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MeSH TERMBASE PROJECT Virus Diseases

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Abstract

This dissertation is a contribution to the MeSH Termbase Project monitored by the Terminology Centre (CvT) of the LT3 research group in the Department of Translation, Interpreting and Communication at Ghent University. The purpose of this project is to generate a bilingual database of medical concepts in Dutch and English based on a controlled vocabulary thesaurus called Medical Subject Headings (MeSH). In this dissertation, twelve English medical concepts selected from MeSH, in particular from the category of Virus Diseases (C02), are discussed, and, an attempt is made to find accurate Dutch equivalents for the English terms. For each of the twelve concepts, a Dutch translation or equivalent is suggested based on evidence from, among other sources, Dutch, English and bilingual medical dictionaries and Dutch and English primary medical sources. Volume I consists of the introduction, the theoretical framework and the conclusion of this dissertation, as well as the discussion per concept. Volume II contains the different appendices, such as the GenTerm sheets that are used to record and store the terminographical data of the concepts.

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VOLUME I

1. INTRODUCTION

1.1. Subject and structure of this dissertation

This dissertation is part of the MeSH Termbase Project monitored by the Terminology Centre (CvT) of the LT3 research group in the Department of Translation, Interpreting and Communication at Ghent University.

The purpose of the MeSH Termbase Project is to generate a bilingual database of medical concepts in Dutch and English based on a controlled vocabulary thesaurus called Medical Subject Headings (MeSH). I use the term 'concepts' because they can be denominated through different terms in English as well as in Dutch.

In this dissertation, twelve concepts and their potential terms and translations will be discussed. These concepts are listed in the MeSH 2016 version under the category of *Virus Diseases* (C02), which is a subcategory of the topmost category *Diseases*. More specifically, the concepts discussed in this dissertation can be subdivided into two different subcategories under *Virus Diseases*: *RNA Virus Infections* and *DNA Virus Infections*. The twelve concepts that will be discussed are: *human influenza, influenza in birds, HTLV-I infections* and *HTLV-II infections* and *HTLV-II infections* (all under *RNA virus infections*), *HIV infections*, which is subdivided into *HIV enteropathy, HIV seropositivity, HIV wasting syndrome* and *HIV-associated lipodystrophy syndrome* (also under *RNA Virus Infections*) and *human adenovirus infections, infectious ectromelia* and *monkeypox* (all under *DNA virus infections*).

The paper is structured as follows: in the introduction, more information will be provided regarding the project itself and its methodology. This implies the explanation of MeSH in paragraph 1.2., subdivided into the structure of MeSH and the MeSH Termbase Project, and GenTerm in 1.3. Furthermore, in 1.4. terminology, a theoretical framework for this dissertation will be provided, followed by a personal motivation (1.5.) and the methodology of the research (1.6.). In chapter 2, each concept will be discussed, followed by a conclusion (chapter 3) and the references in chapter 4.

1.2. <u>MeSH</u>

MeSH is an acronym for *Medical Subject Heading* (Fact sheet 2015-10-06). It is the controlled vocabulary thesaurus of the United States National Library of Medicine (NLM), the world's largest biomedical library. The thesaurus can be consulted at

www.nlm.nih.gov/mesh. Its purpose is to index, catalogue and retrieve biomedical and healthrelated information and documents. In fact, MeSH is a feature of the MEDLINE/PubMed database, which contains journal citations and abstracts for biomedical literature with links to full text articles when those are available (**Fact sheet 2016-02-04**).

1.2.1. MeSH structure

The thesaurus itself consists of medical terms, called descriptors, that are classified in alphabetical order as well as in a hierarchical structure. In this dissertation, it is the latter that is the more relevant structure and that will be further discussed.

In the hierarchical structure the sixteen descriptors on the topmost level are very broad, such as *anatomy*, *diseases*, and *humanities*. These generic concepts are assigned a capital letter and subdivided into more specific concepts, whose medical terms are indicated with a number preceded by a leading zero. The descriptor *diseases* (C), for example, is further subdivided into *virus diseases* (C02), *parasitic diseases* (C03), *cardiovascular diseases* (C14), etcetera. These subdivisions are in turn subdivided into more specific concepts, adding new numbers in the process. Therefore, the hierarchical structure is also known as the tree structure of the thesaurus and can consist of up to seven levels. Evidently, the descriptors on the lowest or narrowest levels are the most specific ones.

Moreover, numerous synonyms, near synonyms and closely related concepts are added to enhance the retrieval of certain descriptors. The term *human influenza*, for example, can be consulted via other entry terms as well, such as *human flu*, *influenza*, etc. A descriptor can also appear in different categories or subcategories of the thesaurus. For instance, *human influenza* appears not only under the subcategory of *virus diseases*, but also under *respiratory tract diseases*.

Furthermore, the MeSH thesaurus is updated annually and the 2016 version currently contains over 27,000 descriptors (**Fact sheet 2016-04-02**). To quickly locate a certain descriptor and display its hierarchy, an online vocabulary look-up tool named the MeSH browser was developed.

1.2.2. MeSH Termbase Project

This dissertation is part of the MeSH Termbase Project that was launched in 1987 as a partnership between the VHI (Vlaams Huisartsen Instituut), now known as Domus Medica,

the association of Flemish General Practitioners, and the Faculty of Translation Studies, which is now called the Department of Translation, Interpreting and Communication.

As mentioned before in section 1.1., the aim of this project is to generate a bilingual database of medical terms in Dutch and English. These medical terms are retrieved from the *Medical Subjects Headings* or MeSH thesaurus that was described in section 1.2. above. As this thesaurus is very comprehensive (there are 27,883 descriptors in the 2016 version of the thesaurus and over 87,000 additional entry terms (**Fact sheet 205-10-19**)), every year students participate in this project by means of a master's thesis in order to extend the bilingual database. Using the GenTerm method, which will be explained in paragraph 1.3., researchers select an adequate Dutch translation for each English medical concept through thorough analysis of the term(s) and its or their potential translation(s), adding terminological information, such as definitions, synonyms and homonyms, an international term, spelling variations, geographical variations, and other extra information.

1.3. GenTerm

GenTerm, derived from 'Ghent' and 'term', is the method used by the Ghent University Terminology Centre (CvT) to record and store terminographical data (GenTerm 2015-10-19). It was introduced in the early 1990s as an alternative to the askSam format that researchers struggled with (GenTerm 2015-10-19). Specifically, Ghent University students, professors and other researchers apply this method for the MeSH Termbase Project, the EDiCT Project (a termbase of communication within businesses, organizations and the press) and the IATE project (the European Union's multilingual termbase) (GenTerm 2015-10-19).

GenTerm provides those Ghent University researchers with a structure to organize the relevant data that they need for each one of the projects mentioned, and allows those data to be recorded directly into the termbase to which other students, professors and researchers have access. GenTerm is a concept-oriented method, in other words, one term record unites all the data relative to the same concept (**GenTerm 2015-10-19**). These term records consist of two different components which are called 'sheets', namely the Translation Sheet and the Language-Definition-Concept Sheet. Both sheets are subdivided into different fields.

The Translation Sheet serves as starting point for the concept in the language of a particular project. In the context of this study, I attempt to find adequate Dutch translations for English concepts in MeSH. The language used on the Translation Sheet will be Dutch with the

exception of the equivalence field, which will be in English. As mentioned before, the sheet is subdivided into different fields (**Callewaert, P. 14-23**):

- 1. MeSH Heading. Here, the concept that will be discussed in the discussion per concept is written exactly as how it is written in the MeSH thesaurus itself.
- 2. Scope Note. This is a short definition of the concept provided by MeSH.
- 3. Vakgebied (subject field). An example of such a subject field is magnetism.
- UDC, which stands for Universal Decimal Classification. Here, the UDC number of the subject field is mentioned. For magnetism, for example, this is 537.6. The UDClist can be consulted on http://www.udcc.org.
- 5. Project. Here, the name of the project is mentioned. In my case, it is E8 JA 8.
- 6. Werkcode (work code). In the MeSH Termbase Project this code stands for the code of the concept in MeSH. For *Influenza in Birds*, for example, the code is C02.782.620.375. This code also indicates the hierarchical structure of the MeSH thesaurus: C stands for one of the sixteen most general descriptors, namely *Diseases*. The 02 then stands for *Virus Diseases*, 782 for *RNA Virus Infections*, 620 indicates the subcategory of *Orthomyxoviridae Infections* and 375 represents *Influenza in Birds*.
- 7. Begrip (notion). This is a short, "ideal" definition of the concept which is not literally cited form another source.
- 8. Internationale term (international term). This is the established international denomination of the term (in Latin), if available.
- 9. Nl-term (denomination of the term in Dutch). In this field, the preferred Dutch translation of the concept is mentioned, followed by its true synonyms. The translation sheet also contains a field for the denomination of the term in English.
- 10. Equivalentie (equivalence). Sometimes a Dutch term provides a broader or a narrower meaning than the English term of a concept. This information, along with information on homonyms, will be added in this field. The Translation Sheet also contains a field for the equivalence of the English terms.
- 11. Beeld (image). In this field one or more specific images that illustrate the concept can be added.

On the Language-Definition-Concept Sheet linguistic information is added for every term that appears on the Translation Sheet. Each Language-Definition-Context Sheet contains a Language Sheet, a Definition Sheet and a Context Sheet.

Similarly to the Translation Sheet, the Language Sheet is also subdivided into different fields such as "trefwoord" (entry), "betrouwbaarheid" (reliability), "woordsoort" (lexical category), "collocaties" (collocations) and "uitspraak" (pronunciation). On the Definition Sheet, a quoted definition is added which can be completed with a comment. Finally, the Context Sheet contains a maximum of three contexts in which the discussed term appears, as well as references to other sources were the term is used.

1.4. <u>Terminology</u>

The MeSH controlled vocabulary thesaurus as well as the MeSH Termbase Project are both to be situated in the discipline of terminology. I will therefore discuss the notion of terminology in section 1.4.1. and the role of terminology in medicine in section 1.4.2.

1.4.1. The theory of terminology

Even though terminology is a widely known concept, **Cabré, M. T., 1 6** states that not all experts consider terminology as a separate discipline, nor a theoretical subject. More specifically, some denominate terminology as a practice to deal with social needs, often related to politics and economics, while others are convinced that terminology is a true scientific discipline (**Cabré, M. T. 1 6**).

In **Cabré, M. T. 2 168-169**, it is mentioned that this is the result of the development of the theory itself: the theory of terminology has not been developed through the specific scientific procedures such as formulation of hypotheses, empirical analysis, and other elements of scientific research, in contrast to other scientific disciplines that were generated through these procedures. Instead, the theory of terminology was created and progressed through practical experience and the need to solve communication problems based on language (**Cabré, M. T. 17**).

Cabré, M. T. 1 7 bases the general theory of terminology upon the approach in which terminology is regarded as an interdisciplinary but autonomous subject. In this approach, terminology is employed in scientific and technical disciplines. According to **Cabré M. T. 1 7**, the most important features of terminology in this approach are: "the nature of concepts, conceptual relations, the relationships between terms and concepts and assigning terms to concepts." This approach enables researchers to distinguish the methods used in terminology from those used in lexicography (**Cabré, M. T. 1 7**).

Furthermore, the evolution of terminology has also motivated the development of term banks or term bases. Many of these term bases are linked with translation. In fact, translation departments of large organisations created the first term bases (**Nkwenti-Azeh, B. 84**). These term bases had different purposes, such as adding up-to-date multilingual terminology to printed dictionaries, making the work of specialists more widely available, stimulating more terminological consensus among translations and accelerating the translation process (**Nkwenti-Azeh, B. 84**).

