



UNIVERSITY OF LATVIA
FACULTY OF HUMANITIES
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TRANSLATION AND INTERPRETING

**PECULIARITIES IN TRANSLATION OF PHARMACY
RELATED TEXTS**

**AR FARMĀCIJAS NOZARI SAISTĪTU TEKSTU
TULKOŠANAS ĪPATNĪBAS**

MASTER THESIS

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ANOTĀCIJA

Maģistra darbā pētīts farmācijas tekstu un atbilstošās terminoloģijas tulkošanas nozīmīgums. Darba mērķis ir izpētīt ar farmācijas nozari saistītu tekstu tulkošanas īpatnības. Pirms pētījuma veikšanas tika izvirzīti divi pētījuma jautājumi, lai izzinātu, kādas ir iepriekš minēto tekstu īpatnības un kā tās ietekmē teksta tulkošanu. Darba autore ir analizējusi tulkošanas teoriju, medicīnisko tekstu iezīmes, īpašu uzmanību pievēršot farmācijas tekstu un to terminoloģijas tulkošanai. Darba empīriskajā daļā veikta ar farmāciju saistītu informatīvo tekstu tulkošanas analīze, kā arī metodes, kas pielietotas, lai tulkotu tekstu no angļu valodas latviešu valodā. Nobeigumā tika izdarīti secinājumi un atrasta atbilde uz abiem pētījuma jautājumiem.

ATSLĒGVĀRDI

Tulkošanas teorija, speciālā lietojuma valoda, medicīniskā tulkošana, farmācijas tekstu tulkošana, farmācija, terminoloģija, tulkošanas metodes

ABSTRACT

This Master thesis portrays the importance of pharmaceutical translation in combination with rendering the respective terminology. The aim of the thesis is to research the characteristics of the translation of pharmacy related informative texts. Before conducting the study, two research questions were inquired in order to learn what the features of aforementioned texts are and how they affect the translation of such texts. The author has investigated the theory of translation, the features of medical texts with the main focus on pharmaceutical translation and terminology. The empirical part consists of the analysis of pharmacy related informative articles and the methods applied for translating them from English into Latvian. Ultimately, after making conclusions, a resolution to the research questions was found.

KEYWORDS

Translation theory, Language for Specific Purposes, medical translation, pharmaceutical text translation, pharmacy, terminology, translation methods

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INTRODUCTION

The Master thesis “Peculiarities in Translation of Pharmacy Related Texts” comprises the analysis of a variety of translation methods and approaches regarding pharmacy related texts. First and foremost, theoretical background related to terminology has been explored. The author of the thesis believes that translation implies multiple meanings since it is possible to view it as an intricate process as well as a part of the business world nowadays. Essentially, translation is based around varied definitions, functions, methods and classifications in relation to theory which is presented in many works of specialists and experts in this field. It takes a great deal of dedication to search for, examine and choose the most relevant basis of theory for particular specifics of translation.

Nowadays, ideally, every particular field of translation, whether it is medicine, economics, tourism or any other area, would need professional translators that would also all specialize in only these certain areas, in reference to terminology. However, the reality does not resemble the situation that has just been portrayed. This means that ever so often translators who do not specialize in one particular field, have the task to translate texts which consist mostly of terminology belonging to this field. Such situations are a challenge for both experienced and less-experienced translators.

Pharmacy related informative articles and the terminology that they consist of can be looked at from two different perspectives. The first one is that an informative article is generally a type of text that could be rendered by many professional translators without going into detail of a certain and specific terminology; the other perspective is that pharmacy related texts include specific terminology which could not be rendered by simply anyone. A translator that undertakes translating such texts needs to specialize in both areas.

Even though translating articles which are exceptionally pharmacy related is a rather specific area of translation, one needs to remember that informative articles can provide a considerable amount of facts and descriptions which might affect and influence the reader in different ways. This will always be relevant because people will always want to be informed about the things that have happened recently. Similarly, the field of pharmacy is an ever-growing and developing area, but unlike the informative texts, pharmacy related texts contain specific terminology that not everyone is able to understand.

Therefore, the reasoning behind researching and analyzing particularly pharmacy related informative articles is that these kinds of texts could be understood by both pharmacy related professionals and the general audience, if the best translation methods and approaches were implemented whilst rendering the texts.

This is why the author of the thesis holds the view that pharmacy related informative articles should exist as a separate section of pharmaceutical translation apart from the medical translation;

The **goal** of the Master thesis is to research the characteristics of the translation of pharmacy related informative texts.

The author has established two **research questions**:

1. What are the features of pharmacy related informative articles?
2. How to deal with peculiarities in terminology whilst translating pharmacy related informative articles?

The author of the Master thesis has set several **objectives** in order to achieve the goal stated prior:

1. To research the literature relating to the aspects of translation as such as well as pharmacy related translation and the methods used for translating relevant texts;
2. To review and compare specific theory on translation, medical translation and pharmaceutical translation and terminology in connection with those;
3. To describe, analyse and compare pharmacy related informative articles;
4. To review and analyse the translation methods that were applied;
5. To draw significant conclusions at the end.

The author of the thesis has chosen the following **research methods** that have been applied:

1. A thorough analysis of the theory of pharmaceutical and medical translation and the respective terminology;
2. The analysis of pharmaceutical texts and the translation methods that were applied for translating them.

The **outline** of the chapters:

Chapter 1 explores the general role of translation by defining what translation is alongside with looking into the division of text types and their functions as well as methods of translation which contributes to the comparison of their purpose. The chapter concludes with the descriptions of the aspects of Language for Specific Purposes which provides general information on what LSP is, but also focuses on Language for Medical Purposes specifically.

Chapter 2 is an overview of the features of medical translation alongside with describing the main areas of medical translation as well as the formation of medical terminology which is an introduction to the chapter that follows afterwards.

Chapter 3 is focused on the main aspects of pharmacy related texts and their translation; it begins with the portrayal of the historical development of the concept of pharmacy related texts and it finalises with an investigation of how the pharmacy related terminology is constructed.

Chapter 4 reveals the analysis of pharmacy related text translation with the general description of pharmacy related informative articles which is followed by the review of terminology consisting of the process of rendering terms and searching for the most relevant terms and it finalises with the translation methods applied for translating informative articles.

1. THE INSIGHT IN THE THEORY OF TRANSLATION

According to several dictionaries the word *translation* generally means a process of rendering words or whole texts from one language to another (*MacMillan Dictionary; Cambridge Dictionary; Oxford Dictionary*). Nida (2001:1) poses an important question regarding the idea of translation; he wonders whether translation is simply the act of transferring meaning from one language to another or whether it resembles a theory of similarities and contrasts of languages. Hence, there is more to the meaning of translation than merely a definition.

Primarily Chesterman (1997) and Bassnett (2014) both state that the notion of translation has been present for more than a thousand years. Bassnett continues by mentioning that throughout time many different kinds of theories and approaches to translation have been developed. At the same time the purpose of translating something has expanded in variety, in other words, for instance, the first translations of the Bible required a very different approach than rendering texts of the present time.

Furthermore, the history and theory of translation can be divided into several parts as described by Bassnett (2014) with the reference to George Steiner's *After Babel: Aspects of Language and Translation* (1975). There are mainly four periods of the development of translation that can be distinguished; the first one starts with the works of Classical writers and philosophers and lasts until 1791 which generally covers a span of about 1700 years and the central idea of this period is that everything about translation comes directly from the practice in progress. The next period lasts until 1946 and with this period the theory is viewed in combination with the development of vocabulary and methodology. The third period that follows begins with initial concept of machine translation and during this period structural linguistics and theory of communication is introduced. The last period partially overlaps the previous one and originates in the 1940s creating a wide range of approaches to translation and interpretation. Consequently, this division of periods illustrates how difficult the research and discovery of the history of translation actually is. In fact, it is impossible to divide the development of human culture in periods of time; nevertheless, the division which was described prior manages to keep the balance of the development. There needs to be a more thorough examination of chronological periods of time which would lead to more in-depth understanding of the development of translation throughout time. By and large, although the ideas that have been portrayed above are quite subjective, the descriptions are fair and the characteristics mentioned are still relevant today (Bassnett, 2014:51-53).

1.1. Significance of Translation

Hatim and Munday (2004) suggest that nowadays on a daily basis people are affected by translation greatly since it can be a part of their lives in many various ways, whether it be translating something of an international importance or translating a simpler text for it to be understandable for the ordinary society.

What is more, written translation is subdivided in the following types:

1. *intralingual type*
2. *interlingual type*
3. *intersemiotic type*

The **first type** has its boundaries within one language only in which a text is translated and often this is associated with paraphrasing or rewording sentences. The **second type** is different from the previous one as it involves language pairs since this type does not revolve around only one language anymore. Conversely, the **third type** is focused on interpreting verbal items with the help of non-verbal items, for example, songs or images etc. Presumably, the second type is considered the most proper way of translating texts which is the basis of translation research at present regarding written languages. Nonetheless, this concept has been advanced much further and it is not simply transferring items of one language to their equivalents in another language. Nowadays, translation refers to three main aspects: process, product and cognition. Firstly, a text is transferred from source language (SL) to target language (TL) by a translator which is the process; the result of that is the product or, in other words, target text (TT). Crucial parts of both process and the product are the ‘cognitive, linguistic, visual, cultural and ideological phenomena’.

Additionally, Vallejo (n. d.) points out that there are, in fact, two core ways of viewing translation. On the one hand, the main idea of translating something is transferring a text from SL to TL as precisely as it is possible keeping close to the meaning of almost every word in the original. On the other hand, the main concern is to produce a particular text that cannot be recognised as a translation at all; the flow of sentences and the usage of words ought to resemble the features of TL. An experienced translator is able to balance between these two approaches to translation with ease and it can be affirmed that a translator’s role in translation is significant thereof. Hatim and Mason (2013) agree with this opinion adding that the translator has to transfer a certain text from one language to another whilst thinking of the TL and the way to still maintain the characteristics of the SL and at the same time adapting the

text to the target audience. By and large, a translator is the creator of ‘a new act of communication’.

Essentially, the translator’s main objective is to be aware of the SL, TL and the subject matter simultaneously. The translator is to take the meaning of the structures and forms of SL and transfer it into the TL whilst preserving the forms and structures of the TL at the same time. Consequently, in this process the form of the text is changed; however, the meaning remains the same. The principal point here is that the text which has been translated should sound natural when the target audience reads it because the translator must understand the intention of the author of the source text (ST). This involves also using appropriate culture-specific words and expressions related to the TL as every culture is not the same and the translation may affect the understanding of people in various ways (Vallejo, n. d.).

Newmark (1991) develops the idea further by proposing several particular perceptions of translators. First of all it is significant to ascertain the importance of the language of a text at hand; as the significance increases, the translation becomes closer to the ST in terms of meaning. This concerns every level of the text, such as a chapter, paragraphs, sentences etc.; the translator has to take all of this into consideration. Conversely, Newmark (1991) presents an entirely opposite view at the same time; he believes that as the importance of the language of a text decreases, the translation may have variations and can be further from the meaning of the ST. Another point to be aware of is that the translator needs to distinguish the nuances of a text in connection with the message that is conveyed through the text. If the meaning of the message increases, the importance of nuances of a text decreases simultaneously. Thus, the translator should take into account every detail of a text and see it from the communicative aspect as well as the semantic aspect.

Newmark (1991) concludes that translator’s work comprises of certain main points. First and foremost, a translator bears knowledge of the factual base of a language minding and identifying any flaws; a translator possesses the necessary skills to choose the appropriate language in order to use it accordingly. Other important points are creativity and intuition which the translator comprises; it is important to be able to differ between the best ways to use certain phrases or words at times instinctively. Sometimes the translator might even create their own, new words which would be relevant to the text.

1.2. Categorization of Text Functions

It is important for a translator to not only be able to define what translation is in general, but they also need to view it on a deeper scale which involves a thorough research of language and text types.

Several authors have described and explained the classification of texts according to their functions. One of the researchers, Newmark (1987) notes that translation is generally based on the theory of language and this means that the particular types of texts should be acknowledged. Whilst explaining text functions, he refers to Bühler's functional theory and admits that it is the basis of his own observations. Additionally, Wachsmuth and Bujna (2011) also refer to Bühler's theory when describing the linguistic functions in their research. They identify the relations of three main aspects in language – the speaker, the receiver and the communication. Another researcher, Gracia (1995), draws similar conclusions on the division of linguistic functions. The comparison of the researchers' views and ideas leads to the following presumable classification of the linguistic functions:

- **The expressive function**

These are seen as personal texts as they are used to express the mind, emotion and attitude of an individual which is directed towards a particular area of interest; the expression of feelings is far more crucial than the response that might be received after (Wachsmuth and Bujna, 2011). Depending on the area that a text is directed towards, it changes the mood and the emotion that a reader or a listener might experience. Mostly, the use of expressive language involves using texts for uttering statements apart from some cases where an emotion could be expressed in a single interjection or something of similarity (Gracia, 1995). The types of expressive texts vary from lyrical poetry, which is considered quite an intimate type of expression, to texts that denote authority derived from the high level of linguistic competence of the author (such as political speeches or documents etc.). A translator ought to be able to identify the components of expressive texts and analyze them (Newmark, 1987).

- **The informative function**

Broadly speaking, a language is said to possess the informational function when it is used in order to communicate, as observed by Gracia (1995). The kind of information can be of all sorts, since it may be communicated in a correct or, on the contrary, an incorrect way. However, the principal function is the delivery of information and it does not matter what are

the contents of this particular information. Wachsmuth and Bujna (2011) mention that the most significant part of the informative function of a language is a certain external state. Newmark (1987) develops the idea by suggesting that typically the informative texts may cover any possible topic. Usually the format of informative texts includes textbooks, reports, newspaper articles, different kinds of academic papers and other similar types of texts. Subsequently, these formats are broadly characterised by the following language styles: a formal and technical style is meant to be used in academic papers, an informal style combined with particular technical terms is meant for textbooks, an informal style with simple grammatical structures normally appears in popular science or art books and, lastly, a non-technical and familiar style in the combination of short sentences and broad usage of metaphors is used in popular journalism. Nonetheless, a drawback of the informative texts is that a wide variety of such texts are originally flawed and inadequately written and it is then the translator's responsibility to make any corrections that are required. Hence, most translations at present appear to be better than the ST.

- **The vocative function**

Alternatively, Gracia (1995) refers to this type of text as the directive text. Essentially, the function of this type is to cause or to prevent an action. Newmark (1987) adds that the central aspect of this function is the receiver or, in other words, the reader. This type of language can be used for giving commands and instructions as well as directions of action and requests. Some of the examples of vocative texts include instructions, public announcements, propaganda, persuasive writing and some types of fiction with the purpose of selling a book and entertaining the reader at the same time (Gracia, 1995). It needs to be pointed out that nowadays vocative texts are mostly directed towards groups of people rather than separate individuals. The affected individuals are lead towards particular actions, feelings or reactions which are predetermined by a text. Moreover, specific grammatical forms, such as imperatives, infinitives or subjunctives, play a significant part in determining the role of authority or equality as well as commands, requests or persuasion. The linguistic items used in the vocative texts must be easily understandable by the readers forthwith (Newmark, 1987).

In addition to the three previous main categories of text functions, Gracia (1995) proposes two more – *evaluative* and *performative functions*. The first one is used as a presentation of an evaluation; most of the time the language is implemented by various levels of complexity. The latter function regards performing an act.

Newmark (1987) draws a conclusion by insisting that only some texts embody merely one type of function; in fact, a significant amount of texts are a combination of all three

functions – expressive, informative and vocative with a greater emphasis on one of them. For instance, nearly all informative texts will have a notion of the vocative function or the expressive texts will normally address information and the level of the vocative notion will vary.

As the variety of text functions may differ and have many combinations, the methods of translation will be explored further on accordingly.

1.3. Methods of Translation

According to Newmark (1987), throughout the history of translation from at least the first century BC until the turn of the 19th century writers have debated if a translation should be literal or considered to be as more of a free view based on perception. It is often argued whether a translator should translate a text directly or translate the sense and feeling of words and the matter of context as opposed to literal words, formation and the given manner. Until the 19th century free translation was seen as the only true method of translation and such translators as Tyndale and Dolet were severely criticized while Wycliffe's works were banned due to their focus on literal word translation. More importantly, cultural anthropology developed into the suggestion that linguistic barriers were insuperable and that culture became the true creator of language and that, if attempted, literal translation had to be the predominant method. This idea was culminated in the statements of the extreme literalists Walter Benjamin and Vladimir Nabokov. While the argument of literal translation over free translation occurred, this purely remained theoretical and neither nature of reading nor text were considered as too often the writer and reader identified notably with one another. Now, opposed to that, while this context has changed, the issue remains. In addition, El-dali (2008) emphasizes two things; firstly, even though translation has a long history of several centuries, the term *translation studies* has developed tremendously only recently and, secondly, translation is considered to be a subsection of applied linguistics. Over the years, a variety of translation forms have emerged and, as of late, the working conditions of translators have changed because of the development of technologies which also means that other new forms of translation have established, too.

Further Newmark (1987) and Fawcett (2014) attempt to outline the division of translation methods; they can be divided as follows:

- **Word-for-word translation (also called *calque*)**

This is often displayed as interlinear translation with TL words immediately below the SL words; the SL word order is preserved and each word is translated individually by using their most common meanings and understanding without the contextual view. Word-for-word translation is mainly purposed for lexical unit translation either to understand source language literary mechanics, or to construe a difficult text as part of a pre-translation process (Newmark, 1987). Fawcett (2014) adds that this is often viewed in specialised or internationalised areas, for example, for quality assurance. Some examples include *Standpunkt* and *Biergarten* which translated from German would be *standpoint* and *beer garden*. Calques can become accepted widely throughout a TL and become integrated into common use. Nevertheless, obscure calques can be derived from English and used within other language targets, significantly visible within specific vocations and subject material pertaining to law and the sciences. In other words, an example of the Spanish phrase *Solución de compromise*, meaning *compromise solution*, while not literal, is understood by Spanish attorneys, but is not readily available to be understood by someone outside of that vocation. An unsuccessful calque can prove to be greatly unnatural and cause offense, unwanted humour or provide an opportunity for mockery at the translator's skill with a TL.

- **Literal translation**

Within literal translation, grammatical SL constructions are subverted to the nearest equivocal expressions; however, lexical language is translated singly without context. As part of a pre-translation effort, its main purpose is to indicate a problem which requires solving (Newmark, 1987). It can only be used in certain languages where sentence structure is similar. Against most suppositions, not all sentences within a language can be translated literally to another language, regardless of whether a single example of translation has been successful (Fawcett, 2014).

Additionally, Fawcett (2014) refers to the two methods mentioned above as direct translation methods. Direct translation techniques are required when structural and conceptual elements of a SL can be transposed into a given TL.

- **Faithful translation**

As the next method Newmark (1987) distinguishes faithful translation which has the main purpose of reproducing meaning in the contextual sense of the original written text, within grammatical constraints of TL structures. It culminates in the transfer of cultural words while preserving any abnormalities through grammatical or lexical constructions (deviating

from SL normality) within translation. It persists to be completely faithful to textual intentions and text realisation of an SL writer.

- **Semantic translation**

Semantic translation consists of modifying a phrase that exists in the SL to convey the same principle while using different lexical views (Fawcett, 2014). In opposition to faithful translation, semantic translation in itself must account more for the aesthetic value of a text pertaining to the appearance and the natural sound of an SL text at the expense of meaning, so that neither assonance, word-play, nor repetition dull the translated text. Following on from this, culturally important language may be falsely interpreted by neutralised world recognised language. The significant distinctions separating faithful and semantic translations include the first being unchangeable, while the second maintains its flexibility and continues to allow creative exception while encouraging empathy from the intuitive translator (Newmark, 1987).

- **Adaptation**

Adaptive translation occurs when specific culture within a language is expressed in a meaningfully different way, yet still remains familiar or viewed as appropriate within another language culture. It shifts in cultural environment as well as physically. Cultural references as part of this translation method can be changed when variations in different cultures can either be unmatched or become non-existent (Fawcett, 2014). Adaption, above other notable methods, allows the most freedom when translating documentation. Its crucial use can be found in plays (comedic and poetic), including, but not limited to, characters, themes and plotlines that can be preserved as opposed to being converted to the TL culture; requiring the text to be completely re-written. The distressing act of having a play re-written through literal translation has consequently created poor adaptations which have required rescuing through traditional period accurate play styles (Newmark, 1987).

- **Free translation**

Free translation (as the title implies) provides translation without the constraints applied by mannerism or content protection of the original text. It is commonly used to paraphrase a much longer text than the original; this is the so called *intra-lingual translation* and it is often seen as pretentious and is not viewed as a regular method of translation (Newmark, 1987).

- **Idiomatic translation**

Idiomatic translation centres on the message pursued by an original text at the cost of distorting nuances and the meaning by advocating colloquial terminology and idioms where they are non-existent in the original text (Newmark, 1987). Fawcett (2014) provides an example of this with the reference to the problem surrounding nuance translation in languages that use expressive forms such as the Spanish informal *tú* and formal *usted*, French *tu* and *vous*, and German *du* and *Sie* which would be translated simply as *you* into English; meanwhile the degrees of formality in English are expressed with other methods alongside that.

- **Communicative translation**

Communicative translation, in comparison, renders the specific contextual meaning predominantly within the original text, so that both language and content are easily comprehensible and acceptable to the readers (Newmark, 1987).

As declared by Fawcett (2014), the methods, when certain structural or concept based elements of the SL cannot be directly translated without jeopardising the meaning or disturbing stylistic and grammatical elements of the TL, are called oblique translation methods. In addition, Newmark (1987) states that only semantic and communicative translation methods aim to fulfil the two main objectives of translation – accuracy and economy. Semantic translation is primarily used for expressive, communicative or vocative texts. Semantic and communicative translation methods treat items such as stock and dead metaphors, collocations, technical language and slang or colloquial terminology similarly. Expressive components of correspondingly styled texts (unusual syntactic structures, collocations, metaphors, words peculiarly used, neologisms) are either closely, if not literally, rendered with the exception of appearances in informative or vocative texts, to which they are normalised, in relation to cultural components which tend to be transferred intact within expressive texts, while also being explained or replaced with equivalents in vocative texts.

