

Translating Modern Medical Terminology: Problems and Solutions

ترجمة المصطلحات الطبية الحديثة: المشاكل والحلول

Marwan Mudhhir Abbas Abd

م.م. مروان مظهر عباس عبد

كلية التربية للبنات / جامعة تكريت

Phone: 07703489439

Email: alazzawi1991marwan@gmail.com

ملخص البحث

تناقش هذه الدراسة ترجمة المصطلحات الطبية الحديثة من الإنجليزية الى العربية، وتركز بشكل خاص على التحديات التي تواجه المترجمين والحلول المقترحة لها.

مثل الصعوبات اللغوية ونقص وجود المرادفات العربية لبعض المصطلحات الإنجليزية، إضافة الى الصعوبات الثقافية واختلاف المفاهيم الطبية بين الثقافات والصعوبات التقنية التي تنبع من ضعف المعرفة الطبية

كما توضح الدراسة أثر هذه الأخطاء على سلامة المرضى والممارسة المهنية، وتقدم حلولاً واستراتيجيات عملية، مثل استراتيجية التحليل الصرفي للمصطلحات لفهم جذور المصطلح وسياقه، واستخدام قواعد بيانات ومراجع موثوقة للمصطلحات الطبية، إضافة الى استراتيجيات الاقتباس والترجمة الوصفية والترجمة الحرفية.

وتشير نتائج الدراسة الى أن الترجمة الطبية ليست مجرد نقل لغوي، بل هي مسؤولية مهنية وأخلاقية تتطلب المعرفة التخصصية الدقيقة ومواكبة التقدمين العلمي والتكنولوجي.

الكلمات المفتاحية: ترجمة طبية، مصطلحات طبية حديثة، التحديات اللغوية، التوحيد المصطلحي، الأخطاء الطبية، سلامة المرضى، استراتيجيات الترجمة، التدريب المهني.

Summary

This study discusses the modern medical terminology translation from English to Arabic and focusing on the challenges that faced the translators and the proposed solutions, include linguistic difficulties and the lack of Arabic equivalents for some English terms additional to cultural differences, variations in medical

concepts across cultures, and technical difficulties arising from limited medical knowledge.

And I highlight the impact of translation errors on patient safety and professional practice, and proposes practical strategies and solutions, such as morphological analysis of terms to understand their roots and context, the use of reliable medical terminologies databases and references, as well as borrowing, descriptive translation, and literal translation strategies.

we findings in this study that medical translation isn't a linguistic task, but a professional and ethical responsibility requiring specialized knowledge and continuous updating to keep pace with scientific and technological advancements.

Keywords: Medical translation, modern medical terminology, linguistic challenges, terminological standardization, medical errors, patient safety, translation strategies, professional training.

Introduction

Medical translation is one of the most sensitive types of translation, especially with the scientific progress and the accelerating pace of medical research, that made a lot of new terms are produced in various fields of medicine such as biotechnology, genetics, digital health, and innovative medical treatments and this makes it one of the most challenging translation specialties due to its connection with patient health and safety.

Even minor errors can lead to serious consequences, such as incorrect diagnosis or inappropriate treatment (Henry Fischbach, 1998)¹.

According to that, I believe that medical translation isn't limited to transferring language, but it requires the translator to have a knowledge in the medical field, especially that the most translation errors stem from Insufficient knowledge with medical terminology and basic concepts.

Since English dominates the medical field, translation into other languages, such as Arabic, has become increasingly important (Jeremy Munday, 2016)² and this

1 Henry Fischbach, Translation and Medicine p1-3 (Amsterdam: John Benjamins, 1998), 1-3.

2 Jeremy Munday, Theories and Applications, 4th ed. Introducing Translation Studies 4th p255 (London: Routledge, 2016), 255.

importance placed a pressure on Arab translators, especially that many medical terms lack to the direct Arabic equivalents, or a single English term may have multiple Arabic translations.

This situation transforms the translator into a decision-maker rather than a language transmitter.

Moreover, most of these terms are derived from Greek or Latin, which complicates the translation process and increases the need to choose the most accurate or conceptually closest term.

These difficulties become even more pronounced in texts aimed at non-specialist audiences (Maeve Olohan, 2016)¹, such as patients, where excessive use of technical terminology may cause confusion, even when the translation is scientifically accurate.

Given to all these complexities, we focus in this study on the medical term's translation, and it issues like the absence of synonyms, the ambiguity of some terms, additional to the diversity of medical terminology, and the balance needing between all that.

Theoretical Framework

I believe that specialized translation goes beyond simply transferring words from one language to another. These texts belong to specific fields of knowledge where linguistic proficiency alone is insufficient; a deep understanding of the subject matter is required, and this is the fundamental difference between it and general translation, which deals with everyday language.