With regard to the terms or terminological units themselves, **Cabré**, **M. T. 2 184** describes them as follows: "We consider terminological units as sets of conditions which distinguish them from other similar but different units." These conditions emerge from three different components (**Cabré**, **M. T. 2 184**):

1. The cognitive component of terminological units:

- The units depend on a thematic context
- They occupy a precise place in a conceptual structure
- Their specific meaning is determined by their place in this structure
- This meaning is explicitly fixed
- This meaning is considered as a property of the unit
- They are fixed, recognised and disseminated with the help of the expert community
- 2. The linguistic component of terminological units:
 - They are lexical units, either through their lexical origin or a process of lexicalisation
 - They can have lexical and syntactic structure
 - As lexical structures they exploit all the devices of word formation and the processes of acquiring new units
 - Formally, they may coincide with units belonging to general discourse
 - Regarding word class, they occur as nouns, verbs, adjectives or adverbs or nominal, verbal, adjectival or adverbial structures
 - They belong to one of the broad semantic categories: entities, events, properties or relations; these categories with their own subcategories do not necessarily exclude each other and should therefore be rather considered as semantic values
 - Their meaning is discreet within a special subject

- Their meaning is extracted from the set of information of a lexical unit
- Their syntactic combinability is restricted on the basis of the combinatory principles of all lexical items of a language
- 3. The communicative component of terminological units:
 - They occur in specialised discourse
 - Formally, they adapt to this type of discourse according to their thematic and functional characteristics
 - They share specialised discourse with units belonging to other iconic or symbolic systems
 - They are acquired through a learning process and hence are handled by specialists in their field
 - They are basically denotative (which does not exclude connotations)

1.4.2. Terminology in medicine

Just as English is used as a lingua franca all over the world, according to Markham, C. 2015-10-19, medical terminology is used as a universal language for health care and the health industry. Moreover, medical terminology is necessary to describe the condition or problems of a patient more accurately, in order to avoid confusion between health workers and provide the correct treatment for the patient (Markham, C. 2015-10-19). Using a medical term for a patient's condition may also help the patient and his or her loved ones to deal with the situation as some details of the condition may remain more discreet (Markham, C. 2015-10-19).

In practice, it has become clear that a condition can be described through various medical terms that appear to be synonyms. In that case, however, it is important to distinguish between true synonyms versus near synonyms as well as technical versus popular terms, and take into account the variations and commonness of these terms (**Buysschaert, J. 40**). This dissertation bears all of these notions in mind through the GenTerm method explained in paragraph 1.3.

1.5. Personal Motivation

Currently I am a student in the Master of Arts in Multilingual Communication at Ghent University after completing the Bachelor of Arts in Applied Language Studies with Dutch, English and Spanish as my languages. This Bachelor programme included various translation courses in both English and Spanish during which I learned the notion of terminology and its importance. The world has become a global village in which communication and, consequently, languages play a major role. Within this concept of a global village, terminology is especially present in specific fields, such as economics, science, medicine, and so on. All of this I find very interesting and it motivates me to participate in a project that aims to facilitate communication and comprehension of certain terms and concepts in different languages.

Secondly, the field of medicine has always fascinated me as well. For my bachelor's thesis I examined the frequency of reformulation markers in popular and academic medical texts. I consciously chose this topic because it combined my passion for languages as well as medical topics. Moreover, I often watch medical programmes and series such as *E&A London*, *House M.D.* and *Mystery Diagnosis*, and sometimes I am astonished by the (often inadequate) Dutch translations of English medical concepts. This encouraged me even more to participate in this project.

1.6. Methodology

As explained above, this dissertation is part of the MeSH Termbase Project. The study sets out to provide adequate Dutch translations for English medical terms in the MeSH thesaurus under the category of *Virus Diseases* (C02). The specific terms that I discuss can be found in chapter 2 of this thesis: discussion per concept.

The first step of the research was to discover the concept or meaning of each one of the twelve terms. A particularly helpful tool for this was the 'Scope Note', a definition of the term provided by **Medical 2016** itself. In addition, to avoid ambiguity of certain terms, it was important to determine the place of each of the terms in the hierarchical structure, taking into account the super ordinate and subordinate terms, and the terms on the same level. I also considered the other entry terms that are mentioned by **Medical 2016**, as these terms might be synonyms of the reference term.

Secondly, I attempted to find a clear and thorough definition of the English concept. For this purpose, multiple (online) medical dictionaries and reference works were consulted, such as International, Dorland's, Oxford Medical, Churchill's, Mosby's, Modern Medicine, Stedman's, Medical Online, Diseases Database, Medilexicon and Webster's. These

definitions were compared to one another and discussed. These medical works or dictionaries sometimes provide synonyms as well.

Subsequently, the frequencies of the alternative terms or synonyms of the reference term in **Medical 16** were examined via **Google**, **Google Scholar** and **Google Books**. This method enabled me to disregard alternative terms that are not (frequently) used or that do not appear in primary sources. The accurate and/or frequent terms were recorded on the Translation Sheet and the Language-Definition-Context Sheet.

In order to find adequate Dutch translations of the English concepts, the first step was to look up the terms in medical bilingual dictionaries such as **Reuter**, **Kerkhof**, **Mostert** and **Pinkhof-3**, and/or introduce the term into online translation engines such as **Interglot** and **Google Translate**. The meaning of the Dutch translations that I found were looked up in Dutch medical dictionaries such as **Pinkhof-1**, **Pinkhof-2** and **Merck Manual**. The frequencies of the terms were then examined via **Google Scholar** and **Google Books**, similarly to the English terms mentioned above, as well as in a Dutch online medical journal, namely **Nederlands Tijdschrift voor Geneeskunde** (**NTVG**), in order to decide if the terms should be included on the Translation Sheet and on the Language-Definition-Context Sheet.

2. DISCUSSION PER CONCEPT

2.1. HIV enteropathy

C02.782.815.616.400.480	HIV ENTEROPATHY	AIDS-ENTEROPATHIE

In Medical 2016 2016-02-03 HIV enteropathy is defined as follows:

A syndrome characterized by chronic, well-established diarrhea (greater than one month in duration) without an identified infectious cause after thorough evaluation, in an HIV-positive individual. It is thought to be due to direct or indirect effects of HIV on the enteric mucosa. HIV enteropathy is a diagnosis of exclusion and can be made only after other forms of diarrheal illness have been ruled out.

In addition, **Medical 2016** offers several other entry terms: *HIV-associated enteropathy*, *AIDS enteropathy*, *AIDS-associated enteropathy*, and *idiopathic AIDS enteropathy*.

First, it is important to understand the concept of *enteropathy* itself. In **International 955** *enteropathy* is defined as "a disease of the intestines". Likewise, **Medilexicon 2016-02-03** defines *enteropathy* as an "intestinal disease" and **Webster's 2016-02-03** defines the concept

as "a disease of the internal tract". In other words, *enteropathy* appears to describe an intestinal disease as a consequence or side effect of another illness such as *AIDS*.

With regard to *HIV enteropathy* and the other entry terms provided by **Medical 2016**, **Medical Online 2016-02-02** offers the exact same definition as **Medical 2016** mentioned above. However, none of the terms mentioned above were found in a number of medical reference works such as **International**, **Dorland's**, **Oxford Medical**, **Churchill's**, **Mosby's**, **Modern Medicine** or **Stedman's**. This may indicate that the concept of *HIV enteropathy* is relatively recent, since it only seems to appear on the internet.

The main differences between the terms mentioned by **Medical 2016** is the use of *HIV* or *AIDS*, as well as *associated* and *idiopathic*. Therefore, it was important to examine the frequency of the terms with *HIV* compared to those with *AIDS* and verify if a difference in use between *HIV* and *AIDS* could be found. Secondly, the meaning of *idiopathic* was examined as well as the frequency of the terms with and without *associated*.

According to **Healthline 2016-02-03** and **AIDS Foundation 2016-02-03**, HIV and AIDS are different diagnoses but are both used to describe a particular disease. The term *HIV* or *Human Immunodeficiency Virus* refers to the virus that can cause *AIDS* or *Acquired Immunodeficiency Syndrome*. However, it is possible to be HIV-positive without suffering from AIDS, but eventually HIV-positive individuals will develop AIDS, even after several years. In other words, even though the terms refer to different diagnoses, they are often interchanged to describe the illness and other related pathologies, but, in a medical context, *AIDS* seems to describe a narrower concept than *HIV*.

Secondly, **International 1398** defines *idiopathic* as "having no known cause: said of a disease or other pathologic condition." Similarly, **Medilexicon 2016-02-08** defines *idiopathic* as "denoting a disease of unknown cause" and **Webster's 2016-02-08** as "arising spontaneously or from an obscure or unknown cause". This notion of 'an unknown cause' is also explicitly mentioned in the definitions of *HIV enteropathy* by **Medical 2016** and **Medical Online 2016-02-02**.

Finally, since the terms *HIV* and *AIDS* appear to be used interchangeably and the addition of *idiopathic* does not entail any change in meaning of the concept, it was important to compare the frequencies of the different terms that were found in **Medical 2016** mentioned above.

	Google	Google Scholar	Google Books
HIV enteropathy	16,400	959	980
HIV-associated	1,700	243	133
enteropathy			
AIDS enteropathy	5,020	839	1,190
AIDS-associated	320	44	70
enteropathy			
Idiopathic AIDS	639	99	96
enteropathy			

Table 1 shows the frequency of these terms in three different search engines: Google 2016-02-03, Google Scholar 2016-02-03 and Google Books 2016-02-03.

Table 1: frequency of HIV enteropathy and potential synonyms

The results of table 1 show that *HIV enteropathy* is the most frequent term on **Google** and **Google Scholar**. The alternative term *AIDS enteropathy*, on the other hand, appears the most frequently on **Google Books**. Therefore, both terms will be included as true synonyms. The term *idiopathic AIDS enteropathy* occurs frequently enough to include it as a true synonym as well. Other frequent terms are *HIV-associated enteropathy* and *AIDS-associated enteropathy*, they will be included as morphological variants.

With regard to the translation of the concept of *HIV enteropathy* into Dutch, bilingual medical dictionaries such as **Reuter**, **Mostert** and **Kerkhof** were consulted, but none of those dictionaries offered a translation. The term *enteropathy* on its own did appear in each of those reference works: **Reuter 234** provided the translation *enteropathie*, **Mostert 75** translated the concept as both *enteropathie* and *ingewandsziekte* and **Kerkhof 75** offered the translation *elk type darmziekte*. Online translation engines such as **Interglot** and **Google Translate**, however, did not provide any translations.

Dutch medical reference works such as **Pinkhof-1 2016-02-09**, **Pinkhof-2** and **Merck Manual** did not provide any definition of the literal translation *hiv-enteropathie*, but **Pinkhof-1 419** defines the Dutch term *enteropathie* as *ingewandsziekte*. **Snijders, F. 2532** mentions the term *AIDS-enteropathie*, but according to **Woordenlijst 2016-02-09** the abbreviation for Acquired Immunodeficiency Syndrome is spelled *aids* without capital letters. Indeed, **Stehouwer, C. D. A. 688** uses the term *aids-enteropathie*.

The UMLS 2016-02-09 provides the following terms: *HIV- geassocieerde enteropathie, aids-enteropathy, aids-geassocieerde enteropathie, HIV-enteropathie* and *hiv-enteropathie.* According to Woordenlijst 2016-02-09, however, *HIV* in Dutch is written *hiv* without capital letters. The frequencies of the potential Dutch translations mentioned above were examined in Google 2016-02-15, Google Scholar 2016-02-15, Google Books 2016-02-15 and NTVG 2016-02-15. The results are shown in table 2. A number of neologisms derived from the results found in Kerkhof, Mostert and Reuter such as *hiv-geassocieerde darmziekte* and *aids-geassocieerde darmziekte* did not yield any results.