Expressive translation as a consequence of its literal approach must also maintain inaccuracies in text; however, the translator should make any factual or moral errors known where appropriate. Inaccurate texts should be corrected within communicative translation and refer to as expressive for things such as sacred texts. So much for detail, but semantic and communicative translation must also be seen as a whole item. Semantic translation remains personalised following thought processes of the author, accentuating on translations in the pursuance of nuance and meaning, yet continues to aim at concision in order to remain

pragmatic. In comparison, communicative translation remains more social and concentrates on the main force and message within a text, tending to be simpler and briefer. On the other hand, semantic translation is normally inferior to the original as it consists of both cognitive and pragmatic loss. In brief, semantic translation has to interpret while communicative sets out to explain. In theory, communicative translation allows the translator an equal amount of freedom, since the translator is serving a large and undefined audience, whilst in semantic translation the translator follows a single well informed and definitive authority (Newmark, 1987).

It is occasionally viewed that the overriding purpose of any form of translation should be to achieve a state of equivalence, to achieve the same effect or as close as deemed reasonable to the audience of the translation as was purveyed by the original. The equivalent effect should be seen as desirable rather than the full focus of a translation bearing in mind that this is an unlikely result in two cases – firstly, if the purpose of the SL text is to affect and the TL translation is to inform (or vice versa) and, secondly, if there is a pronounced cultural gap between the SL and the TL text. Comparatively, within communicative translation of vocative texts, equivalence is not only desirable but proves to be essential, wherein it is the criterion by which effectiveness, the value of translation of notices, instructions and other publicly viewed texts are to be assessed. The response of the audience could even be quantified as a summary and correlated to prove the effectiveness of the translation (Newmark, 1987).

The impact varies between the TL reader and the interests of an SL reader. The vocative persuasive threat in most informative based texts has to be rendered within the eye of the reader, for instance, with an equivalent appropriate response. In semantic translation, the initial problem is for serious imaginative literature, where there are separate unique readers as opposed to a generalised group. Noticeably, the more universal the literature, the broader equivalency is possible due to the ideals of the original having an ability to rise beyond cultural boundaries (Newmark, 1987).

To conclude, Bosco (n. d.) refers to the idea of Louise M. Haywood, the professor of the University of Cambridge, and she says that translation ‘is not just a movement between two languages but also between two cultures. Cultural transposition is present in all translation as degrees of free textual adaptation departing from maximally literal translation, and involves replacing items whose roots are in the source language culture with elements that are indigenous to the target language’.

1.4. Aspect of Language for Specific Purposes

Hitherto, the methods of translation and text functions have been studied and described which generally outlines the analysis of a text in terms of translation. As an addition to defining the meaning and features of translation, the aspects of Language for Specific Purposes (LSP) should be reviewed as well, since pharmacy related texts are comprised by specific language apart from the general linguistic items.

Davies and Elder (2004) start by defining LSP and they suggest that it mainly focuses on two areas: one is people's needs in education and the other is the research of different languages and their specific subject fields. LSP can be applied to various kinds of language combinations, but very often it is used in English and is called English for Specific Purposes (ESP). Dudley-Evans and St. John (2007) continue by explaining what LSP is with the reference to Peter Strevens' (1988) descriptions; they suggest that ESP centres on meeting the learners' needs and language that is appropriate to them. It is content-based with particular topics and it is seen as more of an approach rather than a product. However, the essence of ESP is to find out the reasons for learners to have the necessity to learn a foreign language. In spite of this Piasecka et al. (2015) explains that a persistent problem in relation to ESP refers to the students achieving confidence to use vocabulary that relates to a specific field. Moreover, it is crucial to apply, for example, the most suitable collocations or co-occurrence patterns that are utilized together with specialist terminology.

As stated by Hutchinson and Waters (2006), similarly to the development of human activity throughout history, ESP was neither planned, nor consistent in its way, but it was related to the phenomenon rising from an excessive number of trends converging. These trends operated differently depending on the area of the world; nonetheless three significant points have been identified due to the emergence of ESP. Significant expansion of knowledge and activity surrounding technical skills, economic expansion and scientific progression was not only heralded but enhanced through the end of the Second World War in 1945. A benefit for the demand of internal language research and study was created through an enormous expansion of both technological force and commercial demand. As such the demand for language subsequently fell to that of English as a result of the most notable economic dominion being the United States of America. Moreover, the guiding principle of ESP became, 'tell me what you need English for and I will tell you the English that you need' (Hutchinson and Waters, 2006:8) arising from the desire to seek a group of specialized learners with the unique aspect of analytical linguistics to determine the particular aspects of work and study of their specialization. Three separate aspects provided a combining effort to

increase the growth of ESP throughout the world. An initial aspect proved to be the need for a worldwide use of English through both specialized needs and both linguistic and educational psychology. This way ESP rapidly gained power and promoted increased language learning (Hutchinson and Waters, 2006).

Paltridge and Starfield (2013) maintain that this branch of learning became known because it was used to teach English as a foreign language and it allowed a learner to shine within a particular domain or area. Initially, this mainly surrounded the need to communicate for commercial and technological advancement. Following on from this development further expansion has encouraged and adopted the inclusion of other areas including English for Academic Purposes (EAP), English for Occupational Purposes (EOP), English for Vocational Purposes (EVP), English for Medical Purposes (EMP), English for Business Purposes (EBP), English for Legal Purposes (ELP), and English for Socio-cultural Purposes (ESCP).

As far as particularly English for Medical Purposes is concerned, Allum (2012) points out that specialised linguistic knowledge in healthcare and the ability to communicate within the healthcare environment is a significant part of this field. Hospitals tend to be difficult to work in due to the stress doctors and other healthcare professionals experience daily. This is one of the principal reasons for having a solid knowledge of the language that is needed in a specific healthcare environment. The main idea is that the requirements of EMP respond to the needs of the workplace and the workers. Additionally, the environment where the language would be used might be in an English speaking country, but then again it might also be in any other country where the English language is the common language for communicating with others within this environment. EMP involves such elements as developing communication skills which ensure safety in the particular environment, there is also a significant amount of technical language practice and usage in the appropriate context etc.

Moreover, Allum (2012) insists that EMP covers many areas of necessity and is constantly evolving. Moini (2010) agrees and continues that one might find learning medical terminology as something rather similar to acquiring a foreign language. Most medical terms have developed from Greek and Latin languages with similar prefixes, roots and suffixes throughout time; nonetheless, a notable amount of new terms are derived from general English.

Most importantly, with reference to pharmaceutical texts, Piasecka et al. (2015) declares that even if medical texts and their translation have been researched in multiple ways, including the connection with applied linguistics, there is a scarce number of studies exploring the use of English in pharmacy related texts; there is hardly any information on

register variations as well as vocabulary patterns and the style of verbal expression. Any research that has been done hitherto mostly appears only fragmentarily in broader studies on written medical discourse. At present there is merely one study which has been done; namely, Christopher Gledhill's (1995) phraseology and linguistics analysis exceptionally focused on the problem of phraseology regarding pharmaceutical texts. What is more, it seems to be onerous and one might suggest that it is even impossible to find any kind of research that portrays the usage of language in a variety of pharmaceutical contexts as well as the changes depending on the kind of a text or discourse community. Consequently, the English language that is meant to be used for pharmaceutical purposes normally appears only as part of other type of texts, for instance, EMP, ESP, EOP and more where it is touched upon generally. Similarly, the English language in different pharmacy related texts is hardly ever referred to as pharmaceutical discourse or even English for Pharmaceutical Purposes. Interestingly enough, this statement can be confirmed according to the data gathered from Google (February, 2014), the expression *pharmaceutical discourse* appears 783 times, whilst the phrase *English for Pharmaceutical Purposes* appears only 16 times and, more importantly, is used only two times in terms of applied linguistics.

Generally, there are no linguistic variation descriptions in pharmaceutical texts that would be already prepared to be used in the language area of pharmacy. Since there are not enough comprehensive descriptions of the most common and unique vocabulary items used in different pharmacy related texts, English for Pharmaceutical Purposes is almost never taught as a separate subject with a special language at the university, for example; this includes specifically courses that are focused on translation. For another thing, the absence of linguistic variation descriptions may unfavourably affect the students' competence in terms of using specialist terms appropriately (Piasecka et al., 2015).

Furthermore, it is assumed that there are two standard types of pharmaceutical texts distinguished – clinical trial protocols and European public assessment reports. Any kind of research that pharmaceutical texts might be involved in is conducted from the perspective of the register of a text. Another aspect is that the same kinds of research are based on three components of register analysis – comparative approach, quantitative analysis and a representative sample of texts. These three components include such elements as comparing registers or identifying the features of a register and more (Piasecka et al., 2015).

This chapter portrayed the role of translation and the aspects of LSP, putting emphasis on EMP and English for pharmacy related texts; the next chapter describes the features of medical translation.

2. FEATURES OF MEDICAL TRANSLATION

This chapter is devoted to the insight of the features of medical text translation.

Initially, Gambier and Van Doorslaer (2010) strive to view medical translation from its historical aspect. They imply that in evolving civilizations medical translation has proved to be significant in the development and dissemination of knowledge through many languages, including Greek, Latin, Arab and English to name a few.

2.1. Areas of Medical Translation

Montalt and González-Davies (2007) bring forth the explanation that medical text translation is rather similar to other types of translation. It is most certainly an activity that is led by what is assigned and it requires the ability to adapt cultural differences as well. The translators in this subject field use technological tools, for instance, translation memories. Gambier and Van Doorslaer (2010) agrees with this point of view and continues by saying that in traditional terms, medical translation has mainly been interacted with in the sense of highly specialised texts and problems surrounding terminology therein. Nonetheless, in modern professional practice this has become unrestricted and embraces other communicative events for contextual meaning from clinical practice to education and popularisation of all kinds within the language. Moreover, online information, video commentary and other material used in either medical training or documentaries focused on innovations addressed to the general public fall within the constraints of medical translation, which is no longer bound to traditional formats.

Essentially, Gambier and Van Doorslaer (2010) claim that there are four general categories in which medical genres can be grouped and those are **research**, **professional**, **educational** and **commercial** genres.

- **Research genres** are primarily used by researchers when communicating their finds and arguments (original articles, reports, theses etc.).
- **Professional genres** are mainly used by professionals in health regarding day to day work (clinical guidelines, summaries of characteristics, classification of disease, documents surrounding medical history etc.).

- **Educational genres** are used to provide teaching and learning within different contexts depending on the educational level (university or domestic courses) which might be course books, patient information leaflets etc.
- **Commercial genres** relate to buying and selling products in the medical and health sector advertisements, particularly, catalogues. Translators within this field develop specialised skill sets to enable the processing of terminology and specialised information resources, primarily with a great variety of both textual and rhetorical divides that have unique contexts not shared with other language and genre sectors.

More importantly, translators also require specific skills to adapt to different health systems and local genre specific organisations, coupled with cultural health aspects, understanding of disease and communicative acceptances, significantly surrounding knowledge asymmetries from the SL to the TL (Gambier, Van Doorslaer, 2010).

On top of that, Montalt and González-Davies (2007) describe the varieties of the most frequent specific areas of medical translation among many others:

- **Internal Medicine**

Some examples include: diagnosis and treatment of cancer, infections and diseases affecting, for example, blood, kidneys, joints etc. as well as substance abuse and treatment of eye, ear, skin etc. problems and others.

- **Orthopaedics**

Some examples include: preservation, investigation, and restoration of the function of the limbs, spine etc. as well as congenital deformities, trauma, infections, tumours and degenerative diseases of the spine, hands, feet etc. and others.

- **Paediatrics**

Some examples include: diagnosis and treatment of infections, injuries, genetic defects, many types of organic disease and dysfunction in children and others.

- **Psychiatry**

Some examples include: prevention, diagnosis and treatment of addiction, mental and emotional disorders such as schizophrenia and other psychotic disorders as well as sexual and gender identity, adjustment disorders and others.

- **Surgery**

Some examples include: preoperative, operative and postoperative care for surgical conditions affecting almost any part of the body.

- **Pharmacology**

Some examples include: drug composition, mechanisms of drug action therapeutic use of drugs and others.

Additionally, Gambier and Van Doorslaer (2010) emphasize that unique features exist within medical translation that distinguishes itself from other areas of approach. In the initial instance it is formulated by the ethical codes of both biomedical research and healthcare. Reliability and accuracy of the translated texts, confidentiality of subjective material and sensitivity towards patients concerned is of major importance. Secondly, many conceptual networks, terminological repertoires, genres and social-contextual material remain specific to their healthcare setting. Competence within this translation skill encompasses them all.

2.2. Features of Medical Terminology

Gambier and Van Doorslaer (2010) imply that English is the primary source language within the medical translation process, mainly due to most medical research being originally published in this language and then transferred over to practice and education, before being exported to other languages. For this reason English is a crucial target language since the researchers worldwide need to publish their findings in the English language to make them understandable internationally.

In addition, Fischbach (1998) claims that as a norm one can find a lot of jargon (for example, *wet-nurse*, *lockjaw*, *mamma* etc.) and peculiar phrases (for example, *tennis elbow*, *ghost vessel*, *pigeon toe* etc.) in medical texts which might sound bizarre when used in everyday speech or writing. One might feel the need to not utilize these kinds of phrases since they sound strange; however, they are an integral component of the professional language and changing it would create a fundamental deviation in the register of any particular text. For another thing, there are also special medical terms which are a result of the development throughout the centuries and they are used for descriptions of diseases, dosage of medicines etc.

Some examples include:

- Panacea (English) – panaceja (Latvian) /Meaning – healing everything; refers back to ancient Greece and the goddess of healing Panakeia/

- Syphilis (English) – sifiliss (Latvian) /Meaning – a venereal disease; originated in 1530 from a poem by the Italian physician and poet Girolamo Francastoro/
- St. Vitus's dance (English) – svētā Vita deja (Latvian) /Meaning – involuntary twitching of extremities; referred to those suffering rheumatic fever who traditionally prayed to the child martyr St. Vitus that lived in the 3rd century/

These and other terms can be understood only by someone who is able to read or hear the description at hand. In relation to this, there can be no mistranslations by a translator because that might cause the reader to not grasp the correct idea and draw incorrect conclusions on a particular matter.

One of the most significant features of medical translation is terminology as the language of medicine is comprised of terms with the origin of Greek and Latin. Some of the examples are in relation to the parts of the human body (for example, Greek – *kranion* or *head*, *osteon* or *bone*, *ophthalmos* or *eye*; Latin – *oculus* or *eye*, *lumbago* or *waist*, *dorsalis* or *back* etc.), substances (Greek *glykys* or Latin *sebum*), the position of time and space (Greek *ékτος* or Latin *infra*) and many more. In comparison, taking the view of translation practice, two main tendencies arise in medical terminology – one is aimed toward standardisation and the other is lead toward variation. Through this, medical terminology also remains highly dynamic in culture, constantly changing to reflect new innovations and discoveries with the help of neologisms. New terms raise giving names to new realities such as *immunostaining* (“any of several staining techniques that are used to detect specific proteins”, available from: <http://www.yourdictionary.com>), *drunkorexia* (“a combination of anorexia or bulimia with alcohol abuse”, available from: <http://www.yourdictionary.com>) or *cyberchondria* (“anxiety concerning one’s health caused by visiting medical websites, available from: <http://www.yourdictionary.com>) which are frequent in medical texts and constitute the more challenging and effort consuming aspects of medical translation. One of the most common forms of synonymy in English is the doublets formed by technical names and their popular equivalents, such as *cephalalgia* and *headache* or *haemorrhage* and *bleeding*. Similar synonyms may cause translation problems because languages are not completely identical (Gambier, Van Doorslaer, 2010).

Another point to consider is the terminological equivalency and understanding of source material. The knowledge of how texts work formally, socially and also cognitively in two languages and culture involved is also required in significance. Examples, such as information leaflets, may vary formally after a medical translation to comply with local legislation within other countries or regions. This also is equivocal within specialised aspects

such as biomedical patents or source articles in journals. Translators who are familiar with these genres, functions, expectations, needs and typical typographical requirements such as structure and terminology are able to predict the text progression and anticipate possible confusions with higher levels of confidence. What is more, translators with increased confidence have a higher elevation of understanding of the overall context and will generally find appropriate renderings for the TT quicker and with higher levels of accuracy. Familiarity proves to be a useful skill when adapting and writing original texts (Gambier, Van Doorslaer, 2010).

Traditionally, medical research in translation has proven to be limited to the level of equivalence available and the perspective character has taken to seeking enhancement to the ability of the translator's level of choice at the lexical level. However, while this remains a productive method of professional translation, medical examples have yet to receive a significant amount of recognition by professionals within translation studies. Only within the last decade and a half have significant areas of enquiry arisen and allowed attention to be attracted to valuable insights. Furthermore, medical translation in terms of research is still in its infancy in comparison to more notable areas. Teaching methodology regarding medical translation and their appropriate competencies is developed in response to the need for subject unique training. Mismatches between TL and SL and cultures without a unified approach to solving these problems have mainly been descriptively approached with the view of medical terminology at the forefront of problem solving. This specific area has drawn the interest of many medical and health settings and particularly researchers of this side (Gambier, Van Doorslaer, 2010).

This chapter outlined the most significant features of medical translation and the next chapter is focused on pharmacy related texts which are closely connected to the medical field.

3. MAIN ASPECTS OF PHARMACY RELATED TEXTS

This chapter is devoted to descriptions of the development of pharmacy related texts, the formation of terminology and the features of pharmaceutical text translation.

Pharmaceutical translation involves a wide variety of texts relating to medicine and pharmaceutical products, such as research documentation, experimentation reports, analyses, test results, drug authorisation requests, treatment protocols and others. Pharmaceutical translators usually work with texts related to pharmacy and also medicine. At times translators in this subject field will need the assistance of physicians or pharmacists for legal purposes and in case of more sensitive documents, for example, drug marketing applications. This is the reason why there is a growing demand in the pharmaceutical market for qualified health care professionals that would simultaneously be willing to work as translators professionally (Gouadec, 2007:31).

3.1. Historical Development of Pharmaceutical Texts

3.1.1. Development Worldwide

Initially, Taylor and Harding (2001) provide a general outline of the development of pharmacy in the history of the world. They state that pharmacy as an occupation is one of the oldest professions in the world. Different kinds of evidence of the first pharmaceutical records can be found in history. For instance, the earliest known prescriptions were written in Mesopotamia, c. 2700 BC. The earliest traces of pharmacy in China and Egypt date back to approximately the same time; however, the most significant Egyptian pharmaceutical document (the *Papyrus Ebers*) was written only in about 1500 BC (see Figure 3.1). It contained around 800 prescriptions and there were nearly 700 various drugs indicated in it. Bender (1967) also mentions Theophrastus who is considered the “father of botany”. His works regarding the medical qualities and particularities of herbs around 300 B.C. were remarkably accurate in comparison to the knowledge of today. Only in the first century of AD the evolution of pharmacy into a science became actually noticeable when the Greek pharmacologist Dioscorides wrote his encyclopaedia *De Materia Medica* where he described roughly 500 plants and remedies with precise instructions for their preparation.

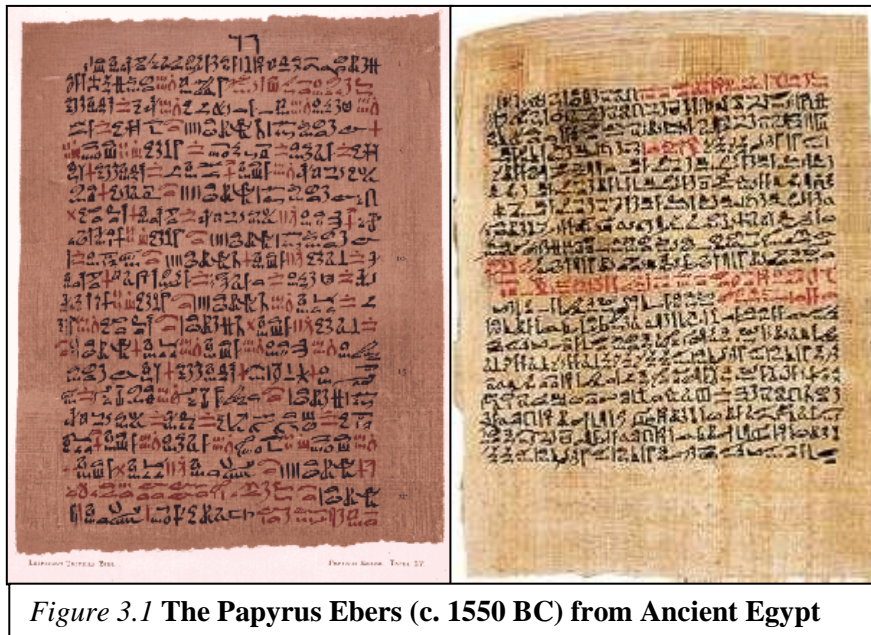


Figure 3.1 The Papyrus Ebers (c. 1550 BC) from Ancient Egypt

Nevertheless, perhaps the most meaningful contribution to the history of pharmacy was made by the Greek physician Galen towards the end of the second century AD. He introduced a variety of drugs that had been previously unknown and declared that drugs are able to affect and change the human body (Taylor, Harding, 2001). Moreover, Galen's propositions on creating and preparing drugs remained prevalent in the Western world for 1500 years. Many methods that were originally created by Galen back in the end of 2nd century have their analogues nowadays, too (Bender, 1967).

Several centuries later, around the 10th century AD, another influential figure appeared; it was Ali ibn Sina who was also known as Avicenna. His ideas were recognised as dominant in the West until the 17th century and in some eastern countries they still remain that way even nowadays (Taylor, Harding, 2001). Ultimately, pharmacy as a science first became legally separated from medicine in 1231 AD in Italy. Frederick II of Hohenstaufen, the Emperor of Germany and King of Sicily, announced the first European edict which separated pharmacists' responsibilities from those of medical practitioners (Bender, 1967).

Much later, in 1820, the first *United States Pharmacopoeia* was written; it was the first professional source of drug standards that was accepted nationwide and a milestone in the history of pharmacy (Bender, 1967). Since then the *United States Pharmacopoeia* has been revised and re-published periodically until this day. Nowadays it has developed into an official standard for the description of medicines and chemicals in the United States (Online 1).

3.1.2. Development in Latvia

Generally, the Latvian scientific terminology has been developing for centuries. The Latvian terminology has been influenced by the German, Russian and English languages throughout time; particularly, the English language has influenced Latvian ever since Latvia gained its independence. The impact of the German language was felt already around the 13th century when a lot of terms were borrowed from the language to form new words. As for the influence of the Slavic languages, it began already in the 9th century; however, it was nine more centuries later when the Latvian language was impacted heavily with Latvia being a part of USSR where russification was practised by the government. Lastly, the influence of the English language has been actually evident since the end of the 20th century with the rise of international communication and the development of technologies (Online 2).