These specialized texts are characterized by precise terminology, demand high accuracy, and are subject to rigorous rules and standards (Maeve Olohan, 2016)².

With in this context, I've noticed that there is a difference between specialized terminology and general translation, which that the translators have more flexibility in word choice in general work, but this flexibility is disappear in specialized translation, and the term must be consistent, because that any error

1 Maeve Olohan, *Scientific and Technical Translation* pp. 121-123 (London: Routledge, 2016)

2 Maeve Olohan, *Scientific and Technical Translation* pp. 1-3 (London: Routledge, 2016),.

can distort the true meaning and the medical translation is a prime example (Juan C. Sager, 2016)¹.

I've learned Through my experience, that medical translation requires more than bilingual competence, also it need a solid knowledge of anatomy, physiology, pathology, pharmacology, and clinical procedures.

Accuracy here isn't just linguistic, it's an ethical and professional responsibility and from my perspective, this makes ongoing training, meticulous terminology review, and professional vigilance absolutely essential (Minako O'Hagan and Carmen Mangiron, 2013).²

The Concept of Medical Terminology

Medical translation is one of the most challenging forms of specialized translation, given its direct impact on human health and patient safety, (Sue Ellen Wright and Gerhard Budin 1997)³, that it involves the translation of various medical texts, like clinical reports, pharmaceutical documentation, research articles, patient information leaflets, and diagnostic manuals.

In medical contexts, translation errors aren't trivial matters, even slight inaccuracies or ambiguous wording can lead to serious consequences, such as misdiagnosis, inappropriate treatment or legal and ethical problems.

I think that most of these errors stem not only from a lack of linguistic ability, but also from the translator's lack of awareness of specific medical terminology or concepts, and this highlights the critical role that medical translation plays in healthcare systems and the translation profession (Davi- Ellen Chaboner 2017).⁴

In recent years, the importance of medical translation has increased significantly due to rapid scientific advancements, globalization, and the international spread of medical knowledge. All of this has contributed to a rapid increase in medical research and, consequently, the generation of new terminology related to biotechnology, genetics, digital health, and innovative treatment practices.

1 Juan C. Sager, A Practical Course in Terminology Processing pp.19-21 (Amsterdam: John Benjamins, 2016), 19–21.

2 Minako O'Hagan and Carmen Mangiron, Game Localization: Translating for the Global Digital Entertainment Industry pp. 45 (Amsterdam: John Benjamins, 2013).

3 Sue Ellen Wright and Gerhard Budin, Handbook of Terminology Management pp.11 (Amsterdam: John Benjamins, 1997).

4 Davi- Ellen Chabner, The Language of Medicine, 11th ed. Pp. 5-8 (Philadelphia: Elsevier, 2017).

Given the dominance of English in medical research and publication, the need for accurate translation into other languages, including Arabic, has become extremely important. This linguistic dominance places an additional burden on translators working in the field of Arabic translation, especially when they try to dealing with newly or rapidly evolving terms, that translators encounter modern medical terms that lack clear or standardized synonyms in the target language.

In many cases, a single English source term may have several Arabic renderings or none at all.

The technical density and morphological complexity of many medical terms often derived from Greek and Latin, further complicate this process. From my point, this situation forces translators to become active decision makers rather than mere language converters.

And when translating into Arabic, medical translators must decide whether to adopt loanwords, create literal translation (calques), use descriptive translations, or rely on existing terms that may not fully convey the intended meaning. And each option affects accuracy, clarity, and usability. In my view, this dilemma becomes even more problematic when medical texts are directed at non specialist audiences, such as patients or the general public, where excessive technicality may hinder comprehension despite terminological accuracy.

Another problem is the lack of terminology standardization in Arabic medical discourse. where several equivalents for the same English term coexist in different countries or institutions, such as, (High blood pressure Arterial hypertension and Diabetes Mellitus/ Diabetes and Heart Failure/ Cardiac insufficiency).

I believe that this inconsistency not only complicates the translator's task but undermines trust in translated medical texts in the same time. The lack of comprehensive and constantly updated terminological resources also increases translators' reliance on their individual efforts and scattered references.

Sources of Modern Medical Terminology

Modern medical terminology is largely based on Greek and Latin, the languages of medicine for centuries and still the foundation of many medical terms. This reliance on Greek and Latin stems from a desire to maintain international neutrality, especially given the field's heavy reliance on cross-border scientific

communication (Maeve Ohan, 2016)¹. However, this tradition poses a significant challenge when translating medical terminology into languages with different morphological and lexical systems, such as Arabic.