	Google	Google Scholar	Google Books	NTVG
aids-enteropathie	7	1	1	1
aids-geassocieerde enteropathie	1	0	0	0
hiv-enteropathie	13	0	0	0
hiv-geassocieerde enteropathie	2	0	0	0

Table 2: frequencies of potential Dutch translations

Table 2 shows that the concept of *HIV enteropathy* is not clearly acknowledged in Dutch medicine yet. However, the term *aids-enteropathie* does occur in Dutch primary sources and will be included as an adequate Dutch translation. The term *hiv-enteropathie* will be included as an extra synonym since it occurs in **Google 2016-02-15** but not in primary sources.

2.2. HIV infection

C02.782.815.616.400	HIV INFECTION	HIV-INFECTIE

According to Medical 2016 2016-02-09, the concept of *HIV infections* "includes the spectrum of human immunodeficiency virus infections that range from asymptomatic seropositivity, thru AIDS-related complex (ARC), to acquired immunodeficiency syndrome (AIDS)." This definition is also proposed by Medical Online (2016-02-09). In this sense, *HIV infections* appears to be a hypernym for infections caused by HIV, such as *HIV enteropathy* and *HIV wasting syndrome*.

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Furthermore **Medical 2016** provides three other entry terms: *HTLV-III infections*, *HTLV-III-LAV infections* and *Human T-Lymphotropic Virus Type III infections*. I will examine if these three terms can be considered as true synonyms of *HIV infections*.

First, Medical Online (2016-02-09) provides the same definition of *HIV infections* as Medical 2016 for the alternative entry terms *HTLV-III infections*, *HTLV-III-LAV infections* and *Human T-Lymphotropic Virus Type III infections*.

Dorland's 1969 defines *HIV* or *Human Immunodeficiency Virus* as "a virus of the genus Lentivirus, separable into two serotypes (HIV-1 and HIV-2), that is the etiologic agent of acquired immunodeficiency syndrome (AIDS)." The difference between HIV-1 and HIV-2 is that the former is spread worldwide, while HIV-2 is largely confined to West-Africa (**Dorland's 1969, Stedman's 1967**).

According to International 1342 and Stedman's 835, the abbreviation *HTLV-III* stands for *human T-cell lymphotropic virus type III*. Dorland's 1969 also mentions the term *LAV*, which stands for *lymphadenopathy-associated virus*. However, Dorland's 1969 and Stedman's 1967 also state that *HTLV-III* and *LAV* are former names for *HIV-1*, which implies that the terms are indeed true synonyms, but that the term *HIV* is currently the correct term. Therefore, all the alternative terms mentioned will be included in the field for extra synonyms and will not be given separate Language-Context-Definition Sheets. To check the validity of this decision, the frequencies of all the terms were examined in Google 2016-02-29, Google Scholar 2016-02-29 and Google Books 2016-02-29. The results are shown in table 3.

	Google	Google Scholar	Google Books
HIV infection(s)	10,880,000	1,079,000	488,000
HTLV-III	16,620	5,430	8,953
infection(s)			
HTLV-III-LAV	11,051	4,118	6,029
infection(s)			
Human T-	6,250	598	1,484
Lymphotropic Virus			
Type III infection(s)			
1	1	1	

Table 3: frequencies of HIV infections and potential synonyms

The results in table 3 show that the term *HIV infection* appears much more frequently than the proposed alternative terms. This reinforces the decision of including *HTLV-III infection*, *HTLV-III-LAV infection* and *Human T-Lymphotropic Virus Type III infection* in the field of Extra Synonyms only.

In order to suggest an adequate Dutch translation, *HIV infections* and the alternative terms mentioned above were looked up in **Kerkhof**, **Mostert** and **Pinkhof-3**. None of these bilingual medical dictionaries offered a Dutch translation. **Kerkhof 100** only translated *HTLV-III* as '*AIDS-virus*' and **Mostert 100** provided the Dutch translation of human T-lymphotropic virus, namely *humaan T-cel-lymfotroop virus*. The translation engine **Google Translate 2016-02-17** suggested the Dutch translation *HIV-infecties* and in **Google 2016-02-17** I found the term *LAV-HTLV-III infecties* in only nine documents.

The Dutch medical dictionary **Pinkhof-2 1458**, however, mentions the terms *hiv-infectie* and *hivinfectie* and states that *hiv* should be written without capital letters according to the latest Dutch spelling standards that were introduced in 2005. Moreover, in **Pinkhof-2 1458**, it is argued that the Dutch terms *HTLV-III* and *LAV* are outdated synonyms of *HIV-1*. For this reason, only the terms *hiv-infectie* and *hivinfectie* might be considered as adequate translations. As a means of verification, their frequencies were examined in **Google 2016-02-29**, **Google Books 2016-02-29**, **Google Scholar 2016-02-29** and **NTVG 2016-02-29**. The results are shown in table 4.

	Google	Google Scholar	Google Books	NTVG
hiv-infectie(s)	77,500	1,320	1,585	439
hivinfectie(s)	2,409	28	108	1,154

Table 4: frequencies of potential Dutch translations for HIV infections

The results presented in table 4 indicate that the term hiv-infectie(s) is not only a commonly used term in Dutch, but that it is also used more frequently than the alternative hivinfectie(s) in all the search engines with the exception of **NTVG**. However, after a more thorough examination of these results, I found that the figures for the spelling variant hivinfectie(s) seem incorrect, since the majority of these 1,154 documents only contain the correct spelling variant, namely hiv-infectie(s). The reason why the search engine does not provide the correct number of documents, is not clear.

The version with the hyphen is also prescribed by rule 6.H of **Woordenlijst 2016-02-23**, according to which compounds starting with an abbreviation must be hyphenated. For this reason, the version without a hyphen will only be included as an orthographic variant. The term hiv-infectie(s) is the preferred Dutch translation.

2.3. HIV seropositivity

C02.782.815.616.400.500	HIV SEROPOSITIVITY	HIV-SEROPOSITIVITEIT

Medical 2016 2016-02-22 defines *HIV seropositivity* as follows: "development of neutralizing antibodies in individuals who have been exposed to the human immunodeficiency virus (HIV/HTLV-III/LAV)."

The medical dictionaries consulted, however, do not mention *HIV seropositivity*. Instead, **International 2581**, for example, describes the concept of *seropositivity* as "the state of being seropositive", the latter meaning "possessing antibodies or other immunologic markers for the particular organism under consideration as a result of a previous or ongoing immunizing exposure to the organism, either from clinical illness, subclinical infection, or deliberate immunization."

Similarly, **Stedman's 1623** defines *seropositivity* as "containing antibody of a specific type in serum; used to indicate presence of immunological evidence of a specific infection (e.g. Lyme disease, syphilis) or presence of a diagnostically useful antibody (e.g. rheumatoid arthritis with rheumatoid factor)."

Medical 2016 2016-02-24, however, also provides other entry terms in addition to *HIV* seropositivity: AIDS seropositivity, AIDS or *HIV* seroconversion, anti-HIV positivity, HIV antibody positivity, HTLV-III seroconversion and HTLV-III seropositivity.

First, the terms *AIDS*, *HIV* and *HTLV-III seroconversion* will be included on the Language-Definition-Context Sheets as related terms and not as true synonyms of *HIV Seropositivity*, as **Modern Medicine 656** states that *seroconversion* is "the change of an immune status from that of non-production of a particular antibody, often directed against an antigen of viral origin e.g. HIV (...), to a state of detectable production". This definition is not entirely similar to the definitions of *seropositivity* by **International 2581** and **Stedman's 1623** mentioned above. In *seroconversion*, the emphasis lies on the change of a patient's status to *seropositivity*.

Furthermore, the term *HTLV-III seropositivity* will be added to the field of Extra Synonyms, as **Dorland's 1969** and **Stedman's 1967** argue that *HTLV-III* and *LAV* are former names for *HIV-1* and that *HIV* is the correct term to describe the Human Immunodeficiency Virus.

Furthermore, according to **StopHIV 2016-02-29**, someone is infected with HIV or *seropositive* when HIV antibodies have been detected by means of an antibody test that came out positive, hence the terms *anti-HIV positivity* and *HIV antibody positivity*. In addition, the term *HIV positivity* was considered as well: **Webster's 2016-03-01**, for example, defines *positive* as "affirming the presence especially of a condition, substance, or organism suspected to be present <a positive test for blood>; also: having a test result indicating the presence especially of a condition, substance, or organism <HIV positive>" and mentions the term *HIV positive* similarly to the definition of *HIV seropositivity* by **International 2581**, **Stedman's 1623** and **StopHIV 2016-02-29** mentioned above.

The frequency of the term *HIV seropositivity* and the alternatives that were not disregarded, namely *AIDS seropositivity, anti-HIV positivity, HIV antibody positivity* and *HIV positivity,* were examined in the search engines **Google 2016-03-01**, **Google Scholar** and **Google Books** in order to decide whether they should all be included on the Translation Sheet and the Language-Definition-Context Sheet. The results are shown in table 5. In order to verify the terms more thoroughly, the adjective of each term was also looked up in the search engines.

	Google	Google Scholar	Google Books
HIV seropositivity/	390,100	71,700	49,900
HIV seropositive			
AIDS seropositivity/	4,790	426	358
AIDS seropositive			
anti-HIV positivity/	143,740	2,671	7,678
anti-HIV positive			
HIV antibody	37,370	6,275	8,880
positivity/			
HIV antibody			
positive			
HIV positivity/	8,872,000	685,740	434,450
HIV positive			

Table 5: frequencies of HIV seropositivity and alternative terms

The results in table 5 show that the terms *HIV seropositivity* (*seropositive*) and *HIV positivity* (*positive*) are the most frequently used terms, followed by *anti-HIV positivity* (*positive*) and *HIV antibody positivity* (*positive*). As a result, all the terms mentioned will be included as true synonyms. The term *AIDS seropositivity* (*seropositive*) will be included in the field of Extra Synonyms due to its notably lower frequency. Moreover, in medical terms, the term HIV is the most correct term in this context as not all HIV-positive individuals have developed AIDS yet (**AIDS Foundation 2016-03-01**). The term *HIV-antibody positivity* was found written both with and without the hyphen.

With regard to introducing an adequate Dutch translation for the concept of *HIV* seropositivity, the bilingual dictionaries consulted such as **Mostert 179** and **Reuter 597** do not provide a translation for *HIV*-seropositivity as such. They do translate seropositive as seropositief. In **Reuter 597**, the term seropositiviteit is mentioned as well.

The Dutch term *seropositief* is explained in **Pinkhof-2 1041** as "het hebben van antistoffen tegen een ziekteverwekker in serum; met de term 'seropositieven' doelt men doorgaans op mensen die antistoffen tegen hiv hebben; voorkeursterm is echter hiv-positieve persoon." The definition of the Dutch term *seropositief* is similar to the definition of the English term *seropositive* mentioned by **International 2581**. In addition, **Pinkhof-2 1041** provides two synonyms for the concept, namely *hiv-positief* and *seropositief*, but the latter cannot be verified by means of search engines since the term can also indicate seropositivity for other pathologies than HIV. Consequently, the noun *seropositiviteit* derived from *seropositief* will only be included as an extra synonym.

In table 6, potential Dutch translations on the basis of the findings in Mostert 179, Reuter 597 and Pinkhof-2 1041 are shown. They were introduced and examined in terms of their frequency in Google 2016-03-01, Google Scholar 2016-03-01, Google Books 2016-03-01 and NTVG 2016-03-01.