The pharmaceutical terminology in the Latvian language has developed gradually. For example, the foundation of botany terminology was created already at the end of the 19th century and the first elaborate work on medicinal plants (*Latvijas ārstniecības stādi* (Medicinal Herbs of Latvia) by Ernests Birzmanis, the Master of Pharmacy) was published a decade later. However, during this time the language of pharmacy mostly described only collecting and applying medicinal plants.

After Latvia gained its independence in 1918, the need for elaborate pharmaceutical terminology spiralled rapidly since there were many different areas that required it (Baltiņš, n. d.). One of the cornerstones of the development was the creation of the pharmacy magazine *Latvijas Farmaceitu Žurnāls* in 1923 which played a significant role in the advancement of terminology. It explored both scientific and professional issues; however, the most significant amount of articles was devoted to the history of pharmacy. The magazine was published monthly in Riga by the union of pharmacists called *Latvijas Farmaceitu savienība* (later renamed to *Latvijas Farmaceitu biedrība*) until 1940. The first editor of the magazine was Dāvis Blūmentāls who published altogether about 23 articles in it (Online 3). By contrast, Baltiņš (n. d.) notes that many articles which were also published in this magazine very often explored topics such as forensic analyses, chemistry or industrial microbiology and others which were all only in partial relation to pharmacy.

More importantly, the development of a persistent pharmaceutical terminology was quite a challenging process as a great deal of time was spent on designing the *Latvian pharmacopoeia*. The professor of the University of Latvia, Jānis Maizīte, began work on the *pharmacopoeia* in 1923 and 17 years later, in 1940, it was finished (see Figure 3.2).

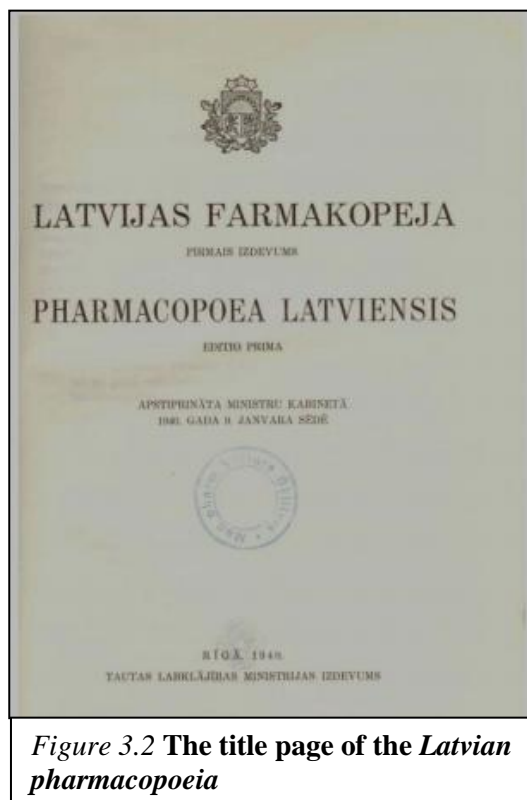


Figure 3.2 The title page of the Latvian pharmacopoeia

With the help of special committees which were created by Maizīte information on natural and chemical medicines as well as pharmacology was compiled in the process of making the *pharmacopoeia*. It was divided into three sections:

- 1) General information (standards, measures, descriptions of solutions and reagents, drawings of equipment and containers etc.);
- 2) Special information (monographs arranged in alphabetical order by their names in Latin, standards for their strength etc.);
- 3) Appendices and tables (medicines in the A and B lists, the specific gravity of solutions etc.).

Additionally, six years later, in 1946, after the *Latvian pharmacopoeia* was finished, Maizīte wrote a textbook introducing practical pharmacy which has remained the only book on drug technology even today (Online 4). Although, there were not many textbooks in relation to pharmacy published at that time, the terminology of pharmacy was still being advanced on account of pharmacology books that were being printed as well as the lecturers of Faculty of Pharmacy who prepared documents and texts regarding the information on medicinal plants (Baltiņš, n. d.).

3.2. Formation of Pharmacy Terminology

So far the historical development of the pharmacy related texts has been viewed. Subsequently, the formation of terminology is to be analyzed. Initially, Shtun (2007) states that the pharmaceutical terminology can be referred to as a compilation of specific terms. Pharmacy generally relates to the usage and production of pharmaceuticals with the origin of flora and fauna as well as minerals and those of synthetic origin. Baltiņš (n. d.) continues by identifying three crucial factors according to which usually any new pharmacy related terminology is created:

1. Any change that occurs in the pharmacy industry which calls for appropriate terms for new concepts;
2. The exchange of information on an international level which requires the compatibility of the terminology;
3. The growth of the English language overall influence in the world.

Baltiņš (n. d.) mentions that there are two possible models of establishing new terminology. Primarily, the most common choice of terminology lies in those terms which are specifically required in a document (for example, instructions for use of medicines etc.) or to be able to express an idea in a scientific document. Nowadays, it is most often that equivalent terms in other languages are sought out to substitute the ones that are in a text at hand. The second probable model of establishing new terminology is systematic exploration of the basic terms of every specific subject field. This can aid in clarifying the terms that already exist as well as discovering which concepts still lack particular terms. Amoliņš and Skujiņa (2004) continue by saying that the frequent need for new terms simultaneously causes a variety of uncertainty in spelling.

However, Shtun (2007) emphasizes specifically the principal part of the terminology which consists of forming the names of various pharmaceuticals; therefore, it is believed that there should be several different guidelines for creating names of certain pharmaceuticals.

The guidelines are meant for such pharmaceuticals as (and more):

- 1) **Pharmaceutical drugs** (lat. *medicamentum*) – substances with the purpose of healing, prophylaxis or diagnostics.

For example: *anti-allergic drugs, antihistamine, cancer drugs, fertility drugs, pain relief drugs etc.*

- 2) **Medical substances** (lat. *materia medica*) – individual chemical compounds or biological substances.
For example: *fluoride, hydrogen peroxide, heparin, erythromycin* etc.
- 3) **Herbal substances** – herbal substances used specifically in medicine.
For example: *echinacea, ginkgo biloba, glucosamine, kava, melatonin* etc.
- 4) **Medical compounds** (lat. *praeparatum pharmaceutical*) – used in a particular form of medicine.
For example: *cannabigerol* and *cannabinol* (found in cannabis plant), *chloroindazole (CLI), oxabicycloheptene sulfonate* etc.
- 5) **Active ingredients** – a component in pharmaceuticals with therapeutic, prophylactic or diagnostic properties.
For example: *ascorbic acid, pyridoxine* and *vitamin a* (in multivitamin drops), *ibuprofen* (in pain relief medicine) etc.

By and large, any pharmacy related terms are created according to international standards; consequently, these terms are written and pronounced similarly in different languages (Amoliņš, Skujiņa, 2004). By contrast it is valuable to be aware of how different terms are expressed in other languages because at times there might already be existent terms in Latvian and there is no point in searching for new ones since these are accurate enough thereof (Baltiņš, n. d.).

As a specific example, Shtun (2007) mentions trivial (lat. *trivialis*) names. Apart from some chemical compounds (for instance, salicylic acid or sodium chloride) whose names are derived from systematic chemical nomenclature, trivial names comprise a much bigger amount of pharmaceuticals in the chemical nomenclature. The trivial names denote neither the chemical composition, nor the structure and they do not correspond to any common scientific classification principles. The most significant part of the trivial names is that unlike the systematically created names, these are short and easily understandable not only by the health care professionals, but also by the patients.

Essentially, various words of ancient Greek and Latin origin are used in order to create the trivial names. For example, the substance taken from a flower, with its Latin name *Adonis vernalis*, is called *adonisidum*. What is more, there are two main methods used in creating trivial names – abbreviation and suffixation. Firstly, abbreviation is a way of creating abbreviated names for those words that are difficult to simply make shorter. To create abbreviations particular parts of different words are used and combined freely. Abbreviations

are not possible to shorten even more, since they are the shortest versions of the words that have been created.

Examples:

Formal name	Abbreviation
<i>dimexidum dimethylsulfoxide</i>	<i>dimexide</i>
<i>2-ethoxy-6,9-diaminoacridine monolactate</i>	<i>ethacridine</i>

As far as suffixation is concerned, *-in-* is the most commonly used suffix in this case. Some examples include – *digoxinum*, *chlorine* and others. In addition to this, very many names are created with the combination of abbreviation and suffixation (e.g., *theophedrinum*, *aminazinum*, *valocordinum* etc.) (Shtun, 2007).

Amoliņš and Skujiņa (2004) continue by outlining the translation of terminology. When translating pharmaceutical terms, there should always be certain rules and regulations of doing that. Further, the authors will summarize the norms and rules of translating pharmaceutical terms from a foreign language into Latvian; this information will be based on the general rules of syntax of Latvian language, spelling of already existent pharmaceutical terms. These rules are meant to decrease inconsistency and to promote a unanimous choice of new term formation; they are as follows:

- **Regarding particular letters and letter pairs**

Both English and Latvian languages are comprised by letters from the Latin alphabet; therefore, the way of writing words is generally similar, but there are still some exceptions.

1. English diphthong **ou** transfers to **u** in Latvian:

acenocoumarol – *acenokumarols*

coumazoline – *kumazolīns*

2. English diphthong **eu** in Latvian transfers:

a) to **ei** → *aceneuramic acid* — *aceneirāmskābe*

b) to **eu** → *atreleuton* – *atreleutons*

3. If a compound noun contains two sequential vowels at the point where the two parts are conjoined, both vowels are kept in the word:

heksa- + *amonijs* – *heksaamonija* *heptamolibdāts*

azo- + *imīdi* – *azoimīdi*

4. English consonant **s** between vowels transfers to **z** in Latvian:

acadesine – akadezīns

amesergide – amezergīds

✓ Except:

azaserine – azaserīns

azasetron – azasetrons

azosemide – azosemīds

5. English consonant **c** before vowels **a** and **o**, other consonants as well as at the end of a word transfers to **k** in Latvian (consonant **c** stays the same in Latvian before vowels **i** and **e**):

acadesine – akadezīns

asocainol – azokainols

bisorcic – bisorciks

bromociclen – bromociklēns

6. English consonant **x** transfers to **ks** in Latvian:

acexamic acid – aceksāmskābe

desoxycortone – dezoksikortons

7. English **qu** transfers to **h** in Latvian:

acequinoline – acehinolīns

quininate – hināts

8. English consonant pair **ph** in Latvian transfers:

a) to **f**:

desomorphine – dezomorfīns

phosphite – fosfīts

b) to **p**:

gonadotrophin – gonadotropīns

9. English consonant pair **th** transfers to **t** in Latvian:

cathine – katīns

theophyllinate – teofilināts

10. English consonant pair **ch** transfers to **h** in Latvian:

dihidrotachysterol – dihidrotahisterols

polychrome – polihroms

11. Double liquids and nasals (**ll, ll, mm, nn, ņņ, rr**) in Latvian between short vowels stay the same as in English (except traditional terms without double consonants):

cinnamate – *cinnamāts*

cinnoline – *cinnolīns*

cinnofuradione – *cinnofuradions*

✓ Except before a long vowel:

acefylline – *acefilīns*

ammonium – *amonījs*

✓ Other specific exceptions:

megallate – *megallāts*

pyrogallol – *pirogallols*

theophyllinate – *teofilināts*

✓ Other double consonants do not transfer in Latvian:

argipressin – *argipresīns*

12. English y in Latvian transfers:

a) usually to *i*:

glycine – *glicīns*

xylose – *ksiloze*

b) rarely to *ai*:

tylenol – *tailenols*

✓ Exception: *nylon* – *neilons*

- **Regarding long or short vowel sounds** (changes in the writing of vowels from SL to TL)

1. Final sounds with long vowels

a) **-ide** → **-īds**:

amesergide – *amezergīds*

amisulpride – *amisulprīds*

b) **-al** → **-āls**:

acecarbomal – *acekarbomāls*

amcinafal – *amcinafāls*

c) **-am** → **-āms/-ams**:

adinazolam – *adinazolāms*

aloracetam – *aloracetāms*

- d) *-em* → *-ēms/-ems*:
alpidem – *alpidēms*
biapenem – *biapenēms*
- e) *-im(e)* → *-īms*:
aditoprīm – *aditoprīms*
codoxīme – *kodoksīms*
- f) *-an(e)* → *-āns*:
betasizofīran – *betazizofīrāns*
butane – *butāns*
- g) *-en(e)* → *-ēns*:
acedoben – *acedobēns*
bromociclen – *bromciclēns*
- h) *-in(e)* → *-īns*:
adosopīne – *adozopīns*
amisometradīne – *amizometradīns*
- i) *-er* → *-ērs*:
carbetimer – *karbetimērs*
polymer – *polimērs*
- j) *-yry* → *-īrs*:
porphyry – *porfīrs*
- k) *-ur* → *-ūrs*:
carmofur – *karmofūrs*
- l) *-ate* → *-āts*:
acetiromate – *acetiromāts*
almasilate – *almazilāts*
- m) *-ite* → *-īts*:
adamsite – *adamsīts*
graphite – *grafīts*
- n) *-ute* → *-ūts*:
absolute – *absolūts*
- o) *-ase* → *-āze*:
anistreplase – *anistreplāze*

2. Final sounds with short vowels

- a) *-ed* → *-eds*:
dinsed – *dinseds*

- b) *-ic* → *-iks*:
bisorcic – *bisorciks*
- c) *-el* → *-els*:
clopidogrel – *klopidogrels*
- d) *-il,-yl* → *-ils*:
adrafinil – *adrafinils*
anisacril – *anizakrils*
- e) *-am* → *-ams/-āms*:
caprolaktam – *kaprolaktams*
- f) *-em* → *-ems/-ēms*:
diltiazem – *diltiazems*
- g) *-im* → *-ims/-īms*:
apricalim – *aprikalims*
bimakalim – *bimakalims*
- h) *-ast* → *-asts*:
asobamast – *azobamasts*
- i) *-stat* → *-stats*:
azalanstat – *azalanstats*
- j) *-et* → *-ets*:
deboxamet – *deboksamets*

• **Latvian terms that differ from English terms in writing**

These are the terms that have been influenced by German and Russian languages more; therefore, many terms do not correspond to the writing in English, for instance:

a)	<i>Benzol</i> (German) <i>бензол</i> (Russian)	<i>benzols</i> (Latvian)	<i>benzene</i> (English)
b)	<i>Cholesterin</i> (German) <i>холестерин</i> (Russian)	<i>holesterīns</i> (Latvian)	<i>cholesterol</i> (English)
c)	<i>Glucose</i> (German) <i>глюкоза</i> (Russian)	<i>glikoze</i> (Latvian)	<i>glucose</i> (English)
d)	<i>Toluol</i> (German) <i>толуол</i> (Russian)	<i>toluols</i> (Latvian)	<i>toluene</i> (English)
e)	<i>Sterin</i> (German) <i>стерол</i> (Russian)	<i>sterīns</i> (Latvian)	<i>sterol</i> (English)

f)	<i>Mannit</i> (German)	<i>mannīts</i> (Latvian)	<i>mannitol</i> (English)
	<i>маннит</i> (Russian)		
g)	<i>Desoxyribonuklease</i> (German)	<i>dezoksiribonukleāze</i> (Latvian)	<i>deoxyribonuclease</i> (English)
	<i>дезоксирибонуклеаза</i> (Russian)		

This chapter was devoted to the descriptions of pharmaceutical terminology and their translation; the next chapter describes the empirical part of the Master Thesis.

4. EXAMINATION OF PHARMACY RELATED TEXT TRANSLATION

In this chapter the author of the Master thesis focuses on analysing and describing certain examples of pharmacy related text translation based on her own experience. The author of the thesis was translating pharmacy related articles for a website intended specifically for pharmacists and doctors and she did that during the period of her internship. The responsibilities that the author had to take were, firstly, translating the texts, then proofreading them and afterwards also editing these texts. As far as translation is concerned, it was more than merely transferring the texts from SL to TL; specific pharmacy related vocabulary and terms had to be dealt with. Thus it required more than just translating a text from one language into another.

As mentioned prior, the informative texts that were being translated during the internship principally included pharmacy related vocabulary and terms; however, there were other topics mentioned which were all in closer or further relation to the main topic of pharmacy.

The texts that were translated were mostly texts of the informative type since their principal purpose was to present certain information to their specific target audience. These texts contain certain information and facts that are provided in a clear and concise way in order to inform and develop any subject that is mentioned (Online 5; Online 6).

4.1. Analysis of Terminology

4.1.1. Process of Rendering Terms

The author has observed that the informative texts consist of different kinds of terminology. After researching and translating informative articles that are mostly related to the field of pharmacy, a conclusion can be drawn – there are other areas of terminology present in these texts alongside the pharmaceutical terminology.

Some of the main areas are in relation to, for instance:

- **Economics**

1) **ST** – *The pharmaceutical representatives are essentially marketing drugs (..)*. (see Appendix 3)

TT – *Farmācijas nozares tirdzniecības pārstāvju galvenais uzdevums būtībā ir pārdot zāles (..)*. (see Appendix 4)

2) **ST** – *After all, revenues have been off at those companies* (..). (see Appendix 23)

TT – *Galū galā, uzņēmumu ienākumi ir samazinājušies* (..). (see Appendix 24)

• **Law**

1) **ST** – *West Chase Compounding Pharmacy filed a lawsuit* (..). (see Appendix 17)

TT – *“West Chase Compounding” aptieka iesniegusi prasību* (..). (see Appendix 18)

2) **ST** – *The pharmacy is also seeking a restraining order* (..). (see Appendix 17)

TT – *Aptieka arī vēlas, lai tiek izdots pagaidu ierobežojošs rīkojums* (..). (see Appendix 18)

• **Finance**

1) **ST** – *Lundbeck later went on to invest* (..). (see Appendix 11)

TT – *“Lundbeck” vēlāk šajā uzņēmumā ieguldīja* (..). (see Appendix 12)

2) **ST** – (..) *GP practices in one primary care trust saw low-cost statin prescribing* (..). (see Appendix 13)

TT – (..) *ģimenes ārstu praksēs vienā primārās aprūpes centrā, lētāku statīnu parakstīšana* (..). (see Appendix 14)

Moreover, very often this involves translating abbreviations which are comprised by particular terms as well:

1) **ST** – *ADR (adverse drug reactions)* (see Appendix 19)

TT – *zāļu blaknes* (see Appendix 20)

2) **ST** – *NHS (National Health Service)* (see Appendix 13)

TT – *NVD (Nacionālais veselības dienests)* (see Appendix 14)

3) **ST** – *WEB-RADR* (see Appendix 19)

TT – *WEB-RADR (zāļu blakņu atpazīšana)* (see Appendix 20)

Accordingly, to be able to render a wide variety of terms during the process of translation, the most important task for the translator is to make sure that there are many different kinds of sources for reference available to them in order to achieve the best result after rendering any text. Wright and Wright (1993) indicate that translators have the possibility to use countless types of sources for any reference they need. Whilst rendering any texts the translators are able to utilize such sources as dictionaries, thesauri, glossaries of terminology, parallel texts, background texts and more. Both authors (1993) point out some approaches a translator should implement into the process of rendering texts, such as

skimming the source text beforehand to be able to understand the gist of it or accessing parallel texts which might aid in understanding specific terms and more.

With reference to the points mentioned prior, the author of the thesis advised a wide variety of source materials whilst dealing with the rendition of terms. First and foremost, various term bases were accessed in the process – such as dictionaries, thesauri and some glossaries, all of those available mostly online. Some of the examples include: <http://glosbe.com>, <http://termini.lza.lv>, <http://eurotermbank.com>, <http://neslimo.lv>, <http://termini.vvc.gov.lv> and specific glossaries provided by the editor of the pharmacy portal which the author of the thesis worked for during the period of her internship; apart from the named ones, there were many more sources accessible. These resources are valuable since they provide explanations of terminology and help understanding the definitions of it.

Additionally, the author used other multiple texts containing particular terms in order to help finding out more information on these terms. This was done when it did not suffice with only knowing the definition of a term or having the description of it; these texts presented better understanding of the terms when it was difficult to choose the most relevant rendition of a term. One of the examples where this approach was applied is for the term *adherence*. Initially, the dictionary states that *adherence* is “the action of continuing to obey a rule, law, agreement etc.” (MacMillan English Dictionary). In one of the texts which was used, the word *adherence* is explained in the following way: “medication *adherence* means sticking firmly to a regimen – taking medicines every day and exactly as prescribed” (*Medication Adherence*, available from: <https://aidsinfo.nih.gov/>); in another one it is stated that there are “the three components of medication *adherence*: initiation, implementation, and persistence with medication taking” (*Patient Adherence – 50% of patients don’t take their medicine properly*, available from: <http://www.efpia.eu/>). Both sources provide a general description of what *adherence* is in relation to which also corresponds to the definition from the dictionary to a certain extent. The next step here would be to find the most appropriate translation from the SL into the TL. It could not have been possible without the comparison of these additional texts.

Overall, it might require the translator to spend a significant amount of time exploring various resources; regardless, if the translator wants the best possible result, they should consult a variety of sources in order to compare any descriptions, definitions or even already previously translated words.

4.1.2. Seeking the Most Relevant Terms

To continue the notion that was discussed before, the author of the thesis holds the view that finding the most appropriate and relevant terms in every translated text it is not enough to merely be aware of the possibilities of referring to certain sources. After the translator has found the best way to enable the process of translation, rendering specific terms becomes the most significant action in the entire process. Some terms may be easy to translate since they do not carry several meanings; however, some other terms might be a challenge because they could be understood in various ways. Further, the author of the thesis will look at particular examples when more in-depth analysis of a term should be applied in order to translate it successfully.

The term *pharmacy* appears throughout the paper and it can be seen as one of the main terms of the whole thesis.

