| *carboplatin/etoposide/ifosfamide*
5. C0534519| *Caspase-1*
6. **C0556917| cryotherapy using ice**
7. C1366479| *CASP1 gene*
8. C1413348| *CES2 gene*
9. C1705786| *CASP1 wt Allele*
10. C1873773| Ice Pharmaceutical

3.78 “k” (degree 10)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0032821| *Potassium*
2. C0162800| *Dietary Potassium*
3. C0202194| *Potassium measurement*
4. C0227104| *Deciduous mandibular left second molar tooth*
5. C0313040| *Blood group antigen KEL 1*
6. C0439112| *Upper Case Kay*
7. C0439137| *Lower case kay*
8. C0439239| *Kelvin*
9. C1553029| *Kilo*
10. C1883310| *One Thousand*

3.79 “no” (degree 10) <no change from last year>

Except for ‘Norway’, ‘no’, and ‘No - yes/no indicator’, the remaining cases should be suppressed because they are specific kinds of “no”. Suppress ‘Norway’ (MetaMap only) because it is abbreviatory. The concepts involved are

1. C0028423| *Norway*

-
2. C1298908| no
 3. **C1546943| No - Event Seriousness**
 4. **C1546946| No - Event Expected**
 5. **C1546967| No - Identity May Be Divulged**
 6. **C1548170| No - Release Information**
 7. **C1549056| No - Expanded yes/no indicator**
 8. **C1549062| No - Notify Clergy Code**
 9. **C1549442| No - Assignment of Benefits**
 10. C1549444| No - yes/no indicator

3.80 “normal” (degree 10) <no change from last year>

Except for ‘Normal’ and ‘Normal assessment finding’, the remaining cases should be suppressed because they are specific kinds of “normal”. The concepts involved are

1. C0205307| Normal
2. **C1550457| Normal Observation Interpretation**
3. **C1550469| normal Confidentiality**
4. **C1551394| normal Device Alert Level**
5. **C1553386| normal Act Status**
6. **C1553399| normal Managed Participation Status**
7. **C1553402| normal Role Status**
8. **C1553406| normal Entity Status**
9. **C1704701| Normality-Based Dosing Unit**
10. C1873497| Normal assessment finding

3.81 “p40” (degree 10) <no change from last year>

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0050854| *adjuvant P40*
2. C0085424| *Interleukin-9*
3. C1367780| *Laminin Receptor-1*
4. C1412528| *ARHGEF2 gene*
5. C1416795| *LANCL1 gene*
6. C1419038| *PSMD7 gene*
7. C1456382| *EBNA1BP2 gene*
8. C1539696| *RPSA gene*
9. C1705231| *RPSA wt Allele*
10. C1826761| *RABEPK gene*

3.82 “psa” (degree 10)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0138741| *Prostate-Specific Antigen*
2. C0201544| *Prostate specific antigen measurement*
3. C0687688| *public service announcement*

4. C1366489| *KLK3 gene*
5. C1417779| *NPEPPS gene*
6. C1418948| *PROS1 gene*
7. C1426033| *PSAT1 gene*
8. C1519176| *Salivary Gland Pleomorphic Adenoma*
9. C1705954| *KLK3 wt Allele*
10. C2347427| *PLAG1 wt Allele*

3.83 “pt” (degree 10)

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0030705| *Patients*
2. C0032207| *Platinum*
3. C0032729| *Portugal*
4. C0033707| *Prothrombin time assay*
5. C0175252| *Paratenial Nucleus*
6. C0560012| *pint*
7. C0949766| *Physical therapy*
8. C1442880| *Point in time*
9. C1705337| *PT Term Type*
10. C2347664| *Preferred Term*

3.84 “radiology” (degree 10) <no change from last year>

Except for ‘Radiology Speciality’, ‘Radiology studies’, and ‘Radiographic imaging procedure’, the remaining cases should be suppressed because they are specific kinds of “radiology”. The concepts involved are

1. C0034599| *Radiology Specialty*
2. C0807679| *Radiology studies*
3. **C1405978| *Encounter due to radiological examination***
4. **C1548000| *Radiology Section ID***
5. **C1548429| *radiology referral type***
6. **C1552284| *Radiology Podiatrist***
7. **C1555923| *Radiology Chiropractor***
8. **C1608525| *Radiology - NUCCProvider Codes***
9. **C1610162| *Radiology - Clinic/Center - NUCCProviderCodes***
10. C1962945| *Radiographic imaging procedure*