	Google	Google Scholar	Google Books	NTVG
hiv-seropositiviteit:	1,722	94	79	2
hiv-seropositief				
seropositiviteit	78	5	3	0
voor hiv				
hiv-positiviteit/	36,192	383	456	3

1	 	
hiv-positief		

 Table 6: potential Dutch translations of HIV seropositivity.

The most frequent terms are *hiv-seropositiviteit* and *hiv-positiviteit*. They will be included as true synonyms, but the first will be selected as the reference term, since it is the most literal translation of *HIV seropositivity*. The third term, *seropositiviteit voor hiv* is rather a paraphrase for the concept and will be added as an extra synonym on the Language-Definition-Context Sheet.

2.4. HIV wasting syndrome

C02.782.815.616.400.520	HIV WASTING	HIV-
	SYNDROME	WASTINGSYNDROOM

Medical 2016 2016-03-01 defines HIV wasting syndrome as follows:

Involuntary weight loss of greater than 10 percent associated with intermittent or constant fever and chronic diarrhea or fatigue for more than 30 days in the absence of a defined cause other than HIV infection. A constant feature is major muscle wasting with scattered myofiber degeneration. A variety of etiologies, which vary among patients, contributes to this syndrome.

Other entry terms mentioned by **Medical 2016** are *AIDS wasting syndrome*, *HIV wasting disease* and *slim disease*.

Modern Medicine 776 defines *wasting syndrome* as "a non-specific clinical complex associated with chronic renal insufficiency, attributed to a combination of poor nutrition, endocrine dysfunction and catabolic stresses, including infection, uremia and dialysis." *Slim disease*, on the other hand, is defined as "the name for AIDS in Uganda, where the clinical disease is characterized by extreme weight loss (hence, slim disease), fever, a pruritic maculopapular rash, malaise, chronic diarrhea, respiratory infections and oral candidiasis." **(Modern Medicine 673)**.

Other medical reference works such as **International 3169**, **Dorland's 543**, **Mosby's 1662** and **Stedman's 1982** only mention the terms *wasting* or *wasting disease*, which is any disease or condition characterized by severe weight loss or emaciation and weakness. In other words, the full term *HIV wasting syndrome* was not found in any of the consulted medical reference works. Moreover, the term *slim disease* seems to denote a particular manifestation of AIDS

inherent to Uganda (Modern Medicine 673), while the definition suggested by Medical 2016 does not specify any particular location where the disease is typically seen.

Coodley, G. 681 provides a similar definition of the term *HIV wasting syndrome* as the one suggested by **Medical 2016**:

The HIV wasting syndrome was named by the Centers for Disease Control (CDC) in 1987 as an AIDS-defining illness. It is involuntary weight loss of more than 10% baseline body weight plus either chronic diarrhea (at least two loose stools per day for more than 30 days) or chronic weakness and documented fever (more than 30 days, intermittent or constant) in the absence of a concurrent illness or condition other than HIV infection (...).

According to **Saghayam, S. 472**, the term *slim disease* was first used as a synonym for HIV in Africa at the beginning of the HIV epidemic because it was associated with "severe wasting", or, in other words, extreme weight loss and weakness. Moreover, this wasting was also seen as a criterion to define AIDS and an "independent predictor of death" (**Saghayam**, **S. 472**).

A clearer difference between the terms *HIV wasting syndrome* and *slim disease* is mentioned by **Nahlen 186**, who states that this condition of involuntary weight loss related to HIV infection is called *HIV wasting syndrome* in the United States and Puerto Rico, whereas in Mexico and Africa, the condition is denoted as *slim disease*. Even though the symptoms and presentation of *slim disease* compared to *HIV wasting* are similar, the factors contributing to the condition may be different (**Nahlen 186**).

The comparison between the two terms (*slim disease* and *HIV wasting*) led to the decision to include *slim disease* as an extra synonym. This decision is based on the term's narrower meaning (inherence to mainly Africa) and its former use as a synonym of *AIDS*.

With regard to the two other terms in Medical 2016, namely *HIV wasting disease* and *HIV wasting syndrome*, the decision was made to include both terms as full synonyms, since no differences have been found between the definitions of the shorter terms *wasting syndrome* (Modern Medicine 776) and *wasting disease* (Dorland's 543). In fact, in Gledhill, K. M. 363, for example, the terms *HIV wasting disease* and *HIV wasting syndrome* are used interchangeably: the title of section 21.3 of the book is "Exercise benefits men with HIV wasting disease", followed by the following paragraph:

Men who suffer from HIV wasting syndrome can benefit significantly from a combination of exercise and regular, moderate doses of male hormones, according to a new clinical study led by a University of California San Francisco researcher (**Gledhill, K. M. 363**).

Moreover, no differences have been found between the definitions of *AIDS wasting syndrome* and *HIV wasting syndrome*.

Finally, the frequencies of all the terms mentioned above (*HIV wasting syndrome*, *HIV wasting disease*, *slim disease* and *AIDS wasting syndrome*) were examined in **Google 2016-**03-04, **Google Scholar 2016-03-04**, and **Google Books 2016-03-04** as a means of verification. The results are presented in table 7.

	Google	Google Scholar	Google Books
HIV wasting	30,600	2,520	3,650
syndrome			
HIV wasting disease	8,180	50	125
AIDS wasting	36,000	1,640	2,090
syndrome			
slim disease	15,000	1,950	3,840

Table 7: frequencies of HIV wasting syndrome and alternative terms

The results in table 7 show that all the terms seem to occur frequently. However, the term *HIV wasting disease* seems to appear in relatively small numbers compared to the other terms. Still, it will be considered as a full synonym, since no differences were found in terms of meaning compared to the other terms, with the exception of the term *slim disease*.

An adequate Dutch translation of *HIV wasting disease*, *HIV wasting syndrome* or *AIDS wasting syndrome* was not found in any of the consulted medical bilingual dictionaries. The term *slim disease*, on the other hand, was translated in **Kerkhof 208** as "een bepaalde vorm van aids (common in Africa)" (sic), which is a definition rather than a Dutch term, but the dictionary does mention the inherence of the term to mainly Africa. **Pinkhof-3 556** provides the term *wastingsyndroom*, but does not relate the concept to HIV.

The Dutch medical dictionary **Pinkhof-2 360** offers the English loanword *slim disease* and defines it as "menginfectie in de darm bij Afrikaanse aids-patiënten; het ziektebeeld wordt gekenmerkt door diarree, malabsorptie, malnutritie en extreem gewichtsverlies." Once more, the disease is defined as related to Africa. However, **Pinkhof-2 1282** also mentions the terms

aids-wastingsyndroom and *wastingsyndroom*, both defined as "ernstig gewichtsverlies (10% of meer) als gevolg van hiv-infectie; bij een hiv-positieve patiënt met wasting spreekt men van aids."

Another potentially alternative term, namely *hiv-wastingsyndroom*, was not mentioned in any of the dictionaries consulted. The dictionaries did not provide a Dutch term for *slim disease* either. The frequencies of the term *hiv-wastingsyndroom* and the English loanword *slim disease* were verified in Google 2016-03-07, Google Scholar 2016-03-07, Google Books 2016-03-07 and NTVG 2016-03-07, as were the frequencies of the other potential terms mentioned above. The results are presented in table 8.

	Google	Google Scholar	Google Books	NTVG
aids-	221	1	0	0
wastingsyndroom				
hiv-	214	6	3	1
wastingsyndroom				
wastingsyndroom	131	13	6	8
slim disease	169	5	2	0

Table 8: potential Dutch translations of HIV wasting syndrome

The results in table 8 show that the concept of *HIV wasting syndrome* is not clearly acknowledged in Dutch medicine. Nevertheless, the terms *aids-wastingsyndroom* and *hiv-wastingsyndroom* do occur in Dutch and will be considered as accurate terms. *Slim disease*, on the contrary, will be included as an extra synonym because of its slightly different meaning. The term *wastingsyndroom* will also be included as an extra synonym as there are other diseases such as *cerebral salt wastingsyndroom* (**NTVG 2016-03-**07) that may create confusion between other terms that contain the words *wasting* and *syndroom*. Finally, the term *hiv-wastingsyndroom* will be selected as the Dutch reference term, because it is the literal translation of *HIV wasting syndrome* and because it occurs more frequently in Dutch primary sources than its synonym *aids-wastingsyndroom*.

2.5. HIV-associated lipodystrophy syndrome

C02.782.815.616.400.400	HIV-ASSOCIATED	HIV-GEASSOCIEERDE
	LIPODYSTROPHY	LIPODYSTROFIE
	SYNDROME	

Medical 2016 2016-03-07 defines HIV-associated lipodystrophy syndrome as follows:

Defective metabolism leading to fat maldistribution in patients infected with HIV. The etiology appears to be multifactorial and probably involves some combination of infection-induced alterations in metabolism, direct effects of antiretroviral therapy, and patient-related factors.

In addition, Medical 2016 offers two other entry terms: *HIV lipodystrophy syndrome* and *HIV-associated lipodystrophy*.

Firstly, none of the terms listed by **Medical 2016** were found in English medical reference works such as **International**, **Dorland's**, **Mosby's** or **Stedman's**. Only part of the term, namely *lipodystrophy*, appeared in some of these works. **International 1624**, for example, defines *lipodystrophy* as a "condition characterized by abnormal fat metabolism". A more thorough definition of *lipodystrophy* is provided by **Dorland's 1055**: "any disturbance of fat metabolism / a group of conditions due to defective metabolism of fat, resulting in the absence of subcutaneous fat, which may be congenital or acquired and partial or total. Also called lipoatrophy and lipodystrophia."

A definition of *HIV-associated lipodystrophy*, however, was found in several medical articles. **Carr, A. 726**, for example, describes *HIV-associated lipodystrophy* as follows: "Lipodystrophy (sometimes referred to as fat redistribution, including peripheral lipoatrophy, central fat accumulation, or lipomatosis) is common in adults taking protease inhibitors, nucleoside analogue reverse transcriptase inhibitors, or both, for HIV-1 infection."

The two other terms mentioned by Medical 2016, namely *HIV lipodystrophy syndrome* and *HIV-associated lipodystrophy*, appear to be morphological variants. All three terms were entered in **Google 2016-03-09**, **Google Scholar 2016-03-09** and **Google Books 2016-03-09** in order to examine their frequencies. The examination also revealed a fourth variant of the concept: *HIV lipodystrophy*. The results are presented in table 9.

	Google	Google Scholar	Google Books
HIV-associated	12,900	1,220	501
lipodystrophy			
syndrome			
HIV lipodystrophy	7,680	960	441

syndrome			
HIV-associated	31,000	3,250	1,100
lipodystrophy			
HIV lipodystrophy	22,200	2,870	1,010

Table 9: frequencies of HIV-associated lipodystrophy syndrome and variants

The results show that all the terms examined appear relatively frequently. Therefore, they will all be included as variants of the reference term in **Medical 2016**, namely *HIV-associated lipodystrophy syndrome*.

Next, the concept of *HIV-associated lipodystrophy syndrome* was looked up in bilingual medical dictionaries. The concept was not found, but in **Reuter 392** and **Mostert 120** *lipodystrophy* is translated as *lipodystrofie*. **Reuter 392** also provides the term *lipodystrophia*. In **Pinkhof-2 390** *lipodystrofie* is defined as follows:

Afwijkende verdeling van onderhuids vetweefsel over het lichaam; bijwerking van antivirale therapie met proteaseremmers en nucleosideanaloga; bijv. vettoename op buik, borst en hoog achter op rug (buffalo hump), vetafname op armen, benen, billen en in gezicht; soms gepaard met hyperlipidemie; mogelijk ook verband met insulineresistentie, osteoporose en lage testosteronspiegel.