Here are some example sentences of this term used in different ways:

- 1) **ST** – *...however, 85% of these ADRs, almost all reported by physicians, are classified as serious," says Professor Ebba Holme Hansen from the Department of **Pharmacy**, University of Copenhagen. (see Appendix 1)*

TT – *...tomēr 85% gadījumu ārstu novērotās blaknes tikušas atzītas par nopietnām," secina Kopenhāģenas universitātes **Farmācijas** fakultātes pasniedzēja Eba Holme Hansena. (see Appendix 2)*

- 2) **ST** – *While some pharmacies have their drugs stolen by robbers, a **pharmacy** in Tampa, Florida, had its drugs taken by the Drug Enforcement Administration (DEA). (see Appendix 17)*

TT – *Kaut arī dažu aptieku zāles nonāk zagļu rokās, Floridas pilsētā Tampā Narkotiku apkarošanas aģentūra (DEA) kādai **aptiekai** konfiscējusi visas zāles. (see Appendix 18)*

In the first example the word *pharmacy* acts as a part of a proper noun and it is translated as *farmācija*. The second example shows that the word *pharmacy* is translated as *aptieka*. Both examples mean that the translator cannot simply render the particular term using the first meaning that appears in the dictionary (*farmācija*). The translator must read the original text and have an understanding of it as a whole rather than simply using the method of word-for-word translation or the meaning could be understood from context. Another

important point to discuss is that in the second example the word *pharmacy* is of the American English variation which means that the translator should also research some background information in order to be able to successfully render this term.

3) **ST** – *Both authorities and **pharmaceutical** companies have a duty to report information about ADRs to the database, which provides new knowledge about unknown and serious ADRs.* (see Appendix 1)

TT – *Gan atbildīgajām institūcijām, gan **farmācijas** uzņēmumiem ir pienākums iesniegt informāciju par zāļu blaknēm šajā datubāzē, kas nodrošina arvien jaunu informāciju par vēl neiepazītām un nopietnām blaknēm.* (see Appendix 2)

The author would like to draw the attention towards example No.3 and more specifically to the rendition of the TT. The word *farmācija* which was previously rendered as *pharmacy* appears as *pharmaceutical* in the ST. Because of this the author believes that the translator must be extremely careful when translating such terms; in order to render this sentence correctly, the translator should compare the descriptions and definitions of the word *pharmaceutical* in several sources and only then decide upon the most relevant translation in this case.

The next examples will include three terms with similar meanings – *medicine*, *drugs* and *medication*; nonetheless, all three of them have been rendered in various ways.

4) **ST** – *Adverse drug reactions in children following use of asthma **medications**.* (see Appendix 1)

TT – *Bērniem novēro smagākas blaknes, lietojot **medikamentus** astmas ārstēšanai.* (see Appendix 2)

5) **ST** – *Only half of patients take their **medications** as prescribed.* (see Appendix 15)

TT – *Tikai puse pacientu **zāles** lieto atbilstoši norādījumiem.* (see Appendix 16)

These two examples contain the term *medication* translated in two different ways. According to the Macmillan dictionary, *medication* means “a drug that you take to treat or cure an illness”. The author of the thesis considers both *zāles* and *medikamenti* to be appropriate and relevant in this case since they seem interchangeable; also, they correspond to the explanation mentioned in the dictionary. The only thing that changes when using either

one or the other translation is the notion that is slightly different within a certain context; thus, the translator is able to choose the variant which they find the most suitable in this instance.

6) **ST** – *"The pharmaceutical representatives are essentially marketing **drugs**, and what we're after is doctors deciding which **drug** is best based on the best evidence...* (see Appendix 3)

TT – *"Farmācijas nozares tirdzniecības pārstāvju galvenais uzdevums būtībā ir pārdot **zāles**, tomēr mums ir svarīgi, lai ārsti izlemtu, kuras **zāles** ir labākās, balstoties uz vislabākajiem rezultātiem..."* (see Appendix 4)

This example shows the usage of the term *drug*. This term in itself has two principal meanings; the first one is "a narcotic substance" and the second one is "a healing substance", according to the Macmillan dictionary (here it is intended to mean "a healing substance"). It is important to consider the fact that this might not be the case where the meaning is easily misunderstood; nonetheless, since this concerns particularly pharmacy related texts, more complex texts might cause more struggle for the translator in distinguishing the correct meaning, especially if it happens so that the same term carries both meanings in the same text. In order to understand which meaning is actually intended, the translator must, firstly, skim the text to get the main idea of it and then it is possible to distinguish which is the meaning that is meant to appear in the text.

7) **ST** – *Germany has come top of a new international league table in terms of access to **medicines** for patient organisations.* (see Appendix 5)

TT – *Vācija ir ieņēmusi augstāko vietu jaunajā starptautiskā mēroga sarakstā attiecībā uz **zāļu** pieejamību pacientu organizācijām.* (see Appendix 6)

This example shows how the word *medicines* can possibly have two meanings. Here *medicines* is rendered as *zāles*; in this case the author would like to point out that it could be possible to use also the word *medikamenti* in the TT (referring back to the examples with the word *medication*) and the entire translation would still be acceptable. It would most likely depend on the personal choice of the translator or, for example, possibly the decision that an editor could make.

For such examples as aforementioned, the translator should consult several dictionaries first to be able to compare the meanings with one another; furthermore, particular glossaries should be used to check whether there are not any situations when only a certain

translation would be appropriate (for example, if the requirements of a translation company state so).

The next examples concern the term *prescribe*; in English only one term is used the entire time, but in Latvian there might be meaningful differences as to how the work is translated.

- 8) **ST** – *A new report says that around 20% of mainstream clinical practice brings no benefit to patients and that wasted **prescribed** medicines cost around £300m a year.* (see Appendix 13)

TT – *Jaunākās ziņas liecina, ka, apmēram, 20% vispārējās klīniskās prakses nesniedz nekādu ieguvumu pacientiem, un neizlietotās **parakstītās** zāles izmaksā aptuveni 300 miljonus mārciņu (375 miljonus eiro) gadā.* (see Appendix 14)

- 9) **ST** – *If people take medications **prescribed** to them, they usually get better.* (see Appendix 15)

TT – *Kad cilvēki lieto tiem **parakstītās** zāles, viņi parasti atveseļojas.* (see Appendix 16)

These two examples show that the word *prescribed* is translated as *parakstīts*, with the meaning that the doctor has told the patient what kind of medicines should be taken.

- 10) **ST** – *Infants under one year of age are **prescribed** asthma medications as cough medicine, as no alternative treatments are available for very young children.* (see Appendix 1)

TT – *Zīdaiņiem, kas nav sasnieguši viena gada vecumu, astmas medikamenti tiek **izrakstīti** klepus ārstēšanai, jo nav pieejami nekādi cita veida ārstēšanas līdzekļi pavisam maziem bērniem.* (see Appendix 2)

This example shows how the word *prescribed* is translated differently in this particular case. Even though, in some of the examples mentioned prior the terms used in the TT could be interchangeable, the author of the thesis maintains that here the variants used in the TT cannot be interchanged. There is a clear difference between the rendition *parakstīts* and *izrakstīts*, according to the State Agency of Medicines of Latvia. In the first two examples the term refers to medicines that a doctor advises a patient to take. If the TT carries this meaning, the term should be translated appropriately. The third example refers to prescriptions that a

doctor writes for their patients; prescription medicines cannot be bought without a prescription from the doctors. The author wants to note that in this example the TT does not contain the term *prescription*; however, the meaning can be understood from the context. In a particular case like this one, a translator ought to read the original text thoroughly and only then they should consider translating it.

The next example is with the regard to the term *batch*.

11) **ST** – *There will always be a slight, but not medically important, level of natural variability just as there is for one **batch** of brand name drug compared to the next **batch** of brand name product.*

TT – *Vienmēr pastāv iespēja, ka var būt nelielas, bet medicīniski nenozīmīgas dabiskas atšķirības, tieši tāpat kā atšķiras viena oriģinālzaļu **sērija** no citas šo pašu zaļu **sērijas**.*

In this example the term *batch* does not carry its primary meaning in the TT that states it being “an amount of a food that is prepared or baked at one time” (MacMillan English dictionary); it is not even close. In order to render such a term, a translator needs to pay careful attention to the context in the ST and then refer to several dictionaries and thesauri to find the most appropriate variant. The author of this thesis declares that in the case of misunderstanding the correct meaning of the term *batch* and choosing an incorrect term for translation into the TL, the entire idea of the ST might be lost. This is such a case where merely one word changes almost everything; thus a translator must be very accurate.

4.2. Translation Methods Applied for Translating Informative Articles

The author of the Master thesis strongly believes that before translating any text the translator’s main responsibility is to evaluate the text beforehand. This implies establishing the type and function of the text in order to choose the relevant methods of translation for it afterwards. Moreover, there might sometimes be particular requirements regarding the translation of certain texts; these are mostly in relation to translating different kinds of terminology. All in all, an experienced and professional translator ought to be certain about their choices when identifying and applying the most appropriate methods of translation which would guarantee a precise and cohesive rendition as a result.

4.2.1. Transcription

Transcription generally means rendering the sounds of the letters from the SL into the TL. This is usually done by transcribing sounds of the TL words according to the phonological system of the TL and it cannot be done based on the phonological system of the SL since the pronunciation might result as imprecise (Online 7).

The texts that were translated contained a variety of proper nouns; in this case they were mostly personal names. Almost every name was of different origin; therefore, it required particular background knowledge on the according phonological system of specific languages.

Here are some of the examples:

1) **ST** – ...said lead researcher **Robby Nieuwlaat**...

TT – ...izteicies **Robijs Niulāts**...

In relation to this example, the part that takes more effort is the surname which requires the knowledge of its linguistic origin for the translator to manage the task at hand. The word *Nieuwlaat* has originated in Netherlands and is quite a common surname there, according to recent data (Online 8).

2) **ST** – Then there's Viehbacher's predecessor at Sanofi, **Gerard Le Fur**...

TT – Arī Vībahera priekštecis **Žerārs Lefīrs**...

This name and surname is of French origin (Online 8) and it requires referring to the phonological system of the French language in order to transcribe these words. Since French is much different from Latvian in writing and pronunciation, the examination of the phonological sound and letter chart needs to be thorough.

3) **ST** – Together with Professor **Lise Aagaard**...

TT – Kopā ar Dienviddānijas universitātes pasniedzēju **Līzi Ogāru**...

Both of these words are of Dutch origin (Online 8) and the phonological system of Dutch ought to be referred to.

The principal problem that the translator might face regarding this translation method is the possible misinterpretation in relation to the background information. It means that, if a

translator commits an error and misinterprets the origins of any word that is given, the rendition could most likely be faulty in the end.

4.2.2. Transference

This translation method is for when the translator is to decide whether they should simply transfer a word or a phrase from the SL into the TL without translating it at all. Usually this method would be used for transferring, for instance, geographical names, names of institutions, street names etc (Online 9).

There was a significant amount of certain words in the translated texts that were transferred from the SL into the TL without rendering them. In this particular case, those were mainly names of companies or establishments.

Here are some of the examples:

- 1) **ST** – *Researchers doing a review for the international **Cochrane Library** for health information...*

TT – *Veicot veselības informācijas starptautisko datubāzu “**Cochrane Library**” pārskatu, pētnieki...*

- 2) **ST** – ***Harris Health System** President and CEO George V. Masi...*

TT – *“**Harris Health System**” slimnīcas prezidents un ģenerāldirektors Džordžs V. Masi...*

For these examples and many more that can be found in the texts there was one specific thing in common that the author of this thesis would like to emphasize. The translator must be aware of the meaning that each of these transferrable phrases carries. It is essentially the translator's responsibility to decide what kind of information the ST is providing with each phrase. In this case, to make the translation clearer and more understandable, the translator should add an apposition before the transferred phrase which describes it, for instance:

- 3) **ST** – *...has been published in the **International Journal of Clinical Pharmacy**.*

TT – *...publicēti žurnālā “**International Journal of Clinical Pharmacy**”.*

Here the apposition “žurnālā” helps the reader to understand what the main idea of this is and the translator has carried the message across correctly thereof.

4.2.3. Literal Translation

Literal translation is fundamentally the rendition of a text where words are translated from the SL to the TL one word at a time with or without transferring the sense of the original text. The word order of a translated text is adjusted to the TL; however, the words as such are translated directly from the SL (Newmark, 1987).

Here are some of the examples:

- 1) **ST** – ... *lead researcher Robby Nieuwlaat of the Department of Clinical Epidemiology and Biostatistics of the Michael G. DeGroot School of Medicine at McMaster University.*
TT – ...*Robijs Niulāts, Makmāstera universitātes Maikla Degrūta medicīnas skolas Klīniskās epidemioloģijas un bioloģiskās statistikas departamenta galvenais pētnieks.*

- 2) **ST** – ...*says a report by the Academy of Medical Royal Colleges.*
TT – ...*tā ziņo Karaliskā Medicīnas koledžu akadēmija.*

- 3) **ST** – *David Branford, chairman of the Royal Pharmaceutical Society’s English Pharmacy Board...*
TT – *Lielbritānijas Karaliskās farmaceitu biedrības Anglijas Farmācijas padomes vadītājs Deivids Brenfords...*

As far as this particular case is concerned, the texts that were translated were mostly comprised of names of establishments and companies. Regarding this, the main struggle for the translator is arranging the words in the correct order in the TT, so that it sounds natural to the reader. When translating words from English into Latvian it is more challenging for longer names, since the translator has to be aware of using the correct word endings as well as word capitalization and some words even need to be transcribed. Thus, it is a lot to take into consideration which makes the translator’s job more complex.

4.2.4. Transposition

Broadly speaking, transposition refers to the grammatical changes that occur in translating texts from the SL into the TL. On top of that, **four types of grammatical change** can be distinguished, according to Newmark (1991).

The **first type** is connected with separate term formation and their position in a sentence. For example, particular words in the SL might be either singular or plural and the same words translated into the TL are accordingly the other way around.

Here are a few examples:

1) **ST** – ...*needed evidence*...

TT – ...*ir vajadzīgi pierādījumi*...

2) **ST** – ...*through reducing waste*...

TT – ...*samazinot medicīnisko atkritumu daudzumu*...

In these two examples it is clearly shown that the examples of the ST contain uncountable nouns, whereas the examples of the TT are countable.

Subsequently, the **second type** of transposition is usually applied when the TL does not possess the same grammatical structures as the SL. If this occurs, the translator searches for the closest possible options that aid in conveying the meaning of the ST (Zakhir, 2008).

Some of the examples include:

3) **ST** – ...*a large proportion of cancer patient groups find access to medicines to be a problem*...

TT – ...*liela daļa vēža pacientu grupu uzskata, ka zāļu pieejamība sagādā problēmas*.

In this example the original does not contain a subordinate clause which is necessary in the TT in order to carry the same meaning across as in the ST. Furthermore, what can be expressed with one word in the ST (“*find*”), has to be expressed in a few words (“*uzskata, ka* (...) *sagādā*”) in the TT for the idea to stay the same.

4) **ST** – *The agents also gave pharmacy employees a letter full of inaccuracies, according to the pharmacy’s restraining order filing.*

TT – *Vadoties pēc ierobežojošā rīkojuma datiem, aptiekas darbinieki no DEA pārstāvjiem saņēma arī vēstuli, kurā bija ļoti daudz neprecizitāšu.*

This example is quite similar to the previous one. Here the subordinate clause is used once again; although, the word order has changed quite immensely in the TT. Another interesting point to consider is that the choice of words in the ST differs from the TT.

This part of the example shows it clearly:

ST – *agents (...) gave pharmacy employees a letter*

TT – *aptiekas darbinieki (...) saņēma arī vēstuli*

In the ST the main focus is on the agents who are giving the letter; however, in the TT the focus is directed to the pharmacy employees who receive the letter. There are two different verbs to describe the situation, but the meaning has stayed the same.

5) **ST** – *His departure, announced by Lundbeck on 24 November 2014, follows his failure to tell the board...*

TT – *24. novembrī “Lundbeck” paziņoja par Vīnberga atkāpšanos no amata, jo viņš nebija informējis uzņēmuma valdi...*

The subordinate clause is used in this example of the TT as well. The author of the thesis observes that the TT would not make any sense without the clause, since in this instance it would be impossible to translate the word “follows” in any other way without losing the original meaning. Also, similarly to the example described prior, the word order of the ST deviates in the TT.

The **third type** of transposition is defined by Newmark (1991) as “the one where literal translation is grammatically possible, but may not accord with the natural usage in the TL”. That is the reason why this type provides a variety of possibilities to the translator.

Lastly, the **fourth type** of transposition is normally applied when a lexical gap in the ST is replaced by a grammatical structure in the TT. This compensates for the lack of a lexical unit in the ST (Zakhir, 2008).

For example:

6) **ST** – *And the number?*

TT – *Kāds īsti **bija** šis skaitlis?*

7) **ST** – *As to the latter?*

TT – *Un kā **būs** ar pēdējo iespēju?*

It is clearly shown in these examples that the lack of a verb in the ST is compensated by a verb in a certain tense in the TT. If one were to take out the verbs from the TT sentences, they would no longer make sense. On the other hand, the TT sentences could be changed by removing some other words and using others instead, but then it would not be the same sentence anymore.

By and large, transposition is entirely in connection with the deviation in grammatical constructions in whilst translating. This method is most common among translators because it offers a lot of variety in terms of possibilities that aid in avoiding any words that cannot be translated (Zakhir, 2008).

4.2.5. Cultural Equivalence

This method of rendering strives for approximate translation of cultural words in the SL into the closest possible cultural equivalents in the TL. Despite everything, the probability to use these cultural equivalents is very limited (Online 7). The author of the thesis would like to add that cultural equivalence is a rarely used approach of translating pharmacy related informative articles; nevertheless, it was possible to utilize it in this particular case.

For example:

1) **ST** – *...detectives suspect **romantic advances** were made prior...*

TT – *...izmeklēšanas birojs pieņem, ka pirms šī notikuma abiem bijušas **romantiskas attiecības**.*

By definition, *romantic advances* means “an attempt to start a sexual or romantic relationship with someone”, according to Cambridge dictionary. On the other hand, the term *attiecības* is explained as “regular, definite personal liaisons” in Latvian (by <http://www.tezaurs.lv>). Hence, it can be stated that the phrases in the ST and in the TT differ

in concept. In the ST *romantic advances* does not carry the meaning of being in a relationship, but in the TT the phrase *romantiskas attiecības* does.

2) **ST** – *The pharmacy is also seeking a **restraining order**...*

TT – *Aptieka arī vēlas, lai tiek izdots pagaidu **ierobežojošs rīkojums**...*

Here the TT meaning of the highlighted phrase is partially corresponding to its ST counterpart. By definition, a *restraining order* generally means a document issued by court forbidding a specific type of action until a judge has made any kind of decision regarding that, as stated in the Cambridge Dictionary. Nevertheless, the phrase “*ierobežojošs rīkojums*” bears a different meaning in Latvian which is only slightly related to the meaning in English where it refers to a notice for allowing selling or buying set amounts of financial instruments (Online 10).

3) **ST** – *A **workshop** to launch the scheme will be held...*

TT – *...notiks **seminārs** par godu šī projekta atklāšanai...*

The highlighted words in both sentences are quite close in meaning; nonetheless, there are some differences. The Cambridge Dictionary offers two different explanations for both “*seminar*” and “*workshop*” in English which already indicates that there are varieties. Both refer to a meeting of people and discussing relevant topics, but a workshop consists more of practical work rather than academic discussions unlike a seminar. The explanation for the word “*seminārs*” provided by tezaurs.lv states that it is a lesson with the participants listening to speeches and sharing their opinion as well.

4.2.6. Adaption

This is a method that can be used when it is not enough with the other methods to translate a text effectively. This method involves altering the concept or using similar words in order to translate from the SL. A translator may use adaption if they are translating a certain situation described in the ST with different lexical units; these could be, for instance, proverbs that need to be translated. Another possibility to use adaption is for translating into the TL in a particular way, with the translation similar to the ST in terms of the idea; this can

work in a situation where particular lexical units do not exist similarly in both languages (Online 7).

Here are some examples:

1) **ST** – ...*cost around £300m a year...*

TT – ...*izmaksā aptuveni 300 miljonus mārciņu (375 miljonus eiro) gadā...*

In this example the currency is translated accordingly which is done so that the TT readers would understand the specific idea of the text easier and faster.

2) **ST** – ...*he'll be out of luck...*

TT – ...*Vībaheram klāsies plāni...*

3) **ST** – *A company like Pfizer can whack a big unit...*

TT – *Tāds uzņēmums kā "Pfizer" var atbrīvoties no ievērojamas sava uzņēmuma daļas...*

These two examples are the cases of translating proverbs. Regarding this, the translator should have specific background knowledge of a variety of proverbs in the TL in order to be able to find the most relevant ones. It is worth mentioning that example No.3 contains an expression in the ST, but in the TT there is no expression. This is because there was not a better way to express the idea shortly enough.

This chapter was devoted to the empirical part of the Master thesis and explored pharmacy related text translation with the analysis of terminology, focusing on ways of rendering terms as well as the translation methods that were applied for translating terms.

CONCLUSIONS

In the present Master thesis “Peculiarities in Translation of Pharmacy Related Texts” the literature research has been done, the theoretical part as well as the empirical part has been written and the texts have been translated and analysed by the author; this was done in order to achieve the goal of the thesis which was to research the characteristics of the translation of pharmacy related informative texts.

Furthermore, it is important to understand that the necessity for any translator is to start with the basics at the very beginning; in other words, the first thing to achieve is the understanding of the theory of translation in combination with the definitions, methods, text types, the historical development of terminology formation and the role of a translator in the process. Only after that can the translator move towards more in-depth areas, for example, the specifics of pharmacy related texts and texts in relation to LSP.

Ultimately, keeping all of these points in mind, the author has come to certain conclusions. The first and foremost thing that the translator has to be certain of before translating any text is the availability of various source materials for reference. There might be countless possibilities for a translator, but one should choose the most relevant sources for any specific case, such as, dictionaries, thesauri or glossaries etc. Additionally, reading divergent parallel texts would aid when merely definitions from dictionaries do not suffice.

As regards finding the most relevant terms that are appropriate in the context of a particular text, the translator should perform in-depth analysis of said terms, if certain terms appear to be challenging since they might carry various meanings initially. In other words, the translator ought to read the ST thoroughly before deciding on the way of translating it; there should also be some background information research done to be able to successfully render any terms. As a matter of fact, at times the translator is the one who decides upon the correct way of translating a term, provided that there is a situation where two terms could be used in the place of each other randomly without hindering the meaning.