Additional to classical sources, the modern medical terminology is influenced by rapid scientific and technological advancements, fields such as genetics, molecular biology, medical imaging, and biotechnology are constantly introducing new concepts, which it require new terminology.

We noticed that the most of these terms initially emerge in English before spreading to other languages and they're often transferred through borrowing, literal translation (calque) formation which follows the source of the word, or partial adaptation instead of going through the integrated translation processes. (Ferdinand de Saussure, 1966)²

In last years, the emergence of many new medical terms has accelerated, and this accelerated is outpacing the ability of linguistic institutions to provide standardized and officially recognized equivalents, and for this reason, translators are forced to deal with terminology that is unstable or may change in usage or meaning.

This issue is particularly evident in Arabic medical translation, where translators are required to choose between borrowing English terms, producing descriptive translations, or formulating new terms based on Arabic morphological patterns (Jeremy Munday, 2016)³.

Based on my experience, these options contains many problems, related to clarity, acceptability, and terminological consistency.

Borrowed terminology may seem strange, descriptive translations may become lengthy, or the general public or specialists may struggle to understand or even accept the new terminology.

Overall, this dynamic reflects the need for continuous interaction between scientific innovation and linguistic adaptation. I believe these dynamic places a significant responsibility on medical translators, compelling them to constantly update their knowledge, consult multiple sources, and evaluate their options rather than relying on fixed or ready-made solutions.

1 Maeve Olohan, *Scientific and Technical Translation*, pp. 89–91, 2016.

2 Ferdinand de Saussure, *Course in General Linguistics* pp. 67 (New York: McGraw-Hill, 1966).

3 Jeremy Munday, *Introducing Translation Studies*, 4th ed. Pp. 258 (London: Routledge, 2016)

Theoretical Approaches to Translation and Their Relevance to Medical Terminology

Translation theory provides specific models that help to understand the challenges of translating medical terminology, helping to explain the success or failure of certain terminological decisions, rather than simply describing the results of translation (Said Faiq, *The Translator*, 2001)¹.

One influential contribution frequently applied in this context is Newmark's (1988)² distinction between semantic translation and communicative translation, which he explains that semantic translation and it focuses on preserving the form and meaning of the source text which I consider especially when dealing with highly technical medical terms where precision is essential, on the other hand communicative translation, on the other hand, gives priority to the effect of the target text on the target reader.

This approach becomes more important when medical texts are directed at a non-specialist audience, such as patients or the general public, who may be unable to understand complex terminology.

Another widely known model Vinay and Darbelnet (1958)³ model, which proposes a set of procedures including borrowing, literal translation, direct translation, substitution, modification, equivalence, and adaptation.

These procedures are considered practical by many specialists in the field of medical terminology translation, because they provide translators with concrete strategies for dealing with lexical gaps and structural differences between the source and target languages. For example, borrowing and literal translation (calque) are commonly used to transfer newly medical terms, while modulation is often employed to adjust conceptual perspective when direct equivalence isn't possible.

Functional approaches, particularly Scopus Theory, also provide important insights into medical translation. According to this theory, translation decisions

1 Said Faiq, "Medical Translation into Arabic: A Practical Perspective," *The Translator* 7, no. 1 pp. 54–56. (2001)

2 Peter Newmark, *A Textbook of Translation* pp. 39–47. (London: Prentice Hall, 1988)

3 Vinay, J.-P. & Darbelnet, J. *Stylistique comparée du français et de l'anglais*, 1958 p. 47/ munday, Benjamins/ pp. 31-35, 1995/2004

should be based primarily on the function of the target text (Reiss & Vermeer, 1984)¹ & (Jean P, V, and Jean D, 1995²).

I think this perspective draws attention to the importance of audience and context in terminological decision-making, rather than treating terminology as fixed or independent context Research in modern scientific and medical terminology indicates that many translation difficulties arise from conceptual rather than purely linguistic differences (Hans J. Vermeer, 1989)³, and require not only linguistic knowledge but also the integration of translation theories with terminological awareness and field experience (Kerzabi, 2022)⁴. Based on my reading of relevant studies, it is essential for a translator in the medical field to have knowledge in various disciplines, enabling them to choose the best and most appropriate term and thus achieve the best medical translation.

Problems in Translating Medical Terminology

Linguistic Difficulties

The lack of equivalent terms in the target language is one of the most common problems in translating medical terminology. Many new medical terms are coined in English to describe newly discovered diseases or diagnostic procedures, but these new terms often lack Arabic equivalents. This puts translators in a difficult position, forcing them to decide whether to borrow the term from the source language, use a descriptive translation, or create a new term. Each option carries certain risks, such as reduced clarity, limited acceptance, or terminological inconsistencies (Juan C. Sager, 1990)⁵.