The translation engine **Google Translate 2016-03-09** translated *HIV-associated lipodystrophy* as *HIV-geassocieerde lipodystrofie*, which is a literal translation of the English term.

In order to find an adequate Dutch translation of the concept, literal translations such as *hiv-lipodystrofie*, *hiv-geassocieerde lipodystofie*, *hiv-lipodystrofiesyndroom* and *hiv-geassocieerd lipodystrofiesyndroom* were examined in Google 2016-03-09, Google Scholar 2016-03-09, Google Books 2016-03-09 and NTVG 2016-03-09. The frequencies of these terms are presented in table 10.

	Google	Google Scholar	Google Books	NTVG
hiv-lipodystrofie	78	1	0	0
hiv-geassocieerde	34	1	0	0
lipodystrofie				
hiv-	4	1	0	0
lipodystrofiesyndroom				

hiv-geassocieerd	1	0	0	0
lipodystrofiesyndroom				

Table 10: potential Dutch translations of *HIV-associated lipodystrophy*

The results show that none of the Dutch terms frequently appear in medical academic articles or books. Paraphrases of the concept, however, such as *lipodystrofie bij hiv-therapie* and *lipodystrofie bij hiv-infecties* seem to yield more results in Dutch academic works.

However, since *hiv-geassocieerde lipodystrofie* was the only term to be found spelled correctly (according to the Dutch spelling standards) in a primary source, it will be included as the Dutch reference term. Paraphrases found in other medical articles will be included in the field of Extra Synonyms. Finally, the other terms presented in table 10 will be included as morphological variants, with the exception of *hiv-geassocieerd lipodystrofiesyndroom* which only yielded one result in all the search engines.

2.6. HTLV-I infection

C02.782.815.200.470	HTLV-I INFECTION	HTLV-1-INFECTIE

Medical 2016 does not provide a short definition or 'Scope Note' for *HTLV-I infections*, nor does it mention any other entry terms.

Stedman's 1967 defines HTLV or human T-cell lymphotropic virus as follows:

A group of viruses (genus BLTV-HTLV retroviruses, family *Retroviridae*) that are lymphotropic with a selective affinity for the helper/inducer cell subset of T lymphocytes and that are associated with adult T-cell leukemia and tropical spastic paraparesis.

Dictionary.com 2016-03-11 provides the following definition of *HTLV-I*: "human T-cell lymphotropic virus type 1: a type of retrovirus that causes a rare form of leukemia, primarily occurring in southern Japan and the Caribbean islands."

Stedman's 835 also states that *HTLV-I* is an abbreviation for *T-cell lymphotrophic virus type* 1 or *human lymphotropic virus, type* 1. In addition, **Dorland's 866** states that *HTLV-I* is an abbreviation for *human T-lymphotropic virus* 1.

On the basis of the findings in these medical reference works, the terms HTLV-I infection, Tcell lymphotropic virus type 1 infection, human lymphotropic virus type 1 infection and *human T-lymphotropic virus 1 infection* were entered in **Google 2016-03-11**, **Google Scholar 2016-03-11** and **Google Books 2016-03-11** in order to verify their frequencies. The terms can also be found spelled with 1 instead of I or vice versa. The results are shown in table 11.

	Google	Google Scholar	Google Books
HTLV-I	123,400	14,710	15,010
infection/HTLV-1			
infection			
T-cell lymphotropic	43,100	1,417	3,050
virus type 1/I			
infection			
human lymphotropic	3,860	284	160
virus type 1/I			
infection			
human T-	16,080	451	11
lymphotropic virus			
1/I infection			

Table 11: frequencies of HTLV-I infection and variants

The results in table 11 show that all the terms appear relatively frequently in these search engines. The term *HTLV-I infection* will be included as the reference term since it is the only term mentioned by **Medical 2016**. Moreover, this term yielded the most results in the search engines. The other terms will be included as morphological variants because *HTLV-I* is considered as the abbreviation of these terms.

An adequate Dutch translation of the concept of *HTLV-I infection* was not found in any of the consulted bilingual medical dictionaries. However, **Reuter 660** does translate *T-cell* as *T-cel* or *T-lymfocyt* and **Mostert 100** provides the Dutch translation of *human T-lymphotropic virus*, namely *humaan T-cel-lymfotroop virus*.

The Dutch medical dictionary **Pinkhof-2 614** mentions the term *HTVL-1*, which stands for *humaan-T-celleukemievirus type 1*. This term is defined as "een RNA-retrovirus" (**Pinkhof-2 1459**). **Merck Manual 770** also provides the terms *HTLV-1* and *humaan T-celleukemievirus type 1*. Here, both terms are defined as "een retrovirus dat wat de werking betreft op het hivvirus lijkt" (**Merck Manual 770**). Moreover, **Merck Manual 323** offers a phrase that seems to be a Dutch paraphrase of the English terms, namely "infectie met het humaan-T-

celleukemievirus". However, in this phrase the virus is not specified as a type 1 virus. Finally, the translation engine **Google Translate 2016-03-11** translates *HTLV-I infection* literally as *HTLV-I infectie*, but this term is not spelled correctly according to the latest Dutch spelling standards.

On the basis of the findings in the bilingual dictionaries and the Dutch medical reference works, the terms *HTLV-I-infectie* (spelled correctly), *humaan-T-celleukemievirus type 1-infectie* and *humaan T-cel-lymfotroop virus type 1-infectie* were examined in **Google 2016-03-11**, **Google Scholar 2016-03-11**, **Google Books 2016-03-11** and **NTVG 2016-03-11**. The term *humaan-T-celleukemievirus type 1-infectie* can also be found without a hyphen between humaan and T-celleukemievirus. This is based on the findings in **Merck Manual 770**. The results of the examination can be found in table 12.

	Google	Google Scholar	Google Books	NTVG
HTLV-I-	357	12	0	1
infectie/ HTLV-				
1-infectie				
humaan-T-	1	0	0	0
celleukemievirus				
type 1-infectie				
humaan T-cel-	3	0	0	0
lymfotroop virus				
type 1-infectie				

Table 12: frequencies of the potential Dutch translations of HTLV-I infection

The results show that the term *HTLV-1-infectie* can be found in **Google** and in Dutch primary sources. The other two terms, however, appear very rarely.

Yet, the terms *humaan-T-celleukemievirus type 1* and *humaan T-cel-lymfotroop virus type 1* do appear in Dutch medical articles. For example, *humaan T-cel-lymfotroop virus type 1* appears once in **NTVG 201603-11** and yielded 148 results in **Google 2016-03-11** and 4 results in **Google Scholar 2016-03-11**. *Humaan-T-celleukemievirus type 1* yielded 7 results in **Google 2016-03-11** and 1 in **Google Scholar 2016-03-11**. The combination with the term *infectie*, on the other hand, is rarely used.

Consequently, the term *HTLV-1-infectie* will be included as the reference term, while the other two terms will be disregarded due to their lack of appearance in primary sources. For the heading, the term *HTLV-1-infectie* will be chosen over its variant *HTLV-1-infectie* since the former is more common in Dutch sources.

The fact that Dutch sources that mention the concept of *HTLV-1-infectie* are very scarce, may be due to the evolution in the classification of the different HTLV types. This statement is supported by the definition of *HTLV* provided by **Medline Plus 2016-04-22**:

Any of several retroviruses that formerly included the original strain of the AIDS virus before it was grouped with other strains, renamed HIV-1, and made the type species (Human immunodeficiency virus 1) of the genus Lentivirus—often used with a number or Roman numeral to indicate the type and order of discovery <HTLV-III; called also human T-cell leukemia virus, human T-cell lymphotropic virus, human T-lymphotropic virus.

2.7. HTLV-II infection

		-
C02.782.815.200.480	HTLV-II INFECTION	HTLV-2-INFECTIE

Medical 2016 2016-03-14 does not provide a short definition or 'Scope Note' for the concept of *HTLV-II infection*. No other entry terms are provided either.

Stedman's 1967 defines *HTLV* or *human T-cell lymphotropic virus* as follows:

A group of viruses (genus BLTV-HTLV retroviruses, family *Retroviridae*) that are lymphotropic with a selective affinity for the helper/inducer cell subset of T lymphocytes and that are associated with adult T-cell leukemia and tropical spastic paraparesis.

Moreover, **Stedman's 835** states that *HTLV-II* is an abbreviation for *T-cell lymphotrophic* virus type 2 or human lymphotropic virus, type 2. **Dorland's 866** states that *HTLV-II* is an abbreviation for human *T-lymphotropic virus* 2.

Roucoux, D. 144, however, offers a more thorough definition of the concept of HTLV-II:

Human T-lymphotropic virus type II (HTLV-II) is a human retrovirus which is endemic in Amerindian and pygmy tribes. (...). HTLV-II has been linked with a spastic paraparesis called HTLV-associated myelopathy / tropical spastic paraparesis (HAM/TSP), and perhaps with other neurological syndromes. It is also associated with an increased incidence of pneumonia and bronchitis, inflammatory conditions such as arthritis, and perhaps with increased mortality. On the basis of the findings in these medical reference works, the following terms were composed and entered in **Google 2016-03-14**, **Google Scholar 2016-03-14** and **Google Books 2016-03-14** in order to verify their frequencies: *HTLV-II infection*, *T-cell lymphotropic virus type 2 infection*, *human lymphotropic virus type 2 infection*, *human T-lymphotropic virus type II infection*. The terms can also be found written with a 2 instead of II or vice versa. The results can be found in table 13.

	Google	Google Scholar	Google Books
HTLV-II/2 infection	19,290	2,440	2,503
T-cell lymphotropic	3,829	301	581
virus type 2/II			
infection			
human lymphotropic	0	0	0
virus type 2/II			
infection			
human T-	4	2	0
lymphotropic virus			
II/2 infection			
human T-	10,050	199	2
lymphotropic virus			
type II/2 infection			

Table 13: frequencies of HTLV-II infections and alternative terms

The results in table 13 show that *HTLV-II/2 infection*, *T-cell lymphotropic virus type 2/II infection* and *human T-lymphotropic virus type II/2 infection* are the most commonly used terms to denominate the concept of *HTLV-II infection*. The two other terms, *human lymphotropic virus type 2/II infection* and *human T-lymphotropic virus II/2 infection*, yielded no or very few results compared to the other terms and will be disregarded.

The term *HTLV-II infection* will be included as the reference term, since it is the only term mentioned by **Medical 2016**. Moreover, this term yielded the most results in the search engines. Its morphological variant, namely *HTLV-2 infection*, will be included as well. The terms *T-cell lymphotropic virus type 2/II infection* and *human T-lymphotropic virus type II/2 infection* will be included as morphological variants on the Language-Definition-Context

Sheet as well, since they are considered to be the full version of the abbreviated reference term.

An adequate Dutch translation of the concept of *HTLV-II infection* was not found in any of the consulted bilingual medical dictionaries. However, **Reuter 660** does translate *T-cell* as *T-cel* or *T-lymfocyt* and **Mostert 100** provides the Dutch translation of *human T-lymphotropic virus*, namely *humaan T-cel-lymfotroop virus*.

The concept of *HTLV-II infection* was not found in any of the consulted Dutch medical reference works either. However, The Dutch medical dictionary **Pinkhof-2 614** mentions the term *HTVL-1*, which stands for *humaan-T-celleukemievirus type 1* and **Merck Manual 770** also provides the terms *HTLV-1* and *humaan T-celleukemievirus type 1*. Finally, **Google Translate 2016-03-14** translates the term *HTLV-II infection* as *HTLV-II-infectie*, but this translation should be interpreted with caution, since this translation engine may have just juxtaposed the translations of the separate words.