At the beginning of her research, the author of the thesis established two research questions which were resolved gradually throughout the thesis. As the author had to translate informative articles for a website intended for pharmacists and doctors during her internship, she made several observations regarding such texts. The texts were of the informative function and they were also mostly comprised by pharmaceutical terminology; despite that, other areas of terminology were present in the texts, for instance, economics, law, finance and others. This meant that several areas of terminology had to be covered simultaneously which

was sometimes challenging. On top of that, these texts should be available to and be understood by everyone – either those are specialists or the members of the general audience and patients. By having more professional translators who are also specialists in this particular area, the message would be carried across to everyone more successfully and more efficiently.

In order to translate such texts several methods of translation were applied during the process of rendition and in this particular case those were – transcription, transference, literal translation, transposition, cultural equivalence and adaption. The transcription method was used rather often since a variety of people's names were mentioned in many of the articles. To use this method, the translator should be aware of the phonetic specifics of any language that would become a SL. Next, the transference method was used rather often as well when transferring the names of companies or establishments from the SL to the TL. These two methods did not seem as challenging as some of the others that were used. When using the literal translation method, for instance, it is required to be aware of the sense of the TL since the elements from the SL are transferred and adjusted to the TL. Transposition, on the other hand, is focused on changing the grammatical structures when translating into the TL which means that the grammatical structures of the SL will not be transferred directly to the TL; necessary changes are to be made for the translation to flow naturally. Next, one of the methods which was used was the cultural equivalence. This is not a common method used in translating pharmacy related texts; however, it worked in this particular case, since informative articles needed to be translated. The author of the thesis assumes that this might be an occasionally used method for translating any other pharmacy related informative texts, but it would not concern texts purely comprised of pharmaceutical terminology. Lastly, adaption was also used as a method of translation and the author believes that since these were informative articles, such method could be used quite frequently when translating such texts. What is more, certain grammar and punctuation rules had to be followed as well, so that the translation as a result would seem as close as possible to the natural flow of the TL.

Having all the aforementioned points in mind, the author of the Master thesis concludes that more exploration on this topic should be done; thus, significantly more professional translators could specialise in translating pharmacy related informative articles in order to get the best possible results and the most precise translations.

THESES

1. There are two core aims for translation – firstly, to transfer a text from SL to TL as precisely as it is possible and, secondly, to produce a particular text that cannot be recognised as a translation at all.
2. A translator is to make sure that there is a wide variety of sources for reference available to them in order to achieve the best result after rendering any text.
3. One of the most significant features of medical translation is terminology since the language of medicine is comprised of terms with the Greek and Latin origin.
4. The Latvian medical terminology has been greatly influenced by the German, Russian and English languages throughout the time.
5. Four general categories of medical text genres can be distinguished – for research (outlining the findings), for professional purposes (day to day work), for education (teaching and learning) and for commercial purposes (marketing products).
6. Medical and pharmaceutical translation are one of the most challenging areas of translation where any errors may lead to severe consequences.
7. There are three crucial factors that determine the creation of any new pharmacy related terminology – changes in the pharmacy industry, exchange of information and the development of the English language.
8. There is a scarce number of studies exploring the use of English in pharmacy related texts which normally appears only as part of other type of texts much more generally, contrary to English in medical texts.
9. The Latvian pharmaceutical terminology was most significantly developed with the pharmacy magazine *Latvijas Farmaceitu Žurnāls* being published and the creation of the *Latvian pharmacopoeia*.
10. Translators who work with pharmacy related texts will often need the assistance of physicians or pharmacists and that is why there is a growing demand for qualified health care professionals that would simultaneously work as translators professionally.

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APPENDICES

Appendix 1

Adverse drug reactions in children following use of asthma medications

In a new study based on EU adverse drug reaction reports, researchers at the University of Copenhagen and the University of Southern Denmark now document that children's use of asthma medications may result in serious adverse drug reactions. The risk of adverse drug reactions is not fully documented in the pre-marketing clinical trials. The new study has been published in the International Journal of Clinical Pharmacy.

Since 2007, the European Medicines Agency (EMA), an EU agency, has gathered information on patients' experiences with adverse drug reactions (ADRs) in the European ADR database, EudraVigilance. Both authorities and pharmaceutical companies have a duty to report information about ADRs to the database, which provides new knowledge about unknown and serious ADRs.

"We have studied all EU adverse drug reaction reports on asthma medications approved for - and used by - children over a five-year period (2007 to 2011). In the light of the total use of asthma medications, the number of reported ADRs were not overwhelming - a total of 774 ADR reports - however, 85% of these ADRs, almost all reported by physicians, are classified as serious," says Professor Ebba Holme Hansen from the Department of Pharmacy, University of Copenhagen. Together with Professor Lise Aagaard from the University of Southern Denmark, she carried out the new scientific study published in the International Journal of Clinical Pharmacy.

The ADR database shows a far higher share of serious ADRs than do the published studies of clinical trials in which the drugs have been tested in children and young people. "It is an interesting observation and one which health professionals should take into account when prescribing medicine to children," says Ebba Holme Hansen.

Drugs in clinical trials are generally tested in young male patients, which the researchers see as a general problem when it comes to adverse reactions in children.

"No one knows the consequences of prescribing drugs to children, who constitute a vulnerable patient group, as knowledge of ADRs in this population is very scarce. Infants under one year of age are prescribed asthma medications as cough medicine, as no alternative treatments are available for very young children. However, our study suggests that asthma medications are associated with more - and more serious - ADRs than documented by the clinical trials. Especially in the case of children," says Lise Aagaard.

Professor Ebba Holme Hansen adds: "The published clinical studies on the treatment of children with asthma medications contain very limited data about ADRs, and the most

frequently observed ADRs are shortness of breath and coughing. There are not many publicly available articles, and the ADRs mentioned in clinical studies are categorised as non-serious. From the literature, we have, however, learned that several test subjects drop out of the clinical trials due to serious ADRs - in itself a thought-provoking fact."

In addition to classic ADRs such as shortness of breath and coughing, the EU ADR reports also include psychiatric ADRs in the form of nightmares and aggression as well as skin rash. Some of the reports also suggest that patients have problems using the asthma medications, including correct inhalation technique.

"In a clinical trial, patients are provided with the assistance and guidance needed to take their medication correctly and at the right time. It is, of course, a totally different situation for sufferers who do not have immediate access to a health professional in their everyday lives. In Denmark, asthma patients can have their inhalation technique checked at pharmacies via a 'Check your inhalation' service provided free of charge by the Danish state," says Lise Aagaard.¹

¹ Available from: <http://www.worldpharmanews.com/research/2928-adverse-drug-reactions-in-children-following-use-of-asthma-medications>

Appendix 2

Bērniem novēro smagākas blaknes, lietojot medikamentus astmas ārstēšanai

Nesen veiktajā pētījumā, kas balstīts uz Eiropas Savienības (ES) ziņojumiem par zāļu blaknēm, pētnieki no Kopenhāgenas un Dienviddānijas universitātēm ir novērojuši, ka medikamentiem, ko bērni lieto astmas ārstēšanai, var rasties nopietnas blaknes. Pirmsreģistrācijas klīniskajos pētījumos zāļu blakņu rašanās risks nav pilnībā noteikts. Jaunākie pētījuma dati ir publicēti žurnālā *International Journal of Clinical Pharmacy*.

Kopš 2007. gada Eiropas Zāļu aģentūra (EMA) apkopo informāciju Eiropas zāļu blakņu datubāzē EudraVigilance par pacientu pieredzi ar zāļu blaknēm. Gan atbildīgajām institūcijām, gan farmācijas uzņēmumiem ir pienākums iesniegt informāciju par zāļu blaknēm šajā datubāzē, kas nodrošina arvien jaunu informāciju par vēl neiepazītām un nopietnām blaknēm.

“Piecu gadu laikā (no 2007. līdz 2011.gadam) mēs esam izpētījuši visos ES dokumentos pieejamos ziņojumus par blaknēm astmas medikamentiem, kas piemēroti bērniem. Ņemot vērā kopējo astmas medikamentu pielietojumu, novērotais blakņu rašanās gadījumu skaits nebija pārsteidzošs (kopumā 774 gadījumi), tomēr 85% gadījumu ārstu novērotās blaknes tikušas atzītas par nopietnām,” secina Kopenhāgenas universitātes Farmācijas fakultātes pasniedzēja Eba Holme Hansena. Kopā ar Dienviddānijas universitātes pasniedzēju Līzi Ogāru Hansena veikusi jaunu zinātnisku pētījumu, kas tika publicēts *International Journal of Clinical Pharmacy*.

EudraVigilance datubāze uzrāda daudz vairāk nopietnu blakņu, nekā tas parādās publicētos klīniskajos pētījumos, kuros zāles izmēģina bērnu un jauniešu ārstēšanā. “Tas ir interesants novērojums, un ārstiem tas būtu jāņem vērā, kad viņi izraksta zāles bērniem,” min Hansena.

“Neviens nezina, kādas būs sekas zāļu izrakstīšanai bērniem, kuri pieder neaizsargātai pacientu grupai, tāpēc, ka zināšanas par blaknēm šo pacientu ārstēšanā ir nepietiekamas. Zīdaiņiem, kas nav sasnieguši viena gada vecumu, astmas medikamenti tiek izrakstīti klepus ārstēšanai, jo nav pieejami nekādi cita veida ārstēšanas līdzekļi pavisam maziem bērniem. Par spīti tam mūsu pētījumā norādīts, ka medikamenti astmas ārstēšanai saistās ar lielāku daudzumu un daudz nopietnākām blaknēm, nekā liecina klīniskie pētījumi. It īpaši tas attiecas uz bērniem,” saka L. Ogāra.

Pasniedzēja Hansena piebilst, ka “publicētie klīniskie pētījumi bērnu ārstēšanā ar astmas medikamentiem sniedz ļoti maz informācijas par blaknēm un visbiežāk novērotās blaknes ir elpas trūkums un klepus. Par to nav daudz publiski pieejamu rakstu un blaknes, kas

pieminētas klīniskos pētījumos, netiek uzskatītas par nopietnām. Tomēr, pētot dažādu literatūru, mēs esam secinājuši, ka vairāki izmēģinājumu dalībnieki nevar piedalīties klīniskajos pētījumos, jo viņiem ir radušās nopietnas blaknes, kas pats par sevi ir pārdomas raisošs fakts”.

Papildus jau tādām labi pazīstamām blaknēm, kā elpas trūkums un klepus, ES ziņojumos arī iekļautas psihiski traucējumi murgu un agresijas formā, kā arī izsitumi uz ādas. Dažos ziņojumos minēts, ka pacientiem ir radušās problēmas, lietojot medikamentus astmas ārstēšanai, kas ietver arī pareizus ieelpošanas paņēmienus.

“Klīniskā pētījumā pacientiem sniedz viņiem nepieciešamo palīdzību un ieteikumus, lai viņi zāles varētu uzņemt atbilstoši un īstajā laikā. Protams, pavisam citādāk ir tiem, kam ikdienā nav tūlītējas iespējas sazināties ar ārstu. Dānijā astmas pacienti var pārbaudīt savu ieelpošanas paņēmieni precizitāti aptiekās ar “Check your inhalation” pakalpojuma palīdzību, ko valsts piedāvā bez maksas,” bilst Līze Ogāra.

Appendix 3

Australian docs launch anti-pharma rep campaign

When it comes to interactions between doctors and pharmaceutical companies, there's a growing desire for transparency among those concerned that reps influence prescribing habits. Just last week, the US launched a database with info from the Physician Payment Sunshine Act, detailing all pharma payments made to healthcare professionals.

But an Australian group of doctors and academics wants to take it one step further: With an aptly titled "No Advertising Please" (NAP) campaign, it's pushing to end doc-rep interactions altogether. The effort calls on doctors to make a pledge not to see drug company sales reps and display a sign outside their offices that says just that, Australia's *ABC* reports.

"The pharmaceutical representatives are essentially marketing drugs, and what we're after is doctors deciding which drug is best based on the best evidence, as opposed to their best marketing," campaigner Dr. Justin Coleman told the news service. But the way the Australian Medical Association (AMA) sees it, drug companies make valuable contributions, both monetary and otherwise, to the medical world.

"Our world revolves around education and information and the pharmaceutical companies are an important source of money for research, so every Australian will benefit from that research and pharmaceutical promotion," AMA rep Dr. Brian Morton told *ABC*.

Other objectors share some of the same views held by those who caution not to put too much stock into Sunshine Act numbers. How much influence can drug reps actually have on highly educated physicians? critics have asked. Morton, for one, called the NAP campaign "insulting to doctors" and "also rather naïve."

Yet more and more doctors, for a variety of reasons, are starting to side with NAP, putting the pressure on pharma marketers to find different ways to get their messages across. According to a recent report from ZS Associates, almost half of all doctors bar pharma reps in some way. And some studies have shown that doctors are indeed influenced by relationships with reps--enough to change their prescribing habits.²

² Available from: <http://www.fiercepharma.com/story/australian-docs-launch-anti-pharma-rep-campaign/2014-10-10>

Appendix 4

Austrālijas ārsti uzsāk kampaņu pret farmācijas nozares tirdzniecības pārstāvjiem

Kad runa ir par sadarbību starp ārstiem un farmācijas firmām, tiem, kurus satrauc tas, kā tirdzniecības pārstāvji ietekmē zāļu izrakstīšanas ieradumus, ir nepārvarama vēlme pēc pilnīgas atklātības šajā jomā. Pagājušonedēļ ASV laida klajā datubāzi ar informāciju no Ārstu samaksas nolikuma (zināms kā *Sunshine Act*), kur sīki izklāstīti visi ar farmāciju saistītie maksājumi veselības aprūpes speciālistiem.

Taču kāda austrāliešu ārstu un zinātnieku grupa vēlas spert soli tālāk, uzsākot kampaņu ar trāpīgu virsrakstu – “Nekādas reklāmas, lūdzu” (*No Advertising Please, NAP*), kuras mērķis ir pilnībā pārtraukt ārstu un tirdzniecības pārstāvju sadarbību. Tā rezultātā ārstiem ir jāapņemas pārtraukt sadarbību ar zāļu ražošanas uzņēmumu pārdošanas pārstāvjiem un ārpus saviem kabinetiem jāizvieto zīmes ar attiecīgu uzrakstu, ziņo Austrālijas TV kanāls *ABC*.

“Farmācijas nozares tirdzniecības pārstāvju galvenais uzdevums būtībā ir pārdot zāles, tomēr mums ir svarīgi, lai ārsti izlemtu, kuras zāles ir labākās, balstoties uz vislabākajiem rezultātiem, nevis visveiksmīgākajiem zāļu tirdzniecības veidiem,” ziņu dienestam pastāstīja kampaņas dalībnieks Dr. Džastins Koulmans. Taču Austrālijas Medicīnas darbinieku asociācija (*AMA*) uzskata, ka zāļu ražošanas uzņēmumi medicīnas pasaulei sniedz vērtīgus ieguldījumus, gan naudas izteiksmē, gan citos veidos.

“Mūsu pasaule veidojas ap izglītību un informāciju, un farmācijas uzņēmumi ir nozīmīgs ienākumu avots pētniecībai, tāpēc ikkatrs austrālietis gūs labumu no šāda veida pētījumiem un farmācijas nozares popularizēšanas,” *ABC* pavēstīja *AMA* pārstāvis Dr. Braiens Mortons.

Citi protestētāji domā tāpat kā tie, kas brīdina neieguldīt parāk daudz līdzekļu *Sunshine Act* nolikumā. Cik ļoti zāļu tirdzniecības pārstāvji var ietekmēt augsti izglītotus ārstus? – tā vaicājuši kritiķi. Mortons savukārt nosaucis *NAP* kampaņu par “ārstus aizvainojošu” un “arī diezgan naivu”.

Neskatoties uz to, dažādu iemeslu dēļ arvien vairāk ārstu atbalsta *NAP*, kas rada grūtības farmācijas nozares tirgotājiem atrast dažādus veidus, kā izplatīt savu informāciju. Saskaņā ar pasaulē lielākā biznesa konsultāciju uzņēmuma “*ZS Associates*” neseno ziņojumu, gandrīz puse visu ārstu kaut kādā mērā noliedz farmācijas nozares tirdzniecības pārstāvju darbību. Turklāt daži pētījumi liecina, ka attiecības ar tirdzniecības pārstāvjiem ārstus ietekmē tik ļoti, ka viņi maina savus zāļu izrakstīšanas ieradumus.

Appendix 5

Germany tops global patient table for access to medicines

Germany has come top of a new international league table in terms of access to medicines for patient organisations, with Italy and France in joint second place and the UK coming fourth.

The survey, conducted by PatientView, asked patient groups in 12 countries or regions about their ability to gain access to medicines, for example, by influencing the health technology assessment (HTA) process in their country. The fifth-best access, after that in the UK, was found in the Nordic countries, followed by Canada in sixth place.

The US and central and south America are next, in joint seventh place, followed by the Netherlands and Australasia, joint ninth, then Spain in eleventh place and finally, placed twelfth, with the worst access, is Eastern Europe.

The survey also asked patient groups representing individual diseases and conditions how able they are to influence access-to-medicines processes, and the top performers in this table are groups representing people with HIV/AIDS. Only 19% of these patient groups now regard access to medicines to be a hurdle, compared to 38% which reported that they did so in PatientView's last survey, in 2012.

Next in terms of access to medicines were groups representing patients with circulatory conditions, followed by: mental health – third place; diabetes and rheumatological – joint fourth; neurological – sixth; rare diseases and respiratory – joint seventh; cancer – ninth; endocrine – tenth; and gastrointestinal – eleventh.

HIV/AIDS groups are also the most proficient of all patient organisations; they are particularly skilled at raising awareness of the need for new treatments, and they are more ready than other types of patient groups to present themselves as a unified force, says the survey.

In contrast, a large proportion of cancer patient groups find access to medicines to be a problem, with 41% reporting this to be the case in 2014 compared with 28% in 2012. Many cancer patient groups today clearly feel unable to negotiate better access to medicines, and incapable of influencing government healthcare policies which reject the most modern cancer therapies on cost grounds. These groups are also hindered by the fragmentation of the cancer sector of the patient movement, which dilutes the public messages and campaigns of the individual – and sometimes competing – cancer patient groups, the report comments.

However, the survey's examination of which patient groups have the best relationships with government policymakers puts cancer groups in the top spot, followed by rare diseases

and gastrointestinal in joint second, and HIV/AIDS groups down in fifth place. These findings show that patient groups do not have to secure good relationships with government to get the leverage needed to influence access to medicines – in fact, the opposite can be true, says PatientView.³

³ Available from: http://www.pharmatimes.com/Article/14-09-15/Germany_tops_global_patient_table_for_access_to_medicines.aspx#ixzz3DNGcMLnN

Appendix 6

Vācija – pirmajā vietā pēc zāļu pieejamības

Vācija ir ieņēmusi augstāko vietu jaunajā starptautiskā mēroga sarakstā attiecībā uz zāļu pieejamību pacientu organizācijām. Itālija un Francija šajā sarakstā dala otro vietu, un Lielbritānija ierindojas ceturtajā vietā.

Pētījumā, ko veikusi PatientView sistēma, aptaujātas pacientu grupas no 12 valstīm vai reģioniem par viņu iespējām piekļūt zālēm, piemēram, ietekmējot medicīnas tehnoloģiju novērtēšanas (MTN) procesu savā valstī. Piektajā vietā sarakstā atrodas Ziemeļvalstis, un tām seko Kanāda, kas ierindojas sestajā vietā.

Nākamās sarakstā ir ASV, Centrālamerika un Dienvidamerika – visas ierindojas septītajā vietā –, tālāk seko Nīderlande, kā arī Austrālāzija jeb Austrālija un Okeānija kā devītās, pēc tam 11.vietā atrodas Spānija un visbeidzot, 12.vietā, Austrumeiropa, kurā zāles ir visgrūtāk pieejamas.

Pētījumā arī tika aptaujātas pacientu grupas ar dažādām slimībām par to, cik lielā mērā viņi spēj ietekmēt zāļu pieejamības plūsmu, savukārt pašā saraksta virsotnē atrodas tās grupas, kuras pārstāv pacienti ar HIV un AIDS. Šobrīd tikai 19% pacientu no šīs grupas ir ļoti grūti piekļūt zālēm, salīdzinājumā ar 2012. gadā veikto PatientView pētījumu, kad lielas grūtības bija 38% pacientu.

Kā nākamās sarakstā ir pacientu grupas, kuras pārstāv pacienti ar asinsrites traucējumiem, tālāk, trešajā vietā, seko pacienti ar garīgās veselības traucējumiem, ar diabētu slimie pacienti un pacienti ar reimatiska rakstura problēmām ierindojas ceturtajā vietā, pacienti ar neiroloģiskām saslimšanām – sestajā vietā, pacienti ar retām slimībām un elpošanas traucējumiem – septītajā vietā, ar vēzi slimie pacienti – devītajā vietā, pacienti ar endokrīnām saslimšanām – desmitajā vietā un visbeidzot pacienti ar kuņģa-zarnu trakta saslimšanām – 11. vietā.

HIV un AIDS pacientu grupa ir arī visprasmīgākā no visām pacientu organizācijām, it īpaši saistībā ar informācijas izplatīšanu par vajadzību pēc jauniem ārstēšanas veidiem. Viņi ir arī gatavi aktīvāk nekā pārējās pacientu grupas pārstāvēt sevi kā vienots spēks, tā liecina pētījums.

Par spīti tam, liela daļa vēža pacientu grupu uzskata, ka zāļu pieejamība sagādā problēmas. Šādi 2014. gadā uzskata 41% pacientu salīdzinājumā ar 28% pacientu 2012. gadā. Daudzas vēža pacientu grupas šobrīd pavisam noteikti jūtas bezspēcīgas attiecībā uz zāļu pieejamību un nespēju ietekmēt valdības veselības aprūpes politiku, kas noraida lielāko daļu mūsdienīgās vēža ārstēšanas terapijas, pamatojoties uz izmaksām. Šīs grupas arī tiek

ierobežotas, jo ar vēzi slimo pacientu kustība ir sadrumstalota, un tas samazina publisko ziņu un kampaņu daudzumu atsevišķās – un dažreiz konkurējošās – vēža pacientu grupās, vēsta komentāri.