Another linguistic challenge that relates to complex or multi-word medical terms, such as (chronic obstructive pulmonary disease) or (evidence-based medicine), which often contain several complex medical words in one single sentence, and

1¹ Reiss, K. & Vermeer, H. J. Grundlegung einer allgemeinen Translationstheorie, p 113, 1984.

2 Jean-Paul Vinay and Jean Darbelnet, Comparative Stylistics of French and English pp. 31–39 (Amsterdam: John Benjamins, 1995),.

3 Hans J. Vermeer, “Skopos and Commission in Translational Action,” in Readings in Translation Theory, ed. Andrew Chesterman (Helsinki: Oy Finn Lectura Ab, 1989), pp. 173–175.

4 Fadia Kerzabi, “Problematics of Translating Terminology in Modern Sciences: The Medical Term as a Model,” Journal of Arts and Languages 22, no. 1 (2022): pp.331–342.

5 Juan C. Sager, A Practical Course in Terminology Processing (Amsterdam: John Benjamins, 1990), pp. 80–82.

making them difficult to translate, or potentially resulting in vague translations that mislead the target text (Maeve Ohan, 2016).¹

As scientific knowledge develops, the meanings of existing terms may change or be replaced, making it difficult to maintain consistent and permanent translations.

The tension between literal and semantic translation is a major linguistic issue, that literal translation may preserve the outward form of the original text, but it is unable to transport the full meaning, especially if there is a discrepancy between the source and translated texts. Meaning-based translation, on the other hand, may improve clarity, but it carries the risk of deviating from established linguistic conventions (Peter Newmark, 1988)².

I believe that medical translators must strike a balance between preserving the accuracy of the source text and ensuring the functional competence of the target language. Real-world examples clearly illustrate these challenges. For instance, I have noticed that terminology related to genetics, immunology, and oncology often carries dense scientific content that is difficult to transport easily through direct translation and can directly impact clinical communication and professional confidence.

When the same English medical term is rendered into Arabic using different equivalents in separate documents, healthcare professionals may mistakenly understand that these terms refer to different conditions, procedures, or concepts. A single term may appear in one text as a borrowed form, in another as a descriptive phrase, and in a third as a partially adapted Arabic equivalent.

For example, Stroke which is borrowed from Cerebral infarction or cerebrovascular accident which is descriptive translation, while this term is also referred to Clot and this popular usage but ambiguous as it may also refer to cardiac or pulmonary thrombosis.

This variation isn't linguistic but semantic, and the term clot can mislead the medical team by failing to specify the site of pathology. Also, Tuberculosis and known between abbreviation in medical reports as TB while the Tuberculosis is scientific term and Consumption is its historical and popular term.

And a student or nurse might not immediately associate TB with consumption, creating these life-threatening gaps in what people know. This difference also

1 Maeve Olohan, *Scientific and Technical Translation* (London: Routledge, 2016), pp.94–96.

2 Peter Newmark, *A Textbook of Translation* (London: Prentice Hall, 1988), pp. 69–72.

adds another level of cognitive burden to the physicians, nurses or medical students as they have to reason out these differences while diagnosing and treating patients. What would his medical stand be if the levels are fluctuating?

Moreover, lack of uniform terms also impacts the credibility of translated medical text. I've been told nothing is more faith-destroying for readers than to have the same concept in multiple translations, leading to a loss of confidence on what the book says.

Cultural Difficulties

Aside from the inherent difficulties of languages, cultural factors contribute heavily to the translation of medical terms. Medical concepts are not mutually culturally neutral, but originate from specific medical traditions, ethical principles and social habits. Some of the medical concepts are not present in the target culture or are perceived in a different way (Saeed Faiq 2001) [1]. I suppose this is the reason, because otherwise, I still believe that only leaving cultural discrepancies out of the equation might cause technically correct but unproper (with respect to its full context in which it was read toward in the target culture) and in any case useless, even if seemingly plausible as an expression.

These differences hinder medical translation among communities, and confuse the translator himself as terms are more or less associated to specific methods, protocols, institutions or therapeutic scenes that may vary from one country to another. This is where translators have to either decide between preserving the original concept, bringing it into local practice or explaining (Jeremy Munday, 2016). [2]

For example Western psychological or mental health In many Eastern and African cultures these are translated as 'mental illness' a stigmatising label, Reproductive Health And/or it can translate as sexual health (which may itself too blunt for some conservative societies).

To this end, the translators must be aware of good principles of PR when they translate text of any type from a source language to another more politically neutral (3), since it will prevent them from rendering into socially 'non-acceptable' or ethically 'censurable' translations at least in some cases as opposed to others.

[1] Faiq, Said, "Medical translation into Arabic: A practical approach," in The Translator 7.1 (2001), pp56-58.