On the basis of the findings in the bilingual medical dictionaries, the Dutch medical reference works and the suggestion of **Google Translate 2016-03-14**, the following Dutch terms were composed: *HTLV-II-infectie*, *humaan T-celleukemievirus type 2-infectie* and *humaan T-cellymfotroop virus type 2-infectie*. The number 2 can also be replaced by II and vice versa. The frequencies of these terms were examined in **Google 2016-03-14**, **Google Scholar 2016-03-14** and **NTVG 2016-03-14** as a means of verification. The results of this examination are shown in table 14.

	Google	Google Scholar	Google Books	NTVG
HTLV-II/2-	10	1	0	2
infectie				
humaan T-	0	0	0	0
celleukemievirus				
type 2/II-infectie				
humaan T-cel-	0	0	0	0
lymfotroop virus				
type 2/II-infectie				

Table 14: Potential Dutch translations of HTLV-II infection

The results show that the concept of *HTLV-II infection* does not appear to be acknowledged in Dutch medicine yet. The only term to be found in primary sources is *HTLV-II-infectie*. Because of the disappointing results, similar but simpler terms were entered into the search engines, namely *T-celleukemievirus type 2/II-infectie* and *T-cel-lymfotroop virus type 2/II-infectie*, which again did not yield any results. Consequently, these terms will be disregarded. The term *HTLV-II/2-infectie* will be included as the reference term as it is the only term to be found in primary sources. For the heading, the term *HTLV-2-infectie* will be selected since it is more common in the Dutch sources than its variant *HTLV-II-infectie*.

The fact that Dutch sources that mention the concept of *HTLV-2-infectie* or any of its alternative terms are very scarce, may be due to the evolution in the classification of the different HTLV types. This statement is supported by the definition of *HTLV* provided by **Medline Plus 2016-04-22**:

Any of several retroviruses that formerly included the original strain of the AIDS virus before it was grouped with other strains, renamed HIV-1, and made the type species (Human immunodeficiency virus 1) of the genus Lentivirus—often used with a number or Roman numeral to indicate the type and order of discovery <HTLV-III; called also human T-cell leukemia virus, human T-cell lymphotropic virus, human T-lymphotropic virus.

2.8. <u>Human * adenovirus infection</u>

C02.256.076.045	HUMAN * ADENOVIRUS	HUMAAN
	INFECTION	ADENOVIRUSINFECTIE

Medical 2016 2016-03-15 defines *human adenovirus infections* as "respiratory and conjunctival infections caused by 33 identified serotypes of human adenoviruses." In addition, a second entry term is provided, namely *pharyngo-conjunctival fever*.

International 46 describes *adenovirus* as "any of a group of DNA viruses belonging to either of the two genera of the Adenoviridae family, Mastadenovirus and Aviadenovirus. There are human, simian, bovine, porcine, canine, murine, ovine, equine and avian adenoviruses." **Stedman's 26** defines *adenovirus* as follows:

Adenoidal-pharyngeal-conjunctival or A-P-C virus; any virus of the family Adenoviridae. More than 40 types are known to infect humans causing upper respiratory problems, acute respiratory disease, conjunctivitis, gastroenteritis, hemorrhagic cystitis, and serious infections in neonates.
Moreover, **Stedman's 661** also mentions the term *pharyngoconjunctival fever*, which is "a disease usually occurring in epidemic form characterized by fever, pharyngitis, and conjunctivitis, and caused by several types of adenoviruses."

In **Dorland's 1103** a description is given of *mastadenovirus*:

Mammalian adenoviruses; a genus of viruses of the family Adenoviridae that infect mammals, causing disease of the respiratory tract, gastrointestinal tract, conjunctiva, central nervous system and urinary tract; infection may be asymptomatic. Many species induce malignancy. Human viruses are grouped into six species (A-F), including two subspecies of B (B1 and B2), on the basis of structural, immunological, biological and chemical characteristics and comprise over 50 serotypes.

Dorland's 687 also provides the term *pharyngoconjunctival fever*, which is defined as "a febrile disease caused by an adenovirus, occurring in epidemic form, largely in school children, and characterized by fever, pharyngitis, rhinitis, conjunctivitis, and enlarged cervical lymph nodes."

The definitions found in the consulted English medical reference works seem to reveal two issues: firstly, *human adenovirus* seems to be a subcategory of *mastadenovirus*, which is one of the two genera of the *Adenoviridae* family. Secondly, the alternative entry term mentioned by **Medical 2016**, namely *pharyngo-conjunctival fever*, appears to denominate a particular disease caused by the human adenovirus. The terms *adenoidal-pharyngeal-conjunctival virus* and *A-P-C virus* mentioned by **Stedman's 26** refer to the virus itself. However, a recent medical article argues that *adenoidal-pharyngeal-conjunctival virus* is a former term for *adenovirus* (Larson, C. 19977).

On the basis of these findings, the term *pharyngo-conjunctival fever* and its alternative spelling *pharyngoconjunctival fever* will be included in the field of related terms and were also examined via **Google 2016-03-15**, **Google Scholar 2016-03-15** and **Google Books 2016-03-15**. The term offered by **Medical 2016**, namely *human adenovirus infection*, and other composed terms based on the findings in the English medical works, such as *adenoidal-pharyngeal-conjunctival virus infection* and *A-P-C virus infection* (both of which will be included in the field of Extra Synonyms), were verified via these search engines as well. Finally, the latter can also be found as *APC virus infection*. The results are presented in table 15.

Google	Google Scholar	Google Books

human adenovirus	18,500	403	9
infection			
adenoidal-	361	408	108
pharyngeal-			
conjunctival virus			
infection			
A-P-C virus infection	703	58	234
pharyngo (-)	21,700	1,480	5,780
conjunctival fever			

Table 15: frequencies of human adenovirus infection and synonyms/related terms

The results in table 15 show that all the terms appear relatively frequently. Therefore, the preferred term will be *human adenovirus infection*, since it is the preferred term in **Medical 2016**. The term *adenoidal-pharyngeal-conjunctival virus infection* and its abbreviation *A-P-C virus infection* will be incorporated as extra synonyms, since those are obsolete terms. Finally, as mentioned before, the term *pharyngoconjunctival fever* will be included as a related term.

The term *human adenovirus infection* was not found in any of the consulted bilingual dictionaries. **Reuter 16** does translate *adenovirus* as *adenovirus* and **Mostert 213** translates *adenopharyngeal conjunctival virus* simply as *adenovirus*. In **Kerkhof 154**, the term *pharyngoconjunctival fever* is defined in Dutch as "virale onsteking van farynx en conjunctiva". Furthermore, **Google Translate 2016-03-15** translates human adenovirus infection literally as *humaan adenovirus infectie*. Finally, **Pinkhof-2 1457** defines *adenovirussen* as follows:

Groep virussen die vnl. in de keelholte leven; van de bij de mens voorkomende adenovirussen zijn meer dan 50 antigene typen bekend; het adenovirus vermeerdert zich uitsluitend in de celkern (intranucleaire insluitsels); aerogene verspreiding; veroorzaakt een licht verlopende infectie met catarrale verschijnselen.

On the basis of the definitions and translations found in the bilingual dictionaries, on **Google Translate** and in the Dutch medical reference work **Pinkhof-2**, the Dutch term *humaan adenovirusinfectie* was composed. The frequency of this term was examined via **Google 2016-03-15**, **Google Scholar 2016-03-15**, **Google Books 2016-03-15** and **NTVG 2016-03-15** as a means of verification, but the term did not yield any results. As a consequence, the simpler Dutch terms *adenovirusinfectie*, *humaan adenovirus* and *humane adenovirus* were examined via the same search engines. The results can be found in table 16.

	Google	Google	Google Books	NTVG
		Scholar		
adenovirusinfectie(s)	1,600	22	75	20
humaan adenovirus	186	11	1	2
humane adenovirus	106	3	1	2

Table 16: frequency of Dutch translation for human adenovirus infection

The results show that the Dutch terms *adenovirusinfectie*, *humaan adenovirus* and *humane adenovirus* can be found in Dutch primary sources. On the basis of these results, the neologism *humaan adenovirusinfectie* (and its spelling variant *humane adenovirusinfectie*) will be included as the reference term. The term *adenovirusinfectie* will be included as a full synonym since '*humaan of humane*' is usually left out in contexts where it is clear that the term indicates the human variant of the virus.

2.9. Human * influenza

	-	-
C02.782.620.365	HUMAN * INFLUENZA	HUMANE INFLUENZA

Medical 2016 2016-03-16 defines the concept of *human influenza* as "an acute viral infection in humans involving the respiratory tract. It is marked by inflammation of the nasal mucosa; the pharynx; and conjunctiva, and by headache and severe, often generalized, myalgia." Other entry terms provided by **Medical 2016** are *grippe*, *human flu*, *influenza* and *influenza in humans*.

International 1436, however, provides a more thorough and elaborate definition of *influenza*:

An acute respiratory disease of viral origin which is distributed worldwide and often occurs in widespread epidemics. It is characterized by fever, headache, myalgia, and prostration and occurs with rapid onset. Complications such as bronchitis and bacterial pneumonia are common. Two serologically distinct viruses cause the disease, influenza virus A and influenza virus B. These viruses, particularly A, periodically undergo changes in antigenic composition and as a result, world populations become newly susceptible to the disease. New serologic types and the illnesses they cause are designated according to where they are first identified, for example, Hong Kong influenza, Asian influenza and Russian influenza. Also called flu (popular), epidemic catarrhal fever (outmoded), epidemic rheuma (outmoded), grippe (older term), grip (older term), la grippe (French).

Stedman's 898 offers a similar definition of the concept and adds the following synonyms: *flu*, *grippe* and *grip*.

On the basis of the findings in Medical 2016, International 1436 and Stedman's 898, the following English terms to denominate the concept of *human influenza* were selected: *human influenza*, *influenza*, *influenza* in *humans*, *human flu*, *flu*, *grippe* and *grip*. These terms were examined in Google 2016-03-16, Google Scholar 2016-03-16 and Google Books 2016-03-16 as a means of verification. The other terms mentioned by International 1436, namely *epidemic catarrhal fever* and *epidemic rheuma*, were disregarded since they are considered to be outmoded terms (International 1436). The French term *la grippe* was disregarded as well. The results of the examination in the search engines are shown in table 17.

	Google	Google Scholar	Google Books
human influenza	371,000	62,500	28,000
influenza	49,000,000	1,820,000	1,110,000
influenza in humans	132,000	3,140	5,180
human flu	128,000	1,610	2,880
flu	104,000,000	992,000	1,340,000
grippe	402,000	18,900	116,000
grip	75,400	6,620	4,780

Table 17: frequencies of human influenza and alternative terms

The results presented in table 17 show that all the terms are frequently used. The reference term will be *human influenza*, since it is the main descriptor **Medical 2016** and since it is more specific than *influenza*, a term that may also be used to denominate other types of influenza such as equine influenza. Therefore, *influenza* will be added to the field of Extra Synonyms, along with *influenza in humans*, which is a morphological variant of *human influenza* rather than a full synonym.

In addition, the terms *human flu* and *flu* will be added to the list of extra synonyms as well, given the fact that they are rather used in popular contexts (**International 1436**). This is also supported by the fact that *influenza* yielded approximately double the number of results of *flu* in **Google Scholar**. In **Google Books**, however, *flu* appears more often than *influenza*, but this search engine also provides the results found in popular works. The terms *grippe* and *grip*, which are regarded as older terms (**International 1436**), will be added as extra synonyms on the Language-Definition-Context Sheet as well.