Tomēr pētījuma analīze par to, kurai pacientu grupai ir vislabākās attiecības ar valdības politikas veidotājiem, norāda, ka vēža slimnieku grupas ierindojas augstākajās vietās. Otrā vietā daļa pacientu ar retām slimībām un pacientu ar kuņģa-zarnu trakta saslimšanām, savukārt HIV un AIDS grupa atrodas zemāk – piektajā vietā. Šie atklājumi liecina par to, ka pacientu grupām nav nepieciešams nodrošināt labas attiecības ar valdību tikai tādēļ, lai šādā veidā radītu iespēju ietekmēt zāļu pieejamību, jo patiesībā ir tieši pretēji, min PatientView.

Appendix 7

Health professions launch *HealthyScore* app for everyone to improve their health

The world's health professions have launched an easy-to-use app to help individuals and their health professionals reduce the risk of non-communicable diseases (NCDs) – conditions which currently account for 60% of global deaths.

Called *HealthyScore*, the app was developed by the World Health Professions Alliance WHPA, with the support of the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA).

HealthyScore helps individuals rate their habits with a traffic light system. Customizable reminders support them on the road to healthier living.

The app is designed to:

1. Educate individuals on how to improve their health through positive behaviour and lifestyle changes.
2. Empower individuals to work with their health professionals to establish personal health goals and to track their progress over time.

HealthyScore is the app version of the WHPA Health Improvement Card, an important component of the WHPA NCD campaign. Four biometric indicators and four behaviour indicators provide an overview of the person's health status. The app helps individuals rate their behaviours. Behaviours in red are labelled as highly risky. Behaviours in yellow indicate caution, and those in green correspond to healthy, sustainable behaviours. The goal is to help patients gradually move their behaviours to the green area.

The *HealthyScore* app and reminders offer support to individuals and their health professionals to establish mutually agreed goals so as to improve both lifestyle/behavioural and metabolic/biometric risk factors over time. Regular use of this resource allows individuals and health professionals to develop targeted interventions to improve health and well-being.

Overall, the app helps the health community pay due attention to the inextricable link between social determinants of health and the incidence of all NCDs — extending the scope to mental and oral conditions. By focusing on a holistic approach to health, WHPA goes beyond the narrow frame of corrective NCD action and promotes a sustainable change in behaviours to achieve health. WHPA hopes this initiative will strengthen patient-health professional communication channels.

The *HealthyScore* app reminds people that health is in their own hands. ⁴

⁴ Available from: <http://www.hospitalhealthcare.com/editors-pick/hit-road-health>

Appendix 8

Veselības aprūpes speciālisti izveido aplikāciju sabiedrības veselības uzlabošanai

Pasaules veselības aprūpes speciālisti ir izveidojuši viegli izmantojamu aplikāciju, lai palīdzētu pacientiem un viņu ārstiem samazināt neinfekcijas slimību risku – tas šobrīd ir galvenais iemesls 60% nāves gadījumu visā pasaulē.

Aplikāciju *HealthyScore* izveidoja Vispasaules veselības aprūpes alianse (WHPA) sadarbībā ar Starptautisko zāļu ražotāju un asociāciju federāciju (IFPMA).

HealthyScore aplikācija palīdz pacientiem novērtēt savus paradumus pēc luksofora sistēmas principa. Pielāgojami atgādinājumi sniedz atbalstu šiem cilvēkiem ceļā uz veselīgāku dzīvesveidu.

Aplikācija ir izveidota, lai:

1. izglītotu cilvēkus par to, kā uzlabot savu veselību ar labvēlīgu paradumu ieviešanu un dzīvesveida izmaiņām,
2. dotu iespēju ikkatram sadarboties ar saviem ārstiem, lai noskaidrotu personīgos mērķus un sekotu savai izaugsmei laika gaitā.

HealthyScore aplikācija ir vienlīdzīga ar WHPA Veselības uzlabošanas karti, kas ir WHPA neinfekcijas slimību kampaņas nozīmīga sastāvdaļa. Četri biometriskie indikatori un četri paradumu indikatori sniedz pārskatu par cilvēka veselības stāvokli. Aplikācija palīdz cilvēkiem novērtēt savus ikdienas paradumus. Paradumiem, kas uzrādās sarkanā krāsā, ir augsta riska pakāpe. Paradumiem, kas uzrādās dzeltenā krāsā, ir jāpievērš uzmanība un paradumi zaļā krāsā norāda uz veselīgu, noturīgu dzīvesveidu. Galvenais mērķis ir pakāpeniski palīdzēt pacientiem savus paradumus „iekrāsot” zaļā krāsā.

HealthyScore aplikācija un atgādinājumi piedāvā atbalstu cilvēkiem un viņus ārstējošiem ārstiem, lai kopīgi vienotos un izvirzītu mērķus, kas varētu palīdzēt laika gaitā novērst gan dzīvesveida un paradumu, gan vielmaiņas un biometriskos riska faktorus. Sistemātiska šī avota izmantošana ļauj pacientiem un ārstiem attīstīt noteiktus intervences veidus, lai uzlabotu veselību un labklājību.

Kopumā aplikācija palīdz veselības aprūpes sfērā pievērst pietiekami daudz uzmanības sarežģītajai saiknei starp sociālajiem veselību noteicošajiem faktoriem un visu nelipīgo slimību biežumu – paplašinot šo loku līdz psihiskām saslimšanām un mutes dobuma slimībām. Koncentrējoties uz visaptverošu pieeju veselībai, WHPA iet ārpus šaurajiem nelipīgu slimību neitralizēšanas rāmjiem un veicina noturīgas izmaiņas ikdienas paradumos, lai iegūtu labu veselību. WHPA cer, ka šī iniciatīva stiprinās pacientu un ārstu saziņas iespējas. *HealthyScore* aplikācija cilvēkiem atgādina, ka rūpes par veselību ir tikai viņu pašu rokās.

Appendix 9

Hospital Pharmacy Staff Killed in Apparent Murder-Suicide

A suspected murder-suicide at a Texas hospital pharmacy has left a pharmacist and a pharmacy technician dead.

On the afternoon of October 22, 2014, a man shot a woman in the glassed-in work area of the Ben Taub Outpatient Pharmacy and then shot himself, according to reports from the *Houston Chronicle*. Both pharmacy staff members were pronounced dead shortly after being shot.

Police who viewed the security video stated that the man allegedly walked up behind the woman and opened fire. Houston homicide detectives suspect romantic advances were made prior to the incident.

In a statement, Harris Health System President and CEO George V. Masi said the outpatient pharmacy would remain closed until further notice.

"At this most difficult time, our thoughts and prayers are with the families of the 2 staff who lost their lives as a result of this senseless violence, as well as to every Harris Health System employee and the members of our medical staff," Masi stated.⁵

⁵ Available from: <http://www.pharmacytimes.com/news/Hospital-Pharmacy-Staff-Killed-in-Apparent-Murder-Suicide>

Appendix 10

ASV slimnīcas aptiekas darbinieks nogalina kolēģi un pēc tam nošaujas pats

Kādā Teksasas slimnīcas aptiekā divi darbinieki – farmaceits un farmaceita asistents – kļuva par slepkavības un pašnāvības upuriem.

Saskaņā ar “Houston Chronicle” sniegto informāciju, 2014. gada 22. oktobra pēcpusdienā Bena Tauba slimnīcas aptiekā kāds vīrietis nošāvis sievieti un pēc tam nošāvis pats. Abi aptiekas darbinieki īsi pēc šaušanas tika atzīti par mirušiem.

Pēc drošības kameru video noskatīšanās policijas darbinieki paziņojuši, ka vīrietis, domājams, piegājis klāt sievietei no mugurpuses un sācis šaut. Hjūstonas slepkavību izmeklēšanas birojs pieņem, ka pirms šī notikuma abiem bijušas romantiskas attiecības.

Harris Health System slimnīcas prezidents un ģenerāldirektors Džordžs V. Masi paziņojis, ka slimnīcas aptieka tiks slēgta uz nenoteiktu laiku līdz tiks sniegta jauna informācija.

“Šajā grūtajā brīdī esam kopā domās un lūgšanās ar šo divu darbinieku ģimenēm, kuri zaudēja savus tuviniekus šīs bezjēdzīgās vardarbības rezultātā. Jūtam līdzī arī ikvienam *Harris Health System* slimnīcas darbiniekam un medicīnas personālam,” izteicies Masi.

Appendix 11

Lundbeck's chief executive resigns after code of ethics breach

Ulf Wiinberg has resigned as the president and chief executive of the Danish pharmaceutical company Lundbeck with immediate effect after breaching the company's code of ethics.

His departure, announced by Lundbeck on 24 November 2014, follows his failure to tell the board that he received shares from the founder of biotech company Stratified Medical in 2013. Lundbeck later went on to invest around US\$60m in the same company.

Wiinberg apologised for his actions, which he said were unintentional, and offered his resignation, which the board accepted.

His position will be temporarily filled by the company's chairman Håkan Björklund until a successor is found.⁶

⁶ Available from: <http://www.pharmaceutical-journal.com/news-and-analysis/news-in-brief/lundbecks-chief-executive-resigns-after-code-of-ethics-breach/20067259.article>

Appendix 12

Farmācijas uzņēmuma “Lundbeck” izpilddirektors atkāpjas no amata pēc ētikas kodeksa pārkāpšanas

Dāņu farmācijas uzņēmuma “Lundbeck” prezidents un izpilddirektors Ulfs Vīnbergs nekavējoties atkāpies no amata pēc tam, kad viņš bija pārkāpis uzņēmuma ētikas kodeksu.

24. novembrī “Lundbeck” paziņoja par Vīnberga atkāpšanos no amata, jo viņš nebija informējis uzņēmuma valdi, ka 2013. gadā savā īpašumā ieguvis biotehnoloģiju uzņēmuma “Stratified Medical” dibinātāja akcijas. “Lundbeck” vēlāk šajā uzņēmumā ieguldīja, apmēram, 60 miljonus ASV dolāru (48,4 miljonus eiro).

Vīnbergs atvainojies par savu rīcību, apgalvojot, ka tā bija bez iepriekšēja nodoma, un labprātīgi atkāpies no amata, kam uzņēmuma valde arī piekrita.

Viņa vietu pagaidām ieņems uzņēmuma priekšsēdētājs Hokans Bjorklunds, līdz tiks atrasts kāds, kas varēs stāties Vīnberga vietā.

Appendix 13

NHS could save nearly £2bn through waste reduction and improved clinical practice

A new report says that around 20% of mainstream clinical practice brings no benefit to patients and that wasted prescribed medicines cost around £300m a year. The report outlines simple measures that could help create NHS savings, including generic prescribing.

Around £2bn of savings could be made in the NHS through reducing waste and improving clinical practice, says a report by the Academy of Medical Royal Colleges.

‘A doctor’s guide to cutting waste in clinical care’ published on 6 November 2014, points out that around 20% of mainstream clinical practice brings no benefit to patients and that wasted prescribed medicines cost around £300m a year.

The report outlines a series of simple measures that could help create savings, which could then be reinvested to improve care and raise standards. For example, it describes generic prescribing as a “high-value intervention with little potential waste associated”.

It also acknowledges the input of pharmacy staff. In a case study, it describes how sending pharmacy technicians to work in GP practices in one primary care trust saw low-cost statin prescribing increase from 19% to 45% within one year. Prescribing low cost statins could save the NHS £85m per year, the report suggests.

Other waste-reducing measures suggested include increasing doctors’ awareness of adverse drug reactions, which account for four in every 100 hospital bed days and cost the NHS up to £466m a year.

Ian Wilson, chairman of the British Medical Association representative body, which determines policy, said: “Where doctors are freed from unnecessary bureaucracy or poorly managed systems they are ideally placed to focus on the best use of resources and value to patients. In the face of tighter funding, doctors have played a leading role in finding ways to deliver care more efficiently, saving the NHS money while ensuring that the quality of patient care is not compromised.”

David Branford, chairman of the Royal Pharmaceutical Society’s English Pharmacy Board (EPB), says pharmacists could be commissioned to provide medicines reviews for patients, particularly those with long-term conditions or on complex medicine regimens. “Not only does this reduce medicines waste but it also improves patient adherence and quality of care,” he says.

He adds that the EPB’s current campaigns all focus on improving resource usage by maximising the potential of the pharmacist. “We would be delighted to work with either the

academy or any of the individual royal colleges to assist them with schemes that can save the NHS money through better use of medicines.”

Warwick Smith, director general of the British Generic Manufacturers’ Association, said generic prescribing already saves the NHS in England more than £12bn a year.⁷

⁷ Available from: <http://www.pharmaceutical-journal.com/news-and-analysis/news/nhs-could-save-nearly-2bn-through-waste-reduction-and-improved-clinical-practice/20067108.article>

Appendix 14

Lielbritānijā varētu ietaupīt 2 miljardus mārciņu, samazinot medicīnisko atkritumu daudzumu un uzlabojot klīnisko praksi

Jaunākās ziņas liecina, ka, apmēram, 20% vispārējās klīniskās prakses nesniedz nekādu ieguvumu pacientiem, un neizlietotās parakstītās zāles izmaksā aptuveni 300 miljonus mārciņu (375 miljonus eiro) gadā. Ziņojumā aprakstītas vienkāršas metodes, kas varētu palīdzēt Nacionālajam veselības dienestam (NVD) veidot ietaupījumus, ietverot arī patentbrīvo zāļu parakstīšanu.

NVD varētu ietaupīt aptuveni 2 miljardus mārciņu (2,5 miljardi eiro), samazinot medicīnisko atkritumu daudzumu un uzlabojot klīnisko praksi – tā ziņo Karaliskā Medicīnas koledžu akadēmija.

2014.gada 6. novembrī publicētajās „Vadlīnijās ārstam, kā samazināt medicīnisko atkritumu veidošanos klīniskajā aprūpē” norādīts, ka, apmēram, 20% vispārējās klīniskās prakses nesniedz nekādu ieguvumu pacientiem, un neizlietotās parakstītās zāles izmaksā aptuveni 300 miljonus mārciņu (375 miljonus eiro) gadā.

Ziņojumā aprakstītas vienkāršas metodes, kas varētu palīdzēt veidot ietaupījumus, ko pēc tam varētu ieguldīt veselības aprūpes uzlabošanā un tās līmeņa celšanā. Piemēram, patentbrīvo zāļu parakstīšana ir aprakstīta kā „augsta līmeņa iejaukšanās ar niecīgu iespēju rasties medicīniskajiem atkritumiem”.

Tiek pievērsta uzmanība arī farmaceitiem. Kādā gadījuma pētījumā ir aprakstīts, kā, norīkojot farmaceita asistentus darbā ģimenes ārstu praksēs vienā primārās aprūpes centrā, lētāku statīnu parakstīšana viena gada laikā pieauga no 19% līdz 45%. Izrakstot lētākus statīnus NVD varētu ietaupīt 85 miljonus mārciņu (106 miljonus eiro) gadā, vēstīts ziņojumā. Citas ieteiktās medicīnisko atkritumu samazināšanas metodes ietver pastiprinātu ārstu informēšanu par zāļu blaknēm. Tas atbilst četrām hospitalizācijas dienām no 100 un izmaksā NVD līdz pat 466 miljoniem mārciņu (583 miljoni eiro) gadā.

Lielbritānijas Medicīnas asociācijas pārstāvniecības, kas nosaka nozares politiku, vadītājs Īens Vilsons izteicies: „Kad ārsti tiek atbrīvoti no nevajadzīgas birokrātijas vai slikti pārvaldītas sistēmas, viņi ir ideālā pozīcijā, lai koncentrētos uz resursu sekmīgāku izmantošanu un pacientu vērtībām. Stingro finansējuma ierobežojumu dēļ ārstiem bijusi vadošā loma pacientu prasmīgākas aprūpes veidu atrašanā, ietaupot NVD naudu un tajā pašā laikā nodrošinot to, ka netiek apdraudēta pacientu aprūpes kvalitāte.”

Lielbritānijas Karaliskās farmaceitu biedrības Anglijas Farmācijas padomes vadītājs Deivids Brenfords izteicies, ka farmaceiti varētu tikt pilnvaroti sniegt zāļu lietošanas

pārskatus pacientiem, īpaši tiem, kam ir hroniskas slimības, kuri uzsāk sarežģītus ārstēšanas režīmus. „Tas ne tikai samazina medicīnisko atkritumu daudzumu, bet arī uzlabo pacientu līdzestību un veselības aprūpes kvalitāti,” teicis Brenfords.

Viņš piebilst, ka šī brīža Anglijas Farmācijas padomes kampaņas koncentrējas uz resursu izmantošanas uzlabojumu, palielinot farmaceitu pielietojumu. „Mēs priecātos strādāt ar akadēmiju vai jebkuru no karaliskajām koledžām, lai palīdzētu viņiem plānot, kā NVD varētu ietaupīt naudu, uzlabojot zāļu lietošanu.”

Lielbritānijas Patentbrīvo medikamentu ražotāju asociācijas ģenerāldirektors Varviks Smits secinājis, ka patentbrīvo zāļu parakstīšana Anglijā jau šobrīd NVD ietaupa vairāk nekā 12 miljardus mārciņu (15 miljardi eiro) gadā.

Appendix 15

Only half of patients take their medications as prescribed

If people take medications prescribed to them, they usually get better. But only about half of all patients prescribed medication take it according to directions. Here is what we don't know: We don't know how to get patients to take their medications, despite many studies looking at the issue.

Researchers doing a review for the international Cochrane Library for health information reviewed 182 trials that were testing different approaches to increasing medication adherence and patient health. Even though the review included many of the best quality studies, there were no clear winning solutions. In fact, many of the studies had problems in their design.

"The studies varied so much in terms of their design and their results that it would have been misleading to try to come up with general conclusions," said lead researcher Robby Nieuwlaat of the Department of Clinical Epidemiology and Biostatistics of the Michael G. DeGroote School of Medicine at McMaster University. "Based on this evidence, it is uncertain how adherence to medication can be consistently improved. We need to see larger and higher quality trials, which better take in account individual patient's problems with adherence."

Most trials were unreliable casting doubt on the validity of the results instead. Out of 182 trials, only 17 were of high quality and each of these tested combinations of several different approaches, such as support from family members or pharmacists, education and counselling. Still fewer, only five of these 17 showed improvements in health outcomes for patients, as well as in medication adherence.

"This review addresses one of the biggest challenges in health care," said Dr. David Tovey, Editor in Chief of the Cochrane Library. "It's a real surprise that the vast amount of research that has been done has not moved us further forward in our understanding of how to address this problem. With the costs of health care across the world increasing, we've never needed evidence to answer this question more than we do now."

The authors have now decided to turn to the research community to help understand the issues. They have created a database of the relevant trials and made this available to other researchers in the field in order to encourage collaboration and more in-depth analyses on smaller groups of trials.

"By making our comprehensive database available for sharing we hope to contribute to the design of better trials and interventions for medication adherence," said Nieuwlaat. "We need to avoid repeating the painful lessons of adherence research to date and begin with interventions that have shown some promise, or at least have not produced repeatedly negative results." ⁸

⁸ Available from: <http://www.worldpharmanews.com/research/2950-only-half-of-patients-take-their-medications-as-prescribed>

Appendix 16

Tikai puse pacientu zāles lieto atbilstoši norādījumiem

Kad cilvēki lieto tiem parakstītās zāles, viņi parasti atveseļojas. Taču tikai aptuveni puse pacientu parakstītās zāles lieto atbilstoši norādījumiem, ziņo portāls www.worldpharmanews.com. Taču vēl aizvien speciālisti nezina, kā rosināt pacientus lietot viņiem domātās zāles, par spīti daudzajiem pētījumiem, kuros šis jautājums ticis aplūkots.

Veicot veselības informācijas starptautisko datubāzu *Cochrane Library* pārskatu, pētnieki izskatīja 182 pētījumus, kuros pārbaudīja dažāda veida pieeju līdzestības un pacientu veselības uzlabošanā. Lai gan pārskats ietvēra daudzus no labākajiem kvalitātes pētījumiem, nebija neviena īsti piemērota risinājuma. Patiesībā daudzu pētījumu problēma bija to plānojumā.

“Pētījumi viens no otra tik ļoti atšķīrās ar to plānojumu un rezultātiem, ka būtu bijis maldinoši censties izdarīt vispārīgus secinājumus,” izteicies Robijs Niulāts, Makmāstera universitātes Maikla Degrūta medicīnas skolas Klīniskās epidemioloģijas un bioloģiskās statistikas departamenta galvenais pētnieks. “Pamatojoties uz šo informāciju, nav skaidrs, kā varētu konsekventi uzlabot pacienta līdzestību. Ir nepieciešams veikt lielāka mēroga un augstākas kvalitātes pētījumus, kuros vairāk būtu ņemtas vērā katra pacienta problēmas ar līdzestību.”

Lielākā daļa pētījumu nebija uzticami, radot šaubas par rezultātu ticamību. Tikai 17 no 182 gpētījumiem bija augstas kvalitātes un katrā no tiem tika pētītas vairākas dažādu pieeju kombinācijas, kā piemēram, atbalsts no ģimenes locekļiem vai farmaceitiem, kā arī izglītība un konsultācijas. Vēl mazāk, tikai pieci no iepriekš minētajiem 17 pētījumiem, uzrādīja gan pacientu veselības stāvokļa, gan arī līdzestības uzlabojumus.

“Šis pārskats skar vienu no lielākajiem izaicinājumiem veselības aprūpē,” paudis Dr. Deivids Tovijs, *Cochrane Library* galvenais redaktors. “Ir pārsteidzoši, ka veikto pētījumu lielais daudzums nav viesis skaidrību šīs problēmas risināšanā. Palielinoties veselības aprūpes izmaksām visā pasaulē, šobrīd mums vairāk kā jebkad ir vajadzīgi pierādījumi, lai spētu atbildēt uz šo jautājumu.” *Cochrane Library* veidotāji šobrīd ir izlēmuši aicināt palīgā pētniekus izprast šos jautājumus. Ir izveidota datubāze ar nozīmīgajiem pētījumiem, kas ir pieejama citiem pētniekiem šajā jomā, lai rosinātu viņus uz sadarbību un mazāku pētījumu daudzumu padziļinātu analīzi.

“Padarot savas visaptverošās datubāzes pieejamas visiem, mēs ceram sekmēt labāku pētījumu izveidi un zāļu līdzestības pasākumus,” izteicies Niulāts. “Ir jācenšas neatkārtot smagās kļūdas līdz šim veiktajā līdzestības pētniecībā un jāsāk ar pasākumiem, kam būtu kaut nelieli rezultāti vai vismaz tā, lai neveidotos atkārtoti neveiksmīgi rezultāti.”