[2] Jeremy Munday, *Introducing Translation Studies*, 4th edition (London: Routledge, 2016), pp.259–261.

Technical and Specialized Difficulties

Medical terminology is inherently technical and specialized. Unlike general vocabulary, it comprises precise scientific concepts that can't be translated based solely on linguistic intuition (Henry Fischbach, 1998)¹.

Therefore, translation in this field requires more than just language proficiency; it demands a combination of linguistic skills and practical medical experience, particularly accuracy and familiarity with medical classifications, diagnostic criteria, and treatment protocols. Consequently, I believe that a lack of understanding of fundamental medical concepts is a major cause of serious translation errors. This problem is particularly evident in specialized fields such as cardiology, neurology, and pharmacy, where even a slight difference in terminology can lead to significant clinical harm.

As a result, translators must rely on up-to-date sources and specialized databases, and in many cases, consult with medical professionals to ensure accuracy and appropriateness.

Problems Faced by Professional and Non-Professional Translators

The differences between professional and non-professional translators significantly impact the translation of medical terminology.

Professional translators are typically trained in systematic strategies, consulting specialized sources, and maintaining terminological consistency across texts, but with all that they may still struggle with new terminology or specialized medical terms they haven't encountered before (Anthony Pym, 2014)². Non professional translators, such as bilingual healthcare workers or students, face greater challenges, especially as they lack training in translation theory and terminology management.

From my point of view, this lack of training is the main reason for their excessive reliance on literal translation, and this reliance is what leads to problems of inappropriate phrasing, inaccurate verbal structures, and weak style.

1 Henry Fischbach, *Translation and Medicine* (Amsterdam: John Benjamins, 1998), pp.12–14.

2 Anthony Pym, *Exploring Translation Theories* (London: Routledge, 2014), pp. 134.

These issues aren't always obvious at first glance, but they significantly affect the quality of the target text. Research shows that medical collocations, especially verb-noun and adjective noun combinations are particularly problematic. This is because they depend on established usage rather than dictionary meanings alone. (Agnieszka Szerszunowicz, 2019) ¹.

Based on this, non-professional translators often assume that knowing the meaning of individual words is enough, which simply isn't the case in medical discourse that when collocations are mistranslated, the text may still appear grammatically correct, but its meaning becomes unclear or misleading. I believe this contrast clearly shows that medical translation isn't just about bilingual ability, it's about specialized competence in same time the professional training and field-specific experience remain essential for producing reliable medical translations.

Evidence from Previous Studies

Empirical research on medical translation strongly supports the challenges discussed above. The Translating Medical Terminologies study the Difficulties and Suggestions, published in English Studies in Arabia, identifies several recurring problems, including terminological ambiguity, lack of standardization, and insufficient medical knowledge among translators. (Alasbahy and Shamsi 2023)² The study also concludes that many translation errors don't arise from linguistic weakness alone, but from a limited understanding of the underlying medical concepts. Other studies in modern scientific and medical terminology reach similar conclusions, and confirming that translation difficulties are exacerbated by the rapid growth of medical knowledge and the lack of standardized and regularly updated terminological resources.

For this why I'm sure that these clearly demonstrate that translating medical terminology isn't a simple technical task, but rather a multidimensional process involving intertwined linguistic, cultural, technical, and professional factors. In same time this reviewed literature demonstrates that understanding these

1 Agnieszka Szerszunowicz, "Medical Collocations in Translation: Problems Faced by Professional and Non-Professional Translators," *Uniwersyteckie Czasopismo Naukowe* 24 (2019): pp. 45–49.

2 Alasbahy, W. M., & Shamsi, M. (2023). Translating medical terminologies: Difficulties and suggestions. *Journal of English Studies in Arabia Felix*, 2(1), 1–9.

interconnected challenges is essential for developing effective translation strategies and practical solutions.

In my view, without such understanding, any attempt to improve medical translation remains incomplete. The following chapter will therefore focus on strategies aimed at addressing these problems in a systematic and practical manner.

The Impact of Errors in Translating Medical Terminology

Medical Translation Errors and Patient Safety

Errors in translating medical terminology aren't just linguistic problems; they can be serious mistakes. Unlike other types of translation errors, these errors can lead to adverse reactions, ineffective treatment, or overdoses and the research has shown that even simple terminological errors can alter the intended meaning of medical instructions, significantly increasing the risks to patients (Maeve Ohan, 2016).¹ In my opinion, what makes medical translation so sensitive is that there is no chance for approximation and any near-correct term is unacceptable in a clinical context. And even a minor translation error, an unclear phrase, or an inconsistent term can cause confusion and lead to incorrect medical procedures. Pharmaceutical documentation is one of the most sensitive areas affected by translation errors, such as incorrect translations of drug names, dosages, or instructions for use, which can lead to medication dispensing errors. In clinical settings, translated reports, discharge summaries, and diagnostic results are often used as primary reference documents. If terminology is not translated accurately or consistently, healthcare professionals may misunderstand patients conditions. This problem is exacerbated in multilingual healthcare settings, where clinicians rely heavily on translated materials because the original text is not always available.