Finally, it may be noted that the figures for *human influenza* also include a large number of cases where *human influenza virus* is used in the text. Arguably, this compound may be ambiguous between "virus of human influenza" and "influenza virus that affects humans". In order to present unambiguous examples, the Contexts chosen in the term record are cases without "virus".

The bilingual medical dictionaries **Reuter 343**, **Kerkof 107**, **Pinkhof-3 485** and **Mostert 107** all translate the English term *influenza* as *influenza* and *griep*. The Dutch medical dictionary **Pinkhof-2 662-663** provides the following definition of *influenza*:

Infectie van de luchtwegen die door het influenzavirus wordt veroorzaakt. (...) De meest voorkomende symptomen zijn: koorts, koude rillingen, hoofdpijn, spierpijn en droge hoest en/of retrosternale pijn; behalve de hoest verdwijnen de klachten meestal na 2 tot 7 dagen.

In addition, **Pinkhof-2 662-663** provides the synonym *griep*, but adds that this term is also commonly used in layman's terms for general malaise associated with, for example, severe catarrhal nasal colds. Moreover, it is mentioned that the Dutch term *buikgriep* is not influenza, but a viral gastroenteritis. The Dutch medical dictionary **Merck Manual 906-907** defines *griep* (*influenza*) as "een virusinfectie die koorts, een loopneus, hoesten, hoofdpijn, een ziek gevoel (malaise) en ontsteking van de binnenwand van de neus en de luchtwegen veroorzaakt."

The literal translation "humane influenza" is rarely found but since the Scope Note in **Medical 2016** limits the concept to the human variant, it is only this term which is fully equivalent to the English term. Table 18 gives the results of the various options in **Google 2016-03-16**, **Google Scholar 2016-03-16**, **Google Books 2016-03-16** and **NTVG 2016-03-16**.

	Google	Google Scholar	Google Books	NTVG
humane	5,390	21	7 (2 without	18 (1 without
influenza			"virus")	"virus")
influenza	275,000	2,470	27,700	1,473
griep	3,110,000	3,200	29,100	961

Table 18: frequencies of Dutch translations for the concept of human influenza

The results in table 18 show that all the Dutch terms can be found in Dutch medical primary sources. However, the figures for *humane influenza* need to be taken with caution. Of the 7

hits in **Google Books**, only two use the term on its own, not as a part of a compound such as *humane influenza-A-virussen*. An examination of the 18 hits yielded by **NTVG** shows that the term is not always used in the text, suggesting that the term is retrieved because *humane influenza* is used as an indexing term. This in itself, however, is also proof that the term is regarded as valid.

In conclusion, the term *humane influenza* will be added as the reference term since it is the most unambiguous and equivalent Dutch term for the English concept of *human influenza*. The term *influenza* will be added as an extra synonym, but is should be noted that this term may also be used to denominate influenza in other animals (e.g. influenza A (H5N1), also called avian influenza). Similarly, the term *griep*, which is sometimes used to describe general malaise, will be added as an extra synonym on the Language-Definition-Context Sheet.

2.10. Infectious * ectromelia

C02.256.743.239	INFECTIOUS *	MUIZENPOKKEN
	ECTROMELIA	

Medical 2016 2016-04-16 defines the concept of *infectious ectromelia* as "a viral infection of mice, causing edema and necrosis followed by limb loss". In addition, **Medical 2016** adds the following other entry terms: *mouse pox and mousepox*.

International 899 describes *infectious extromelia* as "a serious disease of laboratory mice, caused by the mousepox virus. In the chronic form, necrosis and sloughing of the extremities may occur. Also called mousepox, mouse variola". Similarly, **Dorland's 588** defines the concept as "a disease of mice caused by a poxvirus and characterized by gangrene and often loss of one or more of the feet and sometimes of other external parts, and by necrotic areas in the liver, spleen and other organs. Also called mousepox."

HarperCollins 142 states that the term *ectromelia* on its own has two different meanings and is also used to denominate the concept of *infectious ectromelia*:

- 1. Congenital absence of one or more limbs;
- 2. A viral disease of mice causing, among other symptoms, gangrene and loss of feet; it causes high mortality in laboratory mouse colonies. Also called mousepox.

The findings in the English medical dictionaries led to the decision of examining the terms *infectious ectromelia, ectromelia, mousepox, mouse pox* and *mouse variola* in **Google 2016-04-16**, **Google Scholar 2016-04-16** and **Google Books 2016-04-16** as a means of verification. The results are shown in table 19.

	Google	Google Scholar	Google Books
infectious ectromelia	3,150	707	1,840
ectromelia	81,700	11,000	22,900
mousepox	31,700	3,310	5,780
mouse pox	5,040	935	2,200
mouse variola	2	3	2

Table 19: frequencies of *infectious ectromelia* and alternatives

The results in table 19 indicate that the terms *infectious ectromelia*, *ectromelia*, *mousepox* and its spelling variant *mouse pox* appear relatively frequently in English primary sources. However, the figures for *ectromelia* should be interpreted with caution: the term frequently appears in combination with "virus" and may also mean "the absence of one or more limbs" (**HarperCollins 142**), which is a more general meaning than *infectious ectromelia* or *mousepox*. Therefore, the term *ectromelia* will be added as an extra synonym on the Language-Definition-Context Sheet.

The term *infectious ectromelia* will be selected as the reference term since that is also the case in **Medical 2016**. The term *mousepox* will be included as a full synonym, its spelling variant will be added to the field Extra Info. Finally, the term *mouse variola* will be included as an extra synonym since it appears notably less frequently in primary sources.

The concept of *infectious ectromelia* did not appear in any of the consulted bilingual medical dictionaries. However, **Reuter 222** does provide two translations for *ectromelia*, namely *ectromelie* and *ectromelia*. The term *variola* is translated as *pokken* or *variola*. **Kerkhof 71**, on the other hand, translates *ectromelia* as "onderontwikkeling van de pijpbeenderen", which does not correspond to the concept of a virus disease in mice. A literal translation of the concept, namely *besmettelijke ectromelie* of *besmettelijke ectromelia*, was derived from the findings in the bilingual dictionaries, but these terms did not yield any results in **Google**, **Google Scholar** or **Google Books** or **NTVG**.

Moreover, in Dutch medical dictionaries the terms *ectromelie* or *ectromelia* rarely appear. In **Coëlho 255** *ectromelie* is defined as "misgeboorte waarbij een of meerdere ledematen ontbreken". This definition does not describe the concept of *infectious ectromelia*, but it does correspond to the English definition of *ectromelia* mentioned by **Dorland's 588**. If the English term *ectromelia* can be used to denominate the absence of limbs, as well as mousepox, then it might be possible that the Dutch term *ectromelie* is also used to describe both "the absence of limbs" and mousepox.

In order to verify this hypothesis, the terms *ectromelia* and *ectromelie* mentioned by **Reuter 222** were extensively researched on the internet. During this research, a number of documents were found in which the terms are indeed used in the context of mousepox:

Hoewel neurovaccinia en konijnepokken in de officiële nomenclatuur niet zijn opgenomen zullen zij hier met variola, vaccinia, cowpox en ectromelia (muizepokken) samen als de variola-vacciniagroep worden aangeduid (**Moeljono, J. 5**).

Bij muizen wordt een spontane pokkeninfectie aangetroffen, gekenmerkt door necrose van pootjes, oren en staart "Ectromelia" genoemd (**Devos, A. 14**).

Dr. F. Dekking van het Laboratorium voor gezondheidszorg was zo vriendelijk om uit te sluiten dat de symptomen van mijn muizen aan ectromelie te wijten waren (**Borst**, **P. 24**).

In addition, a third potential term was found, namely *muizenpokken*, which is a literal translation of *mousepox*. The frequencies of the terms *ectromelia*, *ectromelie* and *muizenpokken* were examined in **Google 2016-04-18**, **Google Scholar 2016-04-18**, **Google Books 2016-04-18** and **NTVG 2016-04-18**. The term *muizepokken*, which is spelled according to obsolete spelling standards, was added to retrieve older documents that also mention the concept of *muizenpokken*. The results are presented in table 20.

	Google	Google	Google	NTVG
		Scholar	Books	
ectromelia	249	4	53	1
ectromelie	233	2	6	1
muizenpokken/muizepokken	74	0	8	0

Table 20: potential Dutch translations of infectious ectromelia

The results in table 20 show that the concept of *infectious ectromelia* appears relatively rarely in Dutch medicine. Moreover, the figures for *ectromelia* and *ectromelie* should be interpreted

with caution since they may also denominate "onderontwikkeling van de pijpbeenderen" (**Kerkhof 71**) or "misgeboorte waarbij een of meerdere ledematen ontbreken" (**Coëlho 255**). Yet, in some contexts the terms were used as synonyms of *muizenpokken*. Since the latter term is the most unambiguous term, it will be selected as the reference term. *Ectromelia* and *ectromelie* will be included in the field of Extra Synonyms.

2.11. Influenza in Birds

C02.782.620.375	INFLUENZA IN BIRDS	AVIAIRE INFLUENZA

Medical 2016 2016-03-18 describes the concept of *influenza in birds* as "infection of domestic and wild fowl and other birds with influenza A virus. Avian influenza usually does not sicken birds, but can be highly pathogenic and fatal in domestic poultry". In addition, Medical 2016 provides the following additional entry terms: *avian flu, avian influenza* and *fowl plague*.

International 1436, however, offers a more thorough and elaborate definition of *avian influenza*:

A worldwide disease of many avian species, caused by one of the type A avian influenza viruses. The disease varies greatly in severity, from mild to one with sudden onset and high mortality. Main signs are respiratory, with dyspnea, oral and nasal mucoid discharge, and edema of the head and neck. In mild forms, decreased egg production and fertility are observed.

Moreover, **International 1436** provides a variety of synonyms: *fowl plague, avian plague, chicken pest* and *fowl pest*. Nevertheless, **International** regards all these terms as obsolete.

Dorland's 930 also offers various synonyms for *avian influenza*, namely *fowl plague*, *Newcastle disease* and *avian pneumoencephalitis*. *Newcastle disease* is defined as follows:

An influenzalike, often fatal, disease of birds, including domestic fowl, caused by a paramyxovirus; seen in several different forms, characterized variously by pneumonia and other respiratory symptoms, and encephalitic symptoms. It is transmissible to humans by contact with infected birds.

Thus, *Newcastle disease* seems to be a different disease than *avian influenza*, since it is an influenzalike disease caused by a paramyxovirus instead of an avian influenza virus. This

statement is also supported by **Alexander, D. J.**, who describes *Newcastle disease* and *avian influenza* as two separate diseases; in fact, **Medical 2016** also lists it separately as C02.782.580.600.080.600. Moreover, **Swayne D. E. 1537** states that *Newcastle disease* is also called *avian pneumoencephalitis* and *pseudofowl plague*. Especially the latter term strengthens the assumption that *Newcastle disease* must not be considered as a full synonym of *avian influenza*. Therefore, the concept of *Newcastle disease* and its synonyms will be added to the field of related terms of *avian influenza*.

On the basis of the findings in **Medical 2016**, the consulted English medical dictionaries and the medical articles mentioned above, the following terms were entered into **Google 2016-03-18**, **Google Scholar 2016-03-18** and **Google Books 2016-03-18** as a means of verification: *influenza in birds, avian influenza* and *avian flu*. The results are presented in table 21.