Appendix 17

Pharmacy Sues DEA for Seizing Its Drugs

While some pharmacies have their drugs stolen by robbers, a pharmacy in Tampa, Florida, had its drugs taken by the Drug Enforcement Administration (DEA).

West Chase Compounding Pharmacy filed a lawsuit against the DEA, the Justice Department, and Attorney General Eric Holder for seizing its drugs and disrupting its ability to conduct business, according to the *Tampa Tribune*. The pharmacy is also seeking a restraining order so that it can continue operating.

When the DEA arrived at the pharmacy last week, agents removed the pharmacy's DEA registration, which allows stores to sell controlled substances, according to court filings. The agents also gave pharmacy employees a letter full of inaccuracies, according to the pharmacy's restraining order filing.

"The basis for DEA's action was not that the pharmacy posed some imminent harm or threat to the public," court filings state. "No, the DEA's justification was that a membership interest in the pharmacy was transferred some 19 months before without its approval. The DEA acted unlawfully, outside its statutory and legal authority, and contrary to its prior interpretation of its own regulations. Further, the DEA violated the pharmacy's constitutional right to due process by circumventing its administrative process."

According to legal filings, the pharmacy approved the sale of a membership interest by a man named Stephen Caddick to Renier Gobeia, but the DEA's letter to the pharmacy claimed Gobeia sold the membership interest to himself.

The pharmacy is arguing that it sells certain medications that are not commercially available to patients, causing them to suffer from the DEA's actions, according to the *Tampa Tribune*.

Pharmacy employees believe the DEA's actions will likely force the business to close, according to the *Tampa Tribune*.⁹

⁹ Available from: <http://www.pharmacytimes.com/news/Pharmacy-Sues-DEA-for-Seizing-Its-Drugs>

Appendix 18

ASV aptieka iesūdz tiesā Narkotiku apkarošanas aģentūru par zāļu konfiskāciju

Kaut arī dažu aptieku zāles nonāk zagļu rokās, Floridas pilsētā Tampā Narkotiku apkarošanas aģentūra (DEA) kādai aptiekai konfiscējusi visas zāles.

Kā ziņo laikraksts “Tampa Tribune”, *West Chase Compounding* aptieka iesniegusi prasību pret DEA Tieslietu departamentu un ģenerālprokuroru Ēriku Holderu par aptiekas zāļu konfiskāciju un sekmīga darba traucēšanu. Aptieka arī vēlas, lai tiek izdots pagaidu ierobežojošs rīkojums pret DEA, kas ļautu aptiekai turpināt savu darbību.

Pēc tiesā pieejamās informācijas, kad DEA pagājušajā nedēļā ieradās aptiekā, aģentūras pārstāvji anulēja aptiekas DEA licenci, kas atļauj tirgot kontrolētās vielas. Vadoties pēc ierobežojošā rīkojuma datiem, aptiekas darbinieki no DEA pārstāvjiem saņēma arī vēstuli, kurā bija ļoti daudz neprecizitāšu.

“DEA rīcības cēlonis nebija tas, ka aptieka varētu radīt nenovēršamu kaitējumu vai draudus sabiedrībai,” rakstīts tiesas iesniegumā. “Nē, DEA attaisnojums bija, ka aptiekas daļas tikušas pārdotas vairāk nekā pirms pusotra gada bez aģentūras piekrišanas. DEA rīkojās prettiesiski, ārpus tās pilnvarām un pretēji tās iekšējam nolikumam. Turklāt DEA pārkāpa aptiekas konstitucionālās tiesības uz taisnīgu tiesu, nelikumīgi apejot tās administratīvo procedūru.”

Saskaņā ar juridiskiem iesniegumiem, aptieka apstiprināja, ka Stīvens Kadiks pārdevis savas aptiekas daļas Renjēram Gobeā, taču DEA vēstulē aptiekai apgalvots, ka Gobeā pārdevis sīs daļas pats sev.

Aptieka uzsver, ka tā pārdod tādas zāles, kas pacientiem nav tirdzniecībā pieejamas, un šādi viņi cieš no DEA darbībām. Aptiekas darbinieki uskata, ka DEA darbības rezultātā aptiekai visdrīzāk nāksies pārtraukt darbību, vēsta laikraksts “Tampa Tribune”.

Appendix 19

Role for smartphones and social media in medicine safety

The project will look at the potential for identifying drug safety issues via mining of publically available social media data.

An app will be developed to make it easy for healthcare professionals and the public to report suspected adverse drug reactions (ADRs) to national and European regulators.

An EU initiative wants to widen the use of smartphones and social media for transmitting notifications about drug safety issues directly to patients, clinicians and caregivers. The three-year project, known as WEB-RADR, involves the Medicines and Healthcare products Regulatory Agency (MHRA). It will investigate the potential of social media data and its value for pharmacovigilance and pharmacoepidemiology.

Funded by the Innovative Medicines Initiative, a public–private partnership between the European Union and the European Federation of Pharmaceutical Industries and Associations, WEB-RADR also aims to come up with recommendations for the medicines regulators and the pharmaceutical industry on how these new approaches can be integrated with existing systems.

A workshop to launch the scheme will be held at the European Medicines Agency at the end of October 2014.

“The growing use of smartphones and tablets by patients and healthcare professionals creates a need for reporting forms to be provided on these platforms to ensure regulators receive ADR reports that are easy to access and complete,” says Mick Foy, from the MHRA’s vigilance and risk management of medicines division.

“[T]he recent growth of social media platforms, such as Facebook, Twitter and the many specialist sites and blogs, has given rise to many people sharing their medical experiences publically on the internet. Such data sharing, if properly harnessed, could provide an extremely valuable source of information for post-marketing surveillance for suspected adverse drug reactions and safety monitoring.”¹⁰

¹⁰ Available from: <http://www.pharmaceutical-journal.com/news-and-analysis/news/role-for-smartphones-and-social-media-in-medicine-safety/20066370.article>

Appendix 20

Palielinās viedtālrunu un sociālo plašsaziņas līdzekļu loma drošā zāļu lietošanā

Plānots izstrādāt mobilā telefona aplikāciju, kas palīdzētu veselības aprūpes speciālistiem un sabiedrībai ziņot par zāļu blaknēm, ziņo www.pharmaceutical-journal.com.

Šī projekta mērķis ir rast veidu, kā atpazīt jautājumus, kas saistīti ar drošu zāļu lietošanu, rūpīgi pētot sabiedrībai pieejamo informāciju sociālajos plašsaziņas līdzekļos. Tiks izstrādāta mobilā telefona aplikācija, kas ļaus veselības aprūpes speciālistiem un sabiedrībai ērtā veidā ziņot valsts mēroga un Eiropas reglamentējošām institūcijām par iespējamām zāļu blakusparādībām.

Eiropas Savienības iniciatīva paredz palielināt viedtālrunu un sociālo plašsaziņas līdzekļu izmantošanu, lai pacienti, ārsti, kā arī aprūpes speciālisti tiktu nekavējoties informēti par drošas zāļu lietošanas jautājumiem. Trīs gadu projektā ar nosaukumu WEB-RADR (zāļu blakņu atpazīšana) iesaistījies arī Zāļu un veselības aprūpes produktu aģentūra (MHRA). Projekta mērķis ir izziņāt sociālo plašsaziņas līdzekļu informācijas lietderības potenciālu un nozīmi drošas zāļu lietošanas uzraudzībā (farmakovigilancē), kā arī zāļu ietekmē uz cilvēku (farmakoepidemioloģijā).

WEB-RADR, ko finansējusi Inovatīvā Medicīnas Iniciatīva – Eiropas Farmaceutisko rūpniecību un asociāciju federāciju un Eiropas Savienības publiskās un privātās partnerības programma – vēlas nākt klajā ar ieteikumiem, kā šī jaunā pieeja var tikt saistīta ar jau pastāvošajām sistēmām zāļu apriti uzraugošajās institūcijās un farmācijas nozarē.

2014. gada oktobra beigās Eiropas Medicīnas aģentūrā notiks seminārs par godu šī projekta atklāšanai.

“Gan pacienti, gan veselības aprūpes speciālisti viedtālrunus un planšetdatorus izmanto arvien biežāk, kas rada nepieciešamību pēc tādas informācijas pieejamības šajās platformās, lai reglamentējošās institūcijas varētu ērti un pilnvērtīgi saņemt ziņojumus par zāļu blaknēm,” uzskata Miks Fojs no MHRA zāļu piesardzīgas lietošanas un riska pārvaldības nodaļas.

“Nesenā sociālo plašsaziņas līdzekļu platformu, piemēram, *Facebook*, *Twitter* un daudzo specializēto vietņu un blogu attīstība ir devusi zaļo gaismu daudziem cilvēkiem dalīties savā medicīniskajā pieredzē interneta publiskajā telpā. Šāda veida informācijas izplatīšana, ja tā izmantota atbilstoši, varētu sniegt neizmērojami vērtīgu informācijas avotu pēcreģistrācijas uzraudzībai, kas saistīta ar iespējamām zāļu blaknēm un to drošas lietošanas pārraudzību.”

Appendix 21

Ex-Sanofi CEO Viehbacher in line for up to \$7.8M cash payoff

When a CEO falls from grace, people want to know how soft the landing might be. For the now-former chief of Sanofi, Chris Viehbacher, there's plenty of money for a cushion, but it won't be nearly as plump as the packages granted to his counterparts in the U.S.

Under Viehbacher's contract with Sanofi, he's eligible for 24 months' worth of fixed compensation, plus 24 months' worth of variable pay, based on his last batch of incentive compensation. With €1.26 million in base salary for 2014, plus €1.7 million in 2013 variable compensation, the 24-month package would be about €6 million or about \$7.5 million.

But according to Sanofi's annual filing with the U.S. Securities and Exchange Commission, Viehbacher only gets the full amount if Sanofi met certain performance targets for the previous three years.

That's two out of three of the following: net income to net sales of at least 15%; cash flow to net sales of at least 18%; and net sales growth equal to or higher than the industry rate. Also, Viehbacher's "termination benefit" has to be a., nonvoluntary, and b., linked to a change in control or strategy. He has the former covered. As to the latter? The board said in Wednesday's statement that the company would be sticking to its current strategy. A potential sticking point.

What about stock and options? Sanofi has a complicated formula for option and share awards, with performance targets--profits, shareholder returns, and so on--that apply to vesting of both. The board awarded €8.2 million in performance shares from 2009 to 2013, but the 2012 and 2013 shares--about €4.7 million worth--wouldn't vest till 2015 and 2016. There's no mention of accelerated vesting associated with his departure.

As for any pension benefits under Sanofi's plan, he'll be out of luck. Viehbacher would have to end his career at the company to qualify for payouts. But the board thought about this fact when setting up his compensation package, the annual filing helpfully states.

To put all this in context, consider David Brennan, pushed out of AstraZeneca in 2012. With accelerated vesting of shares and options, plus severance pay and pension, he stood to collect \$65 million. Daniel Vasella, the former chairman and CEO of Novartis, was set for a \$78 million exit deal, until public outcry persuaded the company's board to cut that to \$5.2 million. Then there's Viehbacher's predecessor at Sanofi, Gerard Le Fur, who was said to be in line for a \$11.3 million payoff package at the time.¹¹

¹¹ Available from: <http://www.fiercepharma.com/story/ex-sanofi-ceo-viehbacher-line-78m-cash-payoff/2014-10-30>

Appendix 22

“Sanofi” bijušais izpilddirektors Vībahers saņems gandrīz 6 miljonu eiro kompensāciju

Farmācijas uzņēmuma “Sanofi” tikko atlaistais galvenais izpilddirektors Kriss Vībahers (*Chris Viehbacher*) saņems ievērojamu atlaišanas kompensāciju, ziņo nozares starptautiskie mediji. Saskaņā ar darba līgumu, viņš saņems 24 mēnešu fiksēto atalgojumu plus 24 mēnešu mainīgo atalgojuma daļu. Balstoties uz 1,26 miljonus eiro lielās 2014. gada pamatalgas un 2013. gada 1,7 miljonus eiro vērtās atalgojuma mainīgās daļas, Vībahera atlaišanas kompensācija kopā veido gandrīz 6 miljonus eiro.

Taču saskaņā ar “Sanofi” gada pārskatu, pilnu summu Vībahers saņems tikai tad, ja uzņēmums iepriekšējos trīs gados būs sasniedzis uzstādītos darbības mērķus.

Tas nozīmē izpildītas vismaz divas no trim iespējām – tīrā peļņa pret tīrajiem pārdošanas ienākumiem – vismaz 15%, naudas plūsma pret tīrajiem pārdošanas ienākumiem – vismaz 18% un tīro pārdošanas ienākumu pieaugums, kas vienāds vai augstāks par kopējo ražošanas apjomu.

Turklāt Vībahera atlaišanas kompensācijai ir jābūt bez brīvas izvēles iespējām un saistītai ar valdības vai stratēģijas izmaiņām. Valde paziņojusi, ka uzņēmums pieturēsies pie savas šī brīža stratēģijas. Nekur nav pieminēta akciju piešķiršanas garantija saistībā ar Vībahera aiziešanu no amata.

Runājot par jebkāda apjoma pensijām, kas ietilpst “Sanofi” plānā, Vībaheram klāsies plāni. Lai varētu pretendēt uz naudas izmaksām, sava karjera viņam būtu jābeidz šajā uzņēmumā.

Lai paskaidrotu sīkāk, jāatceras “AstraZeneca” izpilddirektors Deivids Brennans, kas aizgāja no uzņēmuma 2012.gadā. Saistībā ar akciju garantiju, kas ietver arī atlaišanas pabalstus un pensijas, viņš ieguva 52 miljonus eiro. Savukārt bijušais “Novartis” izpilddirektors Daniels Vasella bija paredzējis iegūt atlaišanas kompensāciju 62,5 miljonu eiro apmērā, līdz sabiedrības protesti pārliecināja uzņēmuma padomi samazināt šo naudas summu līdz 4,2 miljoniem eiro. Arī Vībahera priekštecis Žerārs Lefērs tobrīd gaidīja naudas izmaksas paketi 8,1 miljonu eiro apmērā.

Appendix 23

Top 10 pharma companies by employees - 2014

October 2, 2014 | By Eric Palmer

It is probably no surprise that the 10 largest Big Pharma companies came into 2014 with far fewer employees than they had the previous year. After all, revenues have been off at those companies as some of their biggest products have fallen off the patent cliff. Thousands of jobs were lost as companies laid employees off and sold units to try to regain their balance.

2012 was the most severe of the patent cliff years in the decade, so it is logical that the numbers at the end of 2013, when they were last tallied up, would be significantly less than the year before. And the number? The 10 largest companies had 29,720 fewer employees at the end of last year than the previous year, a decline of about 3%. But given that revenues for those 10 were off 3.6% collectively, by some measures the downsizing was not enough. That means that revenues per employee were also lower, \$493,861, based on the 2013 employment and revenue numbers, compared with \$495,895 the year before.

Of course, not all companies shrank. Half of them--Novartis, Johnson & Johnson, Sanofi, Roche and Bayer--recorded at least some minimal growth last year. The largest of the top 10 by employees, Novartis, grew employment by 6.24% last year, adding about 8,000 employees, the largest increase in numbers and percent. But the Swiss drugmaker has been adjusting this year, with the sale of its vaccines business to GlaxoSmithKline and its animal health business to Ely Lilly, and its combo with GSK of their consumer health operations.

In fact, while layoffs get the most notice, spinoffs result in the most jobs lost at a company. Abbott Laboratories shed nearly 25% of its workforce in 2013, 22,000 workers, mostly because it spun off its branded pharma unit into AbbVie. Pfizer was next, losing 13,800 employees, a 15% decline. Most of that tracks back to the spinoff of its animal health business into Zoetis.

It is always interesting to see who is growing and who is shrinking and why, but it can be a tricky measure. A company like Pfizer can whack a big unit and see its employment picture change dramatically. A year or two later, it can buy a company, say one like AstraZeneca with 51,500 employees, and the numbers can swell once again.

What follows are the ins and outs of the top 10 and their employment numbers. I was helped in compiling this year's report by a couple of talented interns, James Levin and Laura

Shaposhnikova. Since they have returned to school, if you have any insights to share, please contact me. -- Eric ¹²

Top 10 Pharma Companies by Employees					
Company		Employees 2012	Employees 2013	% Change	
1.	<u>Novartis</u>	127,724	135,696	+6.24	▲
2.	<u>Johnson & Johnson</u>	126,600	128,100	+1.18	▲
3.	<u>Sanofi</u>	111,974	112,128	+0.14	▲
4.	<u>GlaxoSmithKline</u>	99,488	99,451	-0.04	▼
5.	<u>Roche</u>	82,089	85,080	+3.64	▲
6.	<u>Pfizer</u>	91,500	77,700	-15.08	▼
7.	<u>Merck</u>	83,000	76,000	-8.43	▼
8.	<u>Abbott</u>	91,000	69,000	-24.18	▼
9.	<u>Bayer</u>	55,300	56,000	+1.27	▲
10.	<u>AstraZeneca</u>	51,700	51,500	-0.39	▼

¹² Available from: <http://www.fiercepharma.com/special-reports/top-10-pharma-companies-employees-0>

Appendix 24

Farmācijas uzņēmumu top 10 pēc darbinieku skaita

Droši vien nav nekāds brīnums, ka 10 lielākie *Big Pharma* uzņēmumi 2014. gadu uzsāka ar ievērojami mazāku darbinieku skaitu nekā iepriekšējā gadā. Galu galā, uzņēmumu ienākumi ir samazinājušies, tā kā dažiem no viņu ienesīgākajiem produktiem ir beidzies patenta termiņš. Tūkstošiem darba vietu tika zaudētas, jo uzņēmumi atlaida savus darbiniekus un pārdeva uzņēmuma struktūrvienības, tā cenšoties atgūt līdzsvaru.

Pēdējā desmitgadē 2012. gads bija ievērojams ar vislielāko daudzumu medikamentu patentu, kam beidzās derīguma termiņš. Tāpēc pašsaprotami, ka 2013. gada beigās aprēķinātais skaitlis bija krietni mazāks nekā 2012. gadā. Kāds īsti bija šis skaitlis?

Pagājušā gada beigās desmit lielākajos uzņēmumos strādāja par 29 720 jeb 3% darbinieku mazāk nekā 2012. gadā. Tomēr, ņemot vērā to, ka kopumā šī desmitnieka ienākumi bija par 3,6% mazāki, atsaucoties uz dažādiem novērtēšanas kritērijiem, ar darbinieku atlaišanu vien nepietika. Tas nozīmē, ka arī katra darbinieka individuālie ienākumi bija mazāki – 493 861 dolārs (390 448 eiro), saskaņā ar 2013. gada datiem par darbaspēku un ienākumiem, salīdzinājumā ar 495 895 dolāriem (392 089 eiro) 2012. gadā.

Protams, ne visi uzņēmumi ir samazinājušies. Puse no tiem – “Novartis”, “Johnson & Johnson”, “Sanofi”, “Roche” un “Bayer” – pagājušogad kaut nedaudz attīstījās. Lielākais uzņēmums no šī top 10 pēc darbinieku skaita – “Novartis” – palielināja savu darbaspēka apjomu par 6,24%, pagājušajā gadā nolīgšot apmēram 8000 darbinieku, kas bija gan skaitliski, gan procentuāli lielākais pieaugums. Taču Šveices zāļu ražotājs “Novartis” pielāgojies šī gada situācijai, pārdodot savu vakcīnu biznesu uzņēmumam “GlaxoSmithKline” un savu veterināro produktu biznesu uzņēmumam “Eli Lilly”, kā arī sadarbojoties ar “GSK” patērētāju veselības aprūpes jomā.

Patiesībā, kamēr uzmanības centrā ir darbinieku atlaišana, uzņēmumu reorganizācijas dēļ darbu zaudē visvairāk cilvēku. Piemēram, uzņēmums “Abbott Laboratories” 2013. gadā atlaida apmēram 25% jeb 22 000 darbinieku, lielākoties tāpēc, ka uzņēmums pārstrukturēja savu oriģinālzāļu atzaru par “AbbVie”. “Pfizer” bija nākamais uzņēmums, kas zaudēja 13 800 jeb 15% darbinieku. Lielākoties tas saistīts ar šī uzņēmuma sadalīšanos, izveidojot savu veterināro produktu biznesu – “Zoetis”.

Allaž ir interesanti vērot, kurš uzņēmums aug un attīstās, bet kurš jūk un brūk un kāpēc tā notiek, taču tie var būt ļoti maldīgi vērtēšanas kritēriji. Tāds uzņēmums kā “Pfizer” var atbrīvoties no ievērojamas sava uzņēmuma daļas, tā rezultātā piedzīvojot lielas

darbaspēka skaita izmaiņas. Pēc gada vai diviem tas varēs atkal nopirkt kādu uzņēmumu, teiksim, tādu kā “AstraZeneca” ar 51 500 darbiniekiem un “Pfizer” atkal uzplauks.

Zemāk iespējams redzēt sīkāku izklāstu par top 10 uzņēmumiem un to darbinieku skaitu.

Farmācijas uzņēmumu top 10 (pēc darbinieku skaita)					
Uzņēmums		2012. gadā	2013. gadā	% izmaiņas	
1.	Novartis	127 724	135 696	+6.24	▲
2.	Johnson & Johnson	126 600	128 100	+1.18	▲
3.	Sanofi	111 974	112 128	+0.14	▲
4.	GlaxoSmithKline	99 488	99 451	-0.04	▼
5.	Roche	82 089	85 080	+3.64	▲
6.	Pfizer	91 500	77 700	-15.08	▼
7.	Merck	83 000	76 000	-8.43	▼
8.	Abbott	91 000	69 000	-24.18	▼
9.	Bayer	55 300	56 000	+1.27	▲
10.	AstraZeneca	51 700	51 500	-0.39	▼

Appendix 25

Medical uses of abused drugs



MEDICAL USES OF ABUSED DRUGS

Although these drugs are often thought of negatively because of how often they're abused, they do have several medical benefits that have been utilized and analyzed through the years. Read more:

1 DRUGS OVERVIEW AND HISTORY

The use of these drugs in medicine is a heavily argued topic, with benefits often weighed heavily against their potential for being abused outside of a controlled environment. Present uses include:



2 MEDICAL BENEFITS AND CLINICAL USES

Drugs in the U.S. are classified under different safety levels. Schedule I drugs are those with a high potential for abuse, and not currently accepted medical use in treatment in the U.S. Schedule II have a high potential for abuse, and Schedule III have a potential for abuse.