Consequences for Medical Communication and Knowledge Transfer

The impact of terminological errors not limited to immediate clinical risks, but also, affects medical communication and the transfer of scientific knowledge. Medical research today is global, and findings are constantly shared across languages that when medical terms are translated inaccurately in research articles or textbooks, the scientific message can be distorted. Medical terminology exists to ensure precision and standardization. When that function breaks down in

¹ Maeve Olohan, *Scientific and Technical Translation* (London: Routledge, 2016), pp.134–136.

translation, conceptual confusion follows (Claudia V. Angelelli, 2004)¹ and for this reason I believe this is especially problematic in educational contexts.

Medical students and junior healthcare professionals often depend on translated materials to build their foundational knowledge. If the terminology they learn is inconsistent or incorrect, those misunderstandings may persist throughout their professional careers.

Another issue that shouldn't be overlooked is trust, that when healthcare professionals repeatedly encounter unreliable or inconsistent translations, they may stop relying on translated materials altogether.

Legal and Ethical Implications

Medical translation errors also carry legal and ethical consequences. In many healthcare systems, translated medical documents are legally binding, particularly in cases involving informed consent, patient rights, and medical liability.

A single mistranslated term in a consent form may invalidate consent or expose institutions to legal disputes (Mambetalieva, S., Zhang, J., & Osmonova, C. 2025).² Ethically, medical translators carry a heavy responsibility. Translation ethics emphasize accuracy, professional competence, and accountability. In medical contexts, this responsibility is even greater because the consequences of error can be severe. For this reason, translators who work beyond their level of medical expertise, even unintentionally, place both patients and institutions at risk. (Maeve Olohan, 2016)³

Also, there's an ethical dimension related to equity. Accurate medical translation ensures that patients who don't speak the dominant language receive equal access to healthcare information. When translations are poor, vulnerable populations are often the ones most affected, reinforcing existing inequalities in healthcare delivery. Terminological errors can have long term effects on both individual professionals and institutions. Hospitals, research centers, pharmaceutical companies, and public health organizations depend on accurate translation to maintain credibility and that if errors occur repeatedly, institutional reputation

1 Claudia V. Angelelli, *Medical Interpreting and Cross-Cultural Communication* (Cambridge: Cambridge University Press, 2004), pp.89–91.

2 Mambetalieva, S., Zhang, J., & Osmonova, C. (2025). Legal and Ethical Risks in Medical Translation: A Cross-National Perspective from English and Chinese Healthcare Systems. *Bulletin of Science and Practice*, 11(9), pp. 474-482.

3 Maeve Olohan, *Scientific and Technical Translation* (London: Routledge, 2016), pp. 134–136.

can suffer and for translators, frequent mistakes can seriously damage professional standing.

Medical translation is a specialized field, and credibility is built on demonstrated accuracy and reliability (Minako O'Hagan, 2016)¹ I've noticed that even a small number of terminological errors can lead to loss of trust and exclusion from professional opportunities.

Strategies and Solutions for Translating Modern Medical Terminology

Translation Strategies for Medical Terminology

Given how complex and sensitive medical terminology is, translators can't rely on intuition alone, and for this they need clear, well thought out strategies. I find the morphological analysis strategy the effective one, as it relies on analyzing medical terms by tracing them back to their roots and then identifying their suffixes to understand their true meaning, and not just their superficial form (Davi-Ellen Chabner, 2017)², and this strategy becomes more important when dealing with newly coined or unfamiliar terms that have become commonplace in modern medicine. Borrowing is also a common strategy in medical translation, especially when there is no approved equivalent in the target language. In such cases, quoting the original term is the best option, as it helps maintain accuracy and international consistency. However, borrowing shouldn't be overused. Excessive reliance on it can make the text incomprehensible, especially to non-specialist readers (Peter Newmark, 1988)³. In such cases, adding a brief explanation or clarification can make a significant difference like literal translation or borrowed translation, involves translating the internal structure of the term with keeping its original form. This method works good with complex medical terms and can help integrate new concepts into the target language but however, it isn't always risk-free, and if not carefully evaluated, literal translation can appear awkward or even misleading. I think, literal translation should only be used if it naturally conforms to the semantic and stylistic norms of the target language. Descriptive translation is often the most appropriate approach for texts intended for patients. Instead of reproducing the form of the original term, this approach explains its function or meaning.