	Google	Google Scholar	Google Books
influenza in birds	45,500	1,510	1,620
avian influenza	2,650,000	103,000	89,700
avian flu	356,000	31,500	46,900

Table 21: frequencies of the concept of influenza in birds and alternative terms

The results in table 21 demonstrate that all the terms that were examined appear relatively frequently. However, the term *influenza in birds* does yield considerably fewer results, but since it is the preferred term suggested by **Medical 2016**, it will be included as the reference term. The term *avian influenza* will be considered as a full synonym. The term *avian flu*, on the other hand, occurs less often and can be considered as a more popular term since it also appears less frequently in **Google Scholar**. Therefore, this term will be included in the field of Extra Synonyms.

In order to find an adequate Dutch translation for the concept, several bilingual medical dictionaries were consulted. **Pinkhof-3 485** translates *avian influenza* as *vogelgriep, influenza A* (*H5N1*) and *aviaire influenza*. **Mostert 107** provides the terms *vogelpest* and *aviaire influenza*.

The Dutch medical dictionary **Pinkhof-2 662-663** states that the terms *aviaire influenza*, *vogelgriep*, *influenza* A (H5N1) and *hongkonggriep* are full synonyms. However, **Pinkhof-2 1469** also states that the term *vogelpest* should be avoided since it is derived from the Dutch term for the plague while it is not a disease that is related to the plague. Therefore, this term

will be considered as obsolete and added to the field of Extra Synonyms. In addition, **Pinkhof-2 1469** defines *aviaire influenza* as "aan influenza verwante ziekte bij vogels".

However, with regard to the term *influenza A (H5N1)* mentioned by **Pinkhof-2 662-663**, **Mens en gezondheid 2016-03-26** states that H5N1 is a type of avian influenza virus that was responsible for a large outbreak of avian influenza in 2003, and, that more recently, a new type of avian influenza virus has emerged, namely H7N9. Therefore, the term *influenza A H5N1* merely appears to be a type of avian influenza. Hence, this term will be included as an extra synonym.

Similarly, the term *hongkonggriep*, also found in **Pinkhof-2 662-663**, appears to be a subtype of avian influenza as well. For example, **Kroes**, **A 459** states that the term refers to a pandemic outbreak of influenza A (H3N2) in 1968 that started in Hong Kong. Therefore, the term *hongkonggriep* will be added to the field of Extra Synonyms as well.

On the basis of the findings in the bilingual and Dutch medical dictionaries, the terms *aviaire influenza* and *vogelgriep* were entered in **Google 2016-03-21**, **Google Scholar 2016-03-21**, **Google Books 2016-03-21** and **NTVG 2016-03-21** as a means of verification. The results are shown in table 22.

	Google	Google Scholar	Google Books	NTVG
aviaire influenza	32,700	166	885	4
vogelgriep	245,000	389	1,250	54

 Table 22: potential Dutch translations for influenza in birds

The results in table 22 indicate that both terms are frequently used in Dutch primary sources. Hence, the two terms will be included as full synonyms. *Aviaire influenza* will be selected as the reference term since it is the most scientific term.

2.12. Monkeypox

C02.256.743.615	MONKEYPOX	APENPOKKEN

Medical 2016 2016-04-03 defines the concept of *monkeypox* as follows:

A viral disease infecting primates and rodents. Its clinical presentation in humans is similar to smallpox including fever; headache; cough; and a painful rash. It is caused by monkeypox virus and is usually transmitted to humans through bites or via contact with an animal's blood. Interhuman transmission is relatively low (significantly less than smallpox).

In addition, **Medical 2016** provides an orthographic variant as another Entry Term: *monkey pox*.

English medical reference works provide a similar definition to that of **Medical 2016**. For example, **Dorland's 1169** describes *monkeypox* as "a mild, epidemic, exanthematous disease occurring in captive monkeys, which can be transmitted to humans, in whom it causes a disease clinically similar to smallpox." Similarly, **Stedman's 1127** defines the concept as "a disease of monkeys, and, rarely, of humans caused by the monkeypox virus, a member of the family Poxviridae; the human disease is serious and clinically resembles smallpox."

On the basis of the findings in **Medical 2016** and the medical reference works mentioned above, the terms *monkey pox* and *monkeypox* were entered in **Google 2016-04-03**, **Google Scholar 2016-04-03** and **Google Books 2016-04-03** in order to examine their frequencies. The results are presented in table 23.

	Google	Google Scholar	Google Books
monkeypox	177,000	8,380	18,800
monkey pox	41,900	2,060	3,750

Table 23: frequencies of the terms monkeypox and monkey pox

The results in table 23 indicate that both spellings are used frequently in English. However, *monkey pox* yielded relatively fewer results and will be added in the field ExtraInfo as an orthographic variant. The term *monkeypox* will be selected as the reference term.

In order to find an adequate translation of the concept, various bilingual medical dictionaries were consulted. However, only **Mostert 130** offered a translation for *monkey pox*, namely *apenpokken*. The Dutch medical reference work **Pinkhof-2 1457** also provides the term *apenpokken* and adds the English term *monkey pox* between brackets. Moreover, **Pinkhof-1 2016-04-03** defines the term *apenpokken* as "op pokken lijkende ziekte, vnl. in West- en Centraal-Afrika sporadisch door apen en knaagdieren op mensen overgedragen; veroorzaakt door het apenpokkenvirus (orthopoxvirus; Poxviridae); preventie door inenting met het vacciniavirus." In addition, **Pinkhof-1 2016-04-03** also adds the synonym *monkey pox*.

Hence, the frequencies of the terms *apenpokken* and *monkey pox* were examined in **Google 2016-04-03**, **Google Scholar 2016-04-03**, **Google Books 2016-04-03** and **NTVG 2016-04-03** as a means of verification. The results can be found in table 24.

	Google	Google Scholar	Google Books	NTVG
apenpokken	1,560	18	113	2
monkey pox	1,240	16	28	5

Table 24: potential Dutch term and loanword for the concept of monkeypox

The results in table 24 show that the Dutch term as well as the loanword are acknowledged in Dutch medicine. Therefore, both terms will be included as full synonyms, but the Dutch term will be selected as the reference term.

During the verification of the terms in the search engines, other orthographic variants of *monkey pox* were found, namely *monkeypox* and *monkey-pox*. These will be added in the field ExtraInfo. Similarly, for the term *apenpokken* an orthographic variant was found as well: *apepokken*. This variant will be added in the field ExtraInfo as well. However, it should be noted that it is incorrectly spelled according to the latest Dutch spelling standards: when the left part of a compound is a noun that ends in –en and not –es in plural, then the left part should end with –en in the compound (**Taaltelefoon 2016-04-19**). For example, the plural of "aap" in Dutch is "apen" and not "apes". As a result, the compound with "pokken" should be "apenpokken".

3. CONCLUSION

The aim of this dissertation was to attempt to find an adequate Dutch translation or equivalent for each of the twelve concepts that were selected from **Medical 2016** (MeSH). Although I was able to suggest an adequate Dutch equivalent for each of the twelve concepts, I encountered a number of different issues during the discussion of each of them. Those issues will be discussed in section 3.1. In addition, in section 3.2. I will discuss the sources that I used the most frequently and found the most useful during this research.

3.1. <u>Issues</u>

Firstly, I found that some concepts can be denominated through many different terms. This was the case with, for example, the concept of *HIV enteropathy*: **Medical 2016** offered four synonyms, namely *HIV-associated enteropathy*, *AIDS enteropathy*, *AIDS-associated*

enteropathy and *idiopathic AIDS enteropathy*. In this particular case, I decided to include some of these terms as morphological variants, since they did not differ greatly from each other and since, in my opinion, it would be best to limit the number of terms for each medical concept in order to prevent confusion and stimulate consensus.

However, in other cases such as the concept of *HIV seropositivy*, I preferred to include all the synonyms that I was able to find, which were *AIDS seropositivity*, *anti-HIV positivity*, *HIV antibody positivity* and *HIV positivity*. This decision was based on the fact that each of these terms occurred relatively frequently in English medical sources. Here, I believe it was more important to add all the synonyms of this concept rather than stimulating consensus on one term, because these terms are all commonly used in English medicine.

Secondly, I discovered that for some English concepts, it is very difficult to suggest a suitable Dutch equivalent, even though the English term is commonly and frequently used. This was the case with, among other concepts, *infectious ectromelia* or *mousepox*. Via **Google Scholar 2016-04-16**, *infectious ectromelia* was found in 707 primary English sources and *mousepox* was found in 3,310. However, the literal translation of *infectious ectromelia* in Dutch, which would be "besmettelijke ectromelia" or "besmettelijke ectromelie", was not found in any source, not even in **Google**. I did find the Dutch terms *ectromelia*, *ectromelie* and *muizenpokken*, but the sources that mention these terms are very scarce. In addition, *ectromelia* and *ectromelie* also have other meanings than the meaning of *mousepox*. Eventually, I decided to select *muizenpokken* as the reference term, since it was the only unambiguous term to be found, but in order to verify this term more thoroughly in primary contexts, I had to search the orthographic variant *muizepokken* as well, which is spelled according to obsolete spelling standards.

A third observation that I made during my research, is that many Dutch terms can be found spelled according to incorrect spelling standards. For example, the term *muizenpokken* was also found relatively frequently as *muizepokken*, *HTLV-2-infectie* as *HTLV-2 infectie* and *aids-enteropathie* as *AIDS-enteropathie*. This may be due to the latest change in Dutch spelling standards, which occurred relatively recently in 2005. As a consequence, I sometimes had to enter an incorrectly spelled term such as *muizepokken* into the search engines in order to verify this term as extensively as possible. In order to check the correct spelling of a term, I often consulted **Woordenlijst** and **Taaltelefoon**.

3.2. Most useful sources

Before the start of the discussion of each concept, I consulted the short definition or 'Scope Note' provided by **Medical 2016**. The Scope Note is an excellent starting point to understand the meaning of the concept, especially since these medical concepts are often very unfamiliar. Moreover, **Medical 2016** usually offers other 'Entry Terms', which I often considered as 'potential synonyms'. More often than not, these Entry Terms were indeed found to be full or near synonyms of the reference term.

Next, I looked up the concepts in specialized English medical dictionaries. I especially find the dictionaries **International** and **Dorland's** to be the most useful and elaborate sources for definitions of medical concepts. In addition, these dictionaries often provided one or more synonyms for the English concepts. Online dictionaries such as **Webster's** and **MediciNet** proved to be very useful to find definitions in online secondary sources.

With regard to finding an accurate Dutch translation of the English concepts, I often consulted the bilingual medical dictionaries **Reuter**, **Kerkhof**, **Mostert** and **Pinkhof-3**. Even though they did not always provide an entirely correct translation of the concept, they often offered a translation for a part of the term, such as the translation of *lipodystrophy*, which is *lipodystrofie*, for the concept of *HIV-associated lipodystrophy syndrome*. These 'partial translations' were often the starting point for finding an accurate Dutch translation. The potential Dutch translations that I eventually found, were then looked up in specialized Dutch medical dictionaries. Here, the most useful reference works were **Pinkhof-1** and **Pinkhof-2**. These dictionaries generally offer an elaborate definition of the Dutch term, as well as one or more full or near synonyms.

The last stage of the discussion was verifying the frequencies of the terms and the contexts in which they appear. For the frequencies, search engines such as **Google, Google Scholar** and **Google Books** were very helpful, since the search settings can easily be adjusted and the figures for the frequencies are clearly shown. For the Dutch terms, the frequencies were also looked up online in **NTVG**, **Nederlands Tijdschrift voor Geneeskunde**, since this source is a collection of Dutch medical articles. The search engines were also very effective to find contexts in which the terms appear. For the English terms, I mainly consulted **Google Scholar** to find contexts in English medical articles. For the Dutch terms, I consulted both **Google Scholar** and **NTVG** in an attempt to find adequate contexts in Dutch primary sources.

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