Safety Classifications:

- Schedule I: Cannabis, Heroin
- Schedule II: Methamphetamine, Ecstasy, LSD, Ketamine
- Schedule III: Opium, Amphetamines, GHB, Barbiturates, Mushrooms, Cocaine

NEUROLOGICAL

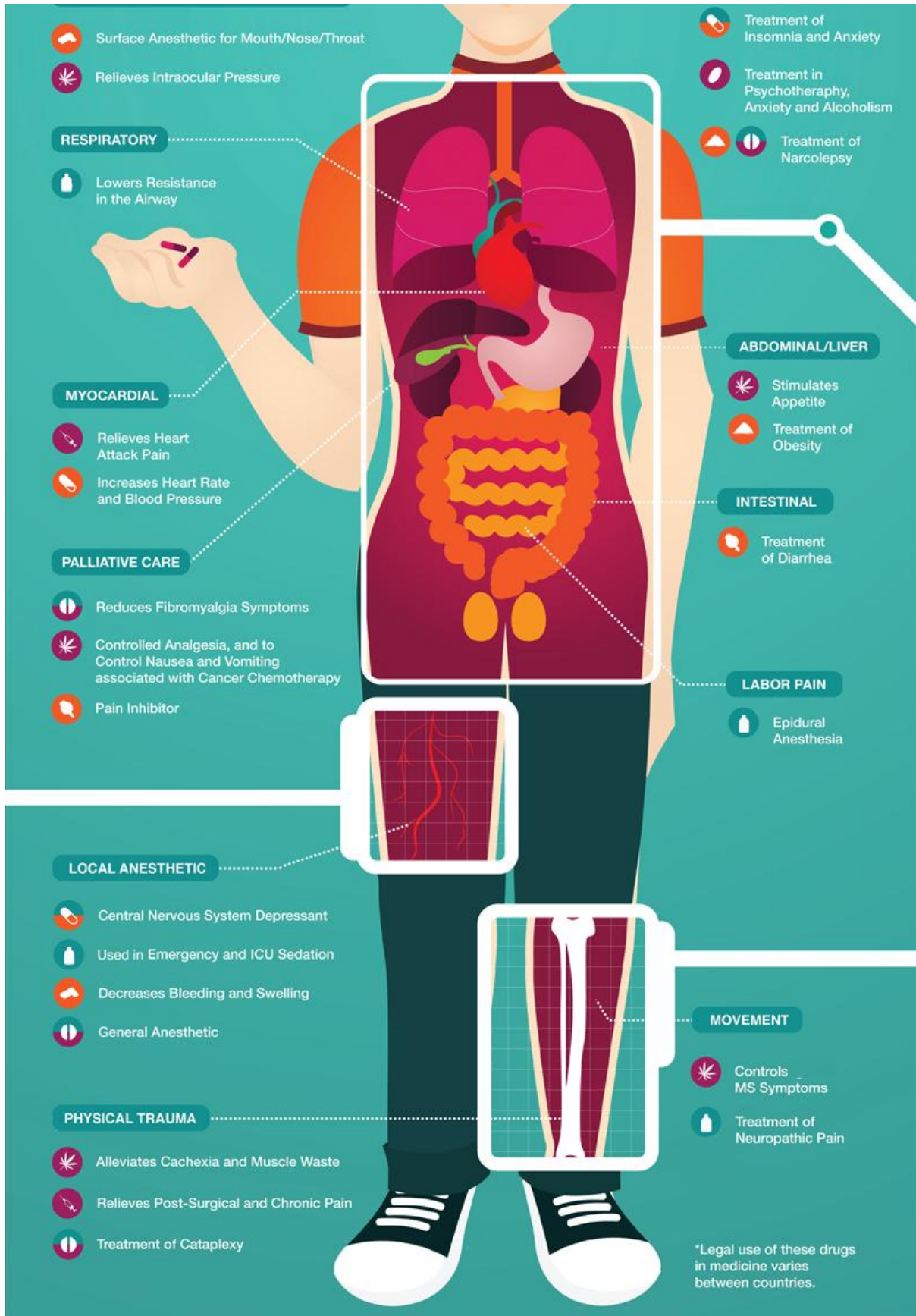
- May Inhibit Tumor Growth
- Pain and Cluster Headache Relief
- Treatment of Seizures
- Treatment of Attention Deficit Hyperactivity Disorder (ADHD)

OPHTHALMOLOGY & OTOLARYNGOLOGY

PSYCHOTHERAPY

- Treatment of Bipolar Disorder
- Treatment of Depression
- Treatment of Post-Traumatic Stress Disorder





SOURCES:

medicinenet.com, emedicine.medscape.com, en.wikipedia.org, nuaa.org.au, nawrot.psych.ndsu.nodak.edu, altmed.creighton.edu, webmd.com, ncbi.nlm.nih.gov, cannabismd.net, psychoactive.org.uk, narconon.org, emedicinehealth.com, psychedelicalibrary.org, healthvermont.gov, cesar.umd.edu, deadiversion.usdoj.gov

INFORMATION PROVIDED BY: <http://www.medicalbillingandcoding.org/>



Appendix 26

Narkotisko vielu ārstnieciskās īpašības



NARKOTISKO VIELU ĀRSTNIECISKĀS ĪPAŠĪBAS

Par spīti tam, ka narkotisko vielu lietošana visbiežāk tiek uzverta negatīvi, tām ir arī vairākas ārstnieciskās priekšrocības, ko izmanto un analizē jau daudzus gadus. Lasiet vairāk:

1 NARKOTIKU PĀRSKATS UN VĒSTURE

Narkotisko vielu izmantošana medicīnā ir strīdīgs temats. To priekšrocības bieži vien gūst virsroku pār iespēju, ka tās varētu tikt nepareizi izmantotas ārpus kontrolētas vides. To lietojums mūsdienās ietver:



2 GUVUMI MEDICĪNĀ UN KLĪNISKĀ IZMANTOŠANA

ASV narkotiskās vielas iedala 3 dažādās drošības pakāpēs. Saraksts I ietver vielas ar augstu jaunprātīgas izmantošanas pakāpi, turklāt ASV šīs vielas šobrīd nav atļauts izmantot ārstniecībā. Saraksts II ietver vielas ar augstu jaunprātīgas izmantošanas pakāpi un saraksts III ietver vielas ar zemāku jaunprātīgas izmantošanas pakāpi.

Iedalījums pēc drošības:

- Saraksts I: Marihuāna, Metamfetamīns, Ekstazī
- Saraksts II: Opijs, Amfetamīni, GHB
- Saraksts III: Barbiturāti, Heroīns, Sēnes, Kokaīns, LSD, Ketamīns

NEIROLOĢIJA

- Var aizkavēt audzēja attīstīšanos
- Galvassāpju un migrēnu novēršana
- Lēkmju ārstēšana
- Uzmanības deficīta un hiperaktivitātes sindroma (UDHS) ārstēšana

OFTALMOLOĢIJA UN OTOLARINGOLOĢIJA

PSIHOTERAPIJA

- Bipolāru traucējumu ārstēšana
- Depresijas ārstēšana
- Pēctraumatiskā stresa sindroma ārstēšana



Mutes/deguna/rīkles vietējā anestēzija

Mazina acs lekšējo spiedienu

ELPOŠANA

Mazina elpceļu pretestību

SIRSDARBĪBA

Mazina sirdslēkmu radītās sāpes

Uzlābo sirdsdarbību un asinsspiedienu

PALIATĪVĀ APRŪPE

Samazina fibromialģijas simptomus

Kontrolēta analģēzija un ķīmijterapijas izraisītās vemšanas un slikstās dūšas pārvaldība

Sāpju mazināšana

Bezmiega un trauksmainības ārstēšana

Trauksmainības un alkohollisma ārstēšana

Narkolepsijas ārstēšana

KUŅĢIS UN AKNAS

Veicina apetīti

Aptaukošanās ārstēšana

ZARNAS

Līdzeklis pret caureju

DZEMDĪBU SĀPES

Epidurālā anestēzija

VIETĒJĀ ANESTĒZIJA

Centrālās nervu sistēmas depresants

Nomierinošs līdzeklis neatliekamajā medicīnā un intensīvajā terapijā

Samazina asiņošanu un uztūkumu

Vispārējā anestēzija

FIZISKA TRAUMA

Atvieglo kaheksijas un muskuļu atrofijas sekas

Mazina pēc operācijas perioda un hroniskas sāpes

Katapleksijas ārstēšana

KUSTĪBA

Kontrolē multiplās sklerozes simptomus

Neiralģijas ārstēšana

*Šo narkotisko vielu likumīga izmantošana medicīnā katrā valstī atšķiras.

AVOTI:

medicinenet.com, emedicine.medscape.com, en.wikipedia.org, nuua.org.au, nawrot.psych.ndsu.nodak.edu, altmed.creighton.edu, webmd.com, ncbi.nlm.nih.gov, cannabismd.net, psychoactive.org.uk, narconon.org, emedicinehealth.com, psychedelic-library.org, healthvermont.gov, cesar.umd.edu, deadiversion.usdoj.gov

INFORMĀCIJU NODROŠINA: <http://www.medicalbillingandcoding.org/>

MEDICAL
BILLING & CODING

FACTS ABOUT GENERIC DRUGS

Today, nearly **8 in 10** prescriptions filled in the U.S. are for generic drugs.

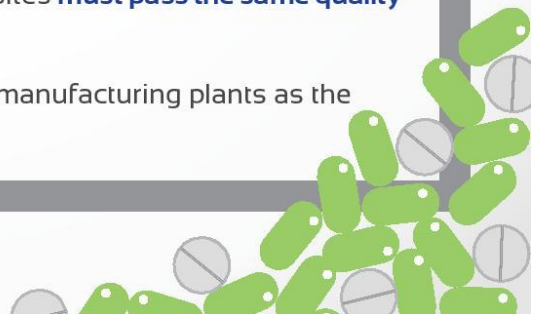


SAME QUALITY &

PERFORMANCE

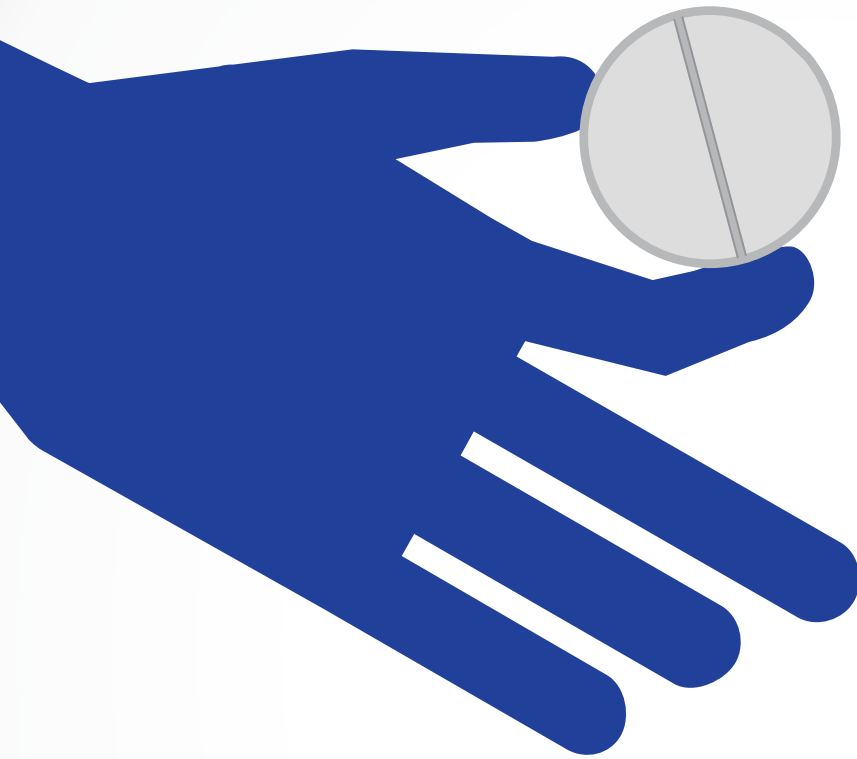


- FDA requires generic drugs to have the **same active ingredient, strength, dosage form, and route of administration** as the brand-name drug.
- The generic manufacturer **must prove its drug is the same** (bioequivalent) as the brand-name drug.
- All manufacturing, packaging, and testing sites **must pass the same quality standards** as those of brand-name drugs.
- Many generic drugs are made in the same manufacturing plants as the brand-name drugs.





ALL FDA-APPROVED GENERIC DRUGS MUST BE EQUIVALENT TO THE BRAND-NAME DRUG.



Any generic drug modeled after a single, brand name drug must perform approximately the same in the body as the brand name drug. There will always be a slight, but not medically important, level of natural variability just as there is for one batch of brand name drug compared to the next batch of brand name product.

This amount of difference would be expected and acceptable, whether for one batch of brand name drug tested against another batch of the same brand, or for a generic tested against a brand name drug.

80-85% LESS

Average cost of a generic drug vs. its brand-name counterpart



In 2010 alone, the use of FDA-approved generics saved **\$158 billion**.

\$3 BILLION SAVED EVERY WEEK!

Sun

Mon

Tues

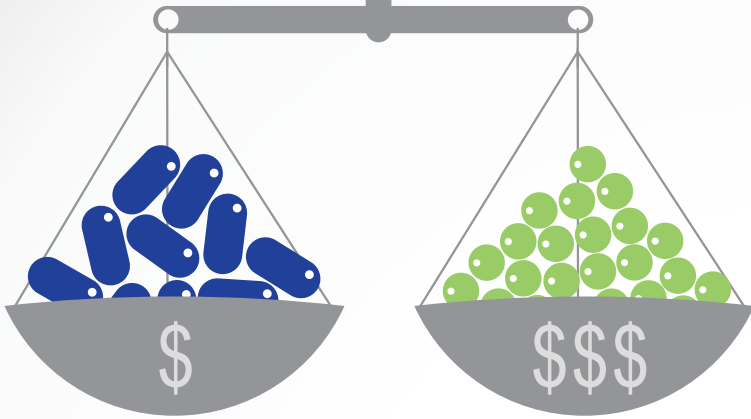
Wed

Thurs

Fri

Sat

THE LOWER PRICE DOESN'T MEAN INFERIOR.



Generic manufacturers are able to sell their products for lower prices because they are not required to repeat the costly clinical trials of new drugs and generally do not pay for costly advertising, marketing, and promotion. In addition, multiple generic companies apply to FDA to approve a generic for the same brand name drugs. Multiple generic companies are often approved to market a single product. Competition in the market place, often results in lower prices.

FDA MONITORS ADVERSE EVENTS REPORTS FOR GENERIC DRUGS.

The monitoring of adverse events for all drug products, including generic drugs, is one aspect of the overall FDA effort to evaluate the safety of drugs after approval. Many times, reports of adverse events describe a known reaction to the active drug ingredient.

Reports are monitored and investigated, when appropriate. Investigations may lead to changes in how a product is used or manufactured.



FDA IS ACTIVELY ENGAGED IN MAKING GENERIC DRUGS SAFER.

FDA is aware that there are reports that some people may experience an undesired effect when switching from a brand name drug to a generic formulation or from one generic drug to another generic drug. FDA wants to understand what may cause problems with certain formulations if, in fact, they are linked to specific generic products.

FDA is encouraging the generic industry to investigate whether, and under what circumstances, such problems occur. The Agency does not have the resources to perform independent clinical studies and lacks the regulatory authority to require industry to conduct such studies. FDA will continue to investigate these reports to ensure that it has all the facts about these treatment failures and will make recommendations to healthcare professionals and the public if the need arises.



FAKTI PAR ĢENĒRISKAJĀM ZĀLĒM

Šobrīd apmēram 8 no 10 ASV izrakstītiem recepšu medikamentiem ir ģenēriskās zāles.



VIENĀDA KVALITĀTE

UN IEDARBĪBA



- Pārtikas un zāļu pārvalde (FDA) pieprasa, lai ģenēriskām zālēm ir tāda pati aktīvā viela, stiprums, zāļu forma un lietošanas veids kā zīmola zālēm.
- Ģenērisko zāļu ražotājiem jāpierāda, ka viņu zāles ir tādas pašas (bioekvivalentas) kā zīmola zāles.
- Visām ražošanas, iepakojšanas un testēšanas vietām ir jāatbilst tiem pašiem kvalitātes standartiem, kas attiecas uz zīmola zālēm.
- Daudzas ģenēriskās zāles tiek ražotas tajās pašās rūpnīcās, kur zīmola zāles.



VISĀM FDA APSTIPRINĀTĀM ĢENĒRISKAJĀM ZĀLĒM JĀBŪT LĪDZVĒRTĪGĀM ZĪMOLA ZĀLĒM.



Jebkurām ģenēriskām zālēm, kas veidotas pēc viena noteikta zīmola zāļu parauga, ir jābūt ar līdzīgu iedarbību uz cilvēka ķermeni, kā šī zīmola zālēm. Vienmēr pastāv iespēja, ka var būt nelielas, bet medicīniski nenozīmīgas dabiskas atšķirības, tieši tāpat kāatšķiras viena oriģinālzāļu sērija no citas šo pašu zāļu sērijas.

Šāds izmaiņu apjoms ir sagaidāms un pieļaujams gan saistībā ar vienas sērijas zīmola zālēm attiecībā pret citas sērijas zīmola zālēm, kā arī ģenēriskajām zālēm attiecībā pret zīmola zālēm.

80-85% MAZĀK

Ģenērisko zāļu vidējās izmaksas pret to zīmola zāļu līdzinieku



Tikai 2010. gadā vien, lietojot FDA apstiprinātās ģenēriskās zāles, tika ietaupīti 158 miljardi dolāru (125,2 miljardi eiro).

3 MILJARDI USD (2,4 MILJARDI EUR) IETAUPĪTI KATRU NEDĒLU!

Pirmdiena

Otrdiena

Trešdiena

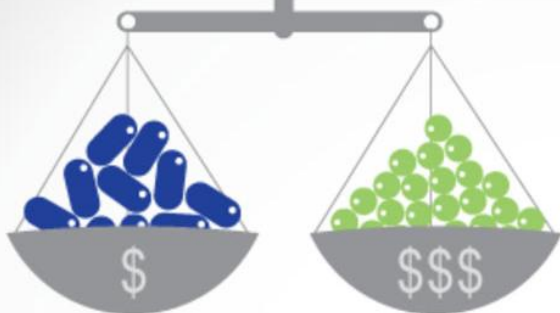
Ceturtdiena

Piektdiena

Sestdiena

Svētdiena

ZEMĀKA CENA NENOZĪMĒ SLIKTĀKU KVALITĀTI.



Ģenērisko zāļu ražotāji var pārdot savu produkciju par zemākām cenām tāpēc, ka viņiem nav nepieciešams atkārtoti veikt dārgus jaunu zāļu klīniskos pētījumus un viņiem nav jāizdod liela nauda par reklāmu, reģistrēšanu un sabiedrības informēšanu. Turklāt, vairāki ģenērisko zāļu ražošanas uzņēmumi piesakās FDA, lai reģistrētu ģenēriskās zāles līdzvērtīgām zīmola zālēm. Bieži vien daudzi ģenērisko zāļu ražotāji reģistrē tirgū tikai vienu produktu. Konkurence tirgū visbiežāk sekmē cenu pazemināšanos.

FDA PĀRRAUGA ZIŅOJUMUS PAR ĢENĒRISKO ZĀĻU BLAKNĒM.

Visu zāļu, tai skaitā ģenērisko zāļu, blakņu pārraudzība ir viens no FDA vispārējo mēģinājumu aspektiem novērtēt zāļu drošību pēc to apstiprināšanas. Daudzos gadījumos ziņojumi par blaknēm apraksta iepriekš novērotas reakcijas uz zāļu aktīvo vielu.

Ziņojumi tiek atbilstoši pārraudzīti un pētīti. Pētījumu rezultātā var rasties izmaiņas noteikta produkta izmantošanā vai ražošanā.



FDA IR IEINTERESĒTA PADARĪT ĢENĒRISKĀS ZĀLES DROŠĀKAS.

FDA ir informēta par to, ka daži cilvēki var izjust nevēlamu reakciju, pārejot no zīmola zālēm uz ģenēriskām zālēm vai arī no vienām ģenēriskām zālēm uz citām. FDA vēlas saprast, kādi ir šo zāļu nelabvēlīgo izpausmju cēloņi, ja tie ir saistīti ar konkrētām ģenēriskām zālēm.

FDA ierosina ģenērisko zāļu rūpniecībā izpētīt sīkāk, vai un kādu apstākļu rezultātā rodas šādas problēmas. Pārvaldes rīcībā nav pietiekami daudz resursu, lai īstenotu neatkarīgus klīniskos pētījumus, kā arī trūkst reglamentējošās varas pieprasīt veikt šādus pētījumus ražotājiem. FDA turpinās pētīt ziņojumus par blaknēm, lai pārliecinātos, ka ir iegūta pilnvērtīga informācija par neveiksmīgiem ārstēšanas gadījumiem, un izteiks padomus veselības aprūpes speciālistiem un sabiedrībai, ja radīsies tāda nepieciešamība.



¹Davit et al. Comparing generic and innovator drugs: a review of 12 years of bioequivalence data from the United States Food and Drug Administration. *Ann Pharmacother.* 2009;43(10):1583-97.

Dokumentārā lapa

Maģistra darbs “Peculiarities in Translation of Pharmacy Related Texts” („Ar farmācijas nozari saistītu tekstu tulkošanas īpatnības”) izstrādāts LU Humanitāro zinātņu fakultātē.

Ar savu parakstu apliecinu, ka pētījums veikts patstāvīgi, izmantoti tikai tajā norādītie informācijas avoti un iesniegtā darba elektroniskā kopija atbilst izdrukai.

Autors: Paula Vītoliņa
(paraksts) (datums)

Rekomendēju/nerekomendēju darbu aizstāvēšanai

Vadītāja: lekt. Veneta Žīgure
(paraksts) (datums)

Recenzents: lekt. Helēna Gizeleza
(paraksts) (datums)

Studiju metodiķe: Valentīna Goldmane
(paraksts) (datums)

Darbs iesniegts Sastatāmās valodniecības un tulkošanas nodaļā
Darbu pieņēma: (datums)

Darbs aizstāvēts maģistra gala pārbaudījuma komisijas sēdē
2015. gada..... jūnijā, prot. Nr., vērtējums

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