1 Minako O'Hagan, "Quality Issues in Medical Translation," *Journal of Specialized Translation* 25 (2016): pp. 112–114.

2 Davi-Ellen Chabner, *The Language of Medicine*, 11th ed. (Philadelphia: Elsevier, 2017), pp.12–15.

3 Peter Newmark, *A Textbook of Translation* (London: Prentice Hall, 1988), pp. 82–85.

While it is true that descriptive translations aren't always concise, clarity is more important than brevity in medical contexts (Jean-Paul Vinay and Jean Darbelnet, 1995)¹. I believe that if the patient understands the information correctly, this strategy has achieved its goal.

Terminological Consistency and Standardization

Terminological consistency isn't optional in medical translation, it's essential and when the same medical term is translated in different ways within a single text or across related documents, confusion is almost inevitable. In my opinion, this is one of the fastest ways to undermine trust in translated medical materials.

One practical solution is the systematic use of terminological databases and glossaries. These tools help translators stick to validated equivalents and avoid unnecessary variation (Maeve Olohan, 2016)² Standardization efforts are especially important in languages where medical terminology is still evolving. In the Arabic context, for example, the lack of regularly updated and widely accepted medical term banks remains a serious challenge. (Juan C. Sager,1990)³ & (Said Faiq, 2001)⁴ I believe that translators should document their terminological choices and justify them using reliable sources. This practice doesn't just improve consistency; it also makes revision and peer review much easier. Over time, such documentation can contribute to stabilizing medical terminology in the target language. (Yaseen, H. S. 2013)⁵

The Role of Technology in Medical Terminology Translation

Technology has become an integral part of medical translation. CAT tools, terminology management systems RMS, and translation memories allow translators to store and reuse validated terminology. They don't replace human judgment, but they reduce inconsistency and save time, especially in large medical projects (Minako O'Hagan & Carmen Mangiron)⁶ Specialized medical

1 Jean-Paul Vinay and Jean Darbelnet, *Comparative Stylistics of French and English* (Amsterdam: John Benjamins, 1995), pp. 34–36.

2 Maeve Olohan, *Scientific and Technical Translation* (London: Routledge, 2016), pp. 140–142.

3 Juan C. Sager, *A Practical Course in Terminology Processing* (Amsterdam: John Benjamins, 1990), pp. 115–117.

4 Said Faiq, "Medical Translation into Arabic: A Practical Perspective," *The Translator* 7, no. 1 (2001): pp. 60–62.

5 Yaseen, H. S. S. (2013). *Terminological Inconsistency in Medical Translation from English into Arabic* (Master's thesis). An-Najah National University, Palestine, pp. 1-153.

6 Minako O'Hagan and Carmen Mangiron, *Game Localization* (Amsterdam: John Benjamins, 2013), pp. 52–54.

blogs are equally valuable. They provide real examples of how terms are used in authentic contexts. In my experience, blog-based verification is far more reliable than depending on intuition or general dictionaries. (Tony McEnery and Andrew Hardie, 2012)¹ It helps translators identify common collocations and avoid unnatural phrasing, also Ai app and machine translation are now part of the field as well. They're fast, and improving, but not reliable enough on their own. Medical texts generated by machines still need careful human review. (Sharon O'Brien, 2020)² Without specialized post editing, the level of risk remains unacceptable in sensitive medical contexts.

Translator Training and Interdisciplinary Collaboration

High-quality medical terminology translation depends heavily on training. Linguistic competence alone isn't enough. Translators need at least a foundational understanding of medical concepts, classifications, and discourse and for this why, specialized training programs that combine language and medical knowledge are essential. (Anthony Pym, 2014)³ In clear word, the continuous professional development also matters. Medicine evolves quickly, and translators who don't update their knowledge will fall behind. Workshops, conferences, and academic research help translators stay informed. Collaboration with healthcare professionals is another key factor and I think, direct communication with medical experts is clarifies issues that no dictionary can resolve. Which mean that interdisciplinary collaboration is particularly important in high-risk texts such as clinical trials or pharmaceutical documentation, and joint review processes help identify potential errors early and improve overall accuracy.

Functional and Audience-Oriented Approaches

Functionalist approaches, especially Scopus theory, offer useful guidance for medical translation. According to this perspective, translation choices should be driven by the purpose of the target text. In medicine, that purpose can vary widely. (Hans J. Vermeer, 1989)⁴ For specialist-oriented texts, strict

1 Tony McEnery and Andrew Hardie, *Corpus Linguistics* (Cambridge: Cambridge University Press, 2012), pp. 98–100.

2 Sharon O'Brien, "Machine Translation and Risk in Medical Translation," *Journal of Specialized Translation* 33 (2020): pp. 23–26.