3.85 “sports medicine” (degree 10) <no change from last year>

Except for ‘sports medicine specialty’, the remaining cases should be suppressed because they are specific kinds of “sports medicine”. The concepts involved are

1. C0038040| *sports medicine specialty*
2. **C1552285| *Podiatrist - Sports Medicine***
3. **C1555741| *Emergency Medicine - Sports Medicine***
4. **C1555748| *Family Practice - Sports Medicine***

5. C1555771| **Internal Medicine - Sports Medicine**
6. C1555800| **Orthopedic Surgery - Sports Medicine**
7. C1555844| **Pediatrics - Sports Medicine**
8. C1555849| **Physical Medicine & Rehabilitation - Sports Medicine**
9. C1555858| **Preventive Medicine - Sports Medicine**
10. C1555872| **Psychiatry & Neurology - Sports Medicine**

3.86 “tr” (degree 10) <no change from last year>

Suppress ambiguous form(s) (MetaMap only) because they are abbreviatory. The concepts involved are

1. C0040961| *Tricuspid Valve Insufficiency*
2. C0041400| *Country of Turkey*
3. C0332121| *Treatment required for*
4. C1366448| *TERC gene*
5. C1366449| *F2R gene*
6. C1420775| *TMEFF2 gene*
7. C1425351| *TXNRD2 gene*
8. C1619635| *CD71 antigen*
9. C1705312| *TERC wt Allele*
10. C1705939| *F2R wt Allele*

3.87 “transmitted along right sternal border” (degree 10)

All ten cases should be suppressed because they are specific kinds of “transmitted along right sternal border”. Their concepts are

1. C2071937| **murmur left upper sternal border systolic transmitted along right sternal border**
2. C2071985| **murmur left upper sternal border diastolic transmitted along right sternal border**
3. C2072031| **murmur left upper sternal border continuous transmitted along right sternal border**
4. C2072174| **murmur right upper sternal border continuous transmit along right sternal border**
5. C2072356| **murmur left lower sternal border systolic transmitted along right sternal border**
6. C2072400| **murmur left lower sternal border diastolic transmitted along right sternal border**
7. C2072443| **murmur left lower sternal border continuous transmitted along right sternal border**
8. C2072490| **murmur apical systolic transmitted along right sternal border**
9. C2072534| **murmur apical diastolic transmitted along right sternal border**
10. C2072577| **murmur apical continuous transmitted along right sternal border**

3.88 “u” (degree 10)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

-
1. C0041928| *Uranium*
 2. C0439144| *Lower case you*
 3. C0439148| *Unit*
 4. C0439673| *Unknown*
 5. C0595976| *U ANTIGEN*
 6. C0678223| *dalton*
 7. C1519795| *Unit of Measure*
 8. C1553035| *Unit Of Measure Prefix - micro*
 9. C1706493| *Upper case you*
 10. C1880519| *Enzyme Unit*

3.89 “y” (degree 10)

All single letters are suppressed by MetaMap because they are highly ambiguous. The concepts involved are

1. C0043432| *Yttrium*
2. C0439123| *Upper case why*
3. C0439147| *Tumor staging descriptor y*
4. C1419016| *PSMB6 gene*
5. C1553022| *Yotta*
6. C1553041| *Yocto*
7. C1704670| *Y-Coordinate*
8. C1704671| *Y-Dimension*
9. C1705108| *Yes (indicator)*
10. C1720216| *Lower case Roman letter y*

4. Appendix

Data contained in all tables in this report are obtained from the current year’s ambiguity study directory, \$NLS/specialist/module/metawordindex/data.XX/01Ambiguity.

4.1 Populating Table 1

1. For concepts with one or more ambiguity:
wc -l ambiguity_cases.cuis
2. For concepts with one or more non-suppressible ambiguity:
wc -l supp.ambiguity_cases.cuis
3. For cases of ambiguity:
wc -l ambiguity_cases.unique
4. For cases of non-suppressible ambiguity:
wc -l supp.ambiguity_cases.unique

4.2 Populating Tables 2 and 3

To populate Table 2 simply fill in the values, adding new rows as necessary, from the file ambiguity_cases.counts in the ambiguity study directory; to populate Table 3 use the file supp.ambiguity_cases.counts instead