3 Anthony Pym, *Exploring Translation Theories* (London: Routledge, 2014), pp.157–159.

4 Hans J. Vermeer, "Skopos and Commission in Translational Action," in *Readings in Translation Theory*, ed. Andrew Chesterman (Helsinki: Oy Finn Lectura Ab, 1989), pp. 174–176.

terminological precision and adherence to international standards are crucial. For patient-oriented texts, clarity and accessibility take priority.

I think a lot of translation problems appear when translators apply the same strategy to all medical texts without considering the audience. Audience awareness also helps reduce cultural and communicative barriers. Translators need to consider what the reader knows, what they expect, and what they actually need to understand and this sensitivity improves both accuracy and effectiveness.

Toward Best Practices in Medical Terminology Translation

These strategies collectively point to a set of best practices in translating modern medical terminology, including in-depth research, adherence to standardized terminology, reliance on credible sources, and close collaboration with medical professionals. Ultimately, translating medical terminology isn't merely a technical task, but a professional and ethical responsibility. By combining theory, technology, and interdisciplinary knowledge, translators can effectively address the challenges of modern medical terminology and make a genuine contribution to enhancing global health communication.

Applied Study

This applied study addresses the practical challenges associated with translating modern medical terminology from English into Arabic. It aims to identify translation problems and propose appropriate solutions, based on the theoretical framework presented in previous chapters. These terms were chosen because they are modern and commonly used in contemporary medical literature, and because they are difficult to translate due to their complexity or the lack of standard Arabic equivalents.

Precision Medicine

Problem: Literal translation “الطب الدقيق” keeps the form but may miss the idea of individualized treatment, since “الدقيق” could be interpreted as “accurate” rather than “personalized.”¹

Solution: Use “الطب الدقيق الموجه حسب الخصائص الفردية” in educational or patient texts. For specialist audiences, keep “الطب الدقيق” but define it clearly on first use.

Gene Editing

1 Maeve Olohan, *Scientific and Technical Translation* (London: Routledge, 2016), p. 146–148.

Problem: Arabic translations vary: “تحرير الجينات،” “تعديل الجينات،” “تحرير المورثات،” causing inconsistency. Literal translation doesn’t fully capture precision.¹

Solution: Prefer “تحرير الجينات،” which better reflects precise genetic intervention. Standardizing this term improves clarity across texts.

Biomarker

Problem: Arabic equivalents vary: “مؤشر حيوي،” “واسم حيوي،” or borrowed English terms, causing confusion in research.²

Solution: Use “واسم حيوي” consistently, with a clear definition for research texts.

Conclusion

This research demonstrates that medical translation transcends mere linguistic competence. Rapid scientific and technological advancements have led to the emergence of new medical terms for which there are no standardized Arabic equivalents. Consequently, translators face challenging choices that require balancing literal and semantic translation. This study also reveals that translation errors in this field are not simply formal or stylistic issues; they can directly impact patient safety, clinical decision-making, and legal liability. Any inaccurate translation can lead to misdiagnosis, inappropriate treatment, or even a loss of confidence in medical texts, making medical translation one of the high-risk professions. The research underscores the pivotal role of the translator's experience, emphasizing that successful medical translation depends on multidisciplinary competence that combines linguistic skills with specialized medical knowledge. A comparison between professional and non-professional translators shows that inadequate training and limited awareness of terminology significantly increase the likelihood of errors, particularly in the use of collocations and specialized expressions. This highlights the critical need for specialized education and continuous professional development in the field of medical translation. Another important finding is the importance of not relying on a single strategy. Effective translation relies on the flexible and thoughtful use of several strategies, including morphological analysis, borrowing, derivational translation, and descriptive translation. The function of the text and the target audience are also crucial factors. While highly specialized texts demand

1 Juan C. Sager, A Practical Course in Terminology Processing (Amsterdam: John Benjamins, 1990), pp. 133–135.

2 Said Faiq, “Medical Translation into Arabic: A Practical Perspective,” The Translator 7, no. 1 (2001): pp. 61–63.

meticulous precision and adherence to international standards, texts intended for patients require clarity, ease of understanding, and explanatory support. Based on these findings, several recommendations emerge, including: establishing specialized medical terminology committees comprising translators, medical experts, and linguists to standardize and update medical terminology, particularly in Arabic; implementing ongoing training programs to equip translators with up-to-date medical knowledge, terminological skills, and ethical awareness; and investing in technological tools such as terminology banks, translation memory, and specialized language collections, ensuring that these tools support, rather than replace, human expertise. Qualified human review remains essential.

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