DOI: https://doi.org/10.33295/1992-576X-2025-4-125

UDC 616.314-089.87:331.101.3+331.103.2+616.314-07(045)

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Methodological Approaches to Measuring Dental Surgeons' Workload in Surgical Practice

▷ **Abstract.** Abstract. The advancement of medicine, particularly in dentistry, is a key factor in ensuring the delivery of quality healthcare. The implementation of innovative technologies and research methodologies contributes to the improvement of healthcare systems in Ukraine. One of the criteria for evaluating dental care quality is the duration of procedures, assessed through time standards and conditional labor intensity units. For the objective determination of such indicators, an officially approved methodological framework is necessary.

In 1999, Ukraine implemented a labor standardization methodology that became the foundation for evaluating the efficiency of dental practitioners. Regular review and updating of these methodologies is essential for integrating global experience and ensuring compliance with contemporary standards.

Based on the data above, this research aims to enhance the efficiency of dental care provision to the Ukrainian population by developing methodological provisions for a unified system of assessment, accounting, and monitoring of dental surgeons' work during surgical appointments.

To achieve this goal, several objectives were established, with the primary one being the creation of fundamental methodological provisions that ensure objectivity and accuracy in the process of accounting, assessment, and monitoring of oral surgeons' work.

The time standard (*TS*) for providing surgical care is determined as the sum of permanent (T_p) and variable-repeatable (T_{vr}) time expenditures, specifically:

$$TS = T_p + T_{vr}.$$

This approach enables the establishment of individual standards for each type of dental intervention, ensuring accuracy, efficiency, and adherence to contemporary quality standards for medical care.

Subsequently, after establishing the necessary *TS* indicators, a methodology is applied to determine labor expenditures specifically for surgical appointments. This approach utilizes a formula for determining conditional labor intensity unit (CLU) indicators in absolute numbers:

$$CLU = \frac{T_{ts}}{T_{1CLU}},$$

The conclusions highlight the importance of standardizing all types of surgical dental care, including the implementation of digital protocols. Methodological measures aimed at determining labor expenditures are optimal for oral surgery.

Keywords: *conditional labor intensity units, time standards, chronometry, digital protocols, clinical protocols, surgical appointment.*

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Relevance

The development of medicine is a key factor in ensuring quality healthcare that meets contemporary requirements. Dentistry, as a critical component of medicine, is also undergoing significant changes associated with the implementation of innovative technologies and research methodologies. Continu-

ous improvement of quality and quantity criteria for healthcare provision plays a crucial role in creating an effective healthcare system in Ukraine [1].

One of the key criteria determining the quality of dental care provision is the duration of the most common procedures. It is expressed through time standards and conditional labor intensity units (CLU), which help evaluate the efficiency of dental practitioners at all stages of the clinical process.

To conduct such research and determine objective standards, a methodological framework is required that has official approval at the level of the Ministry of Health of Ukraine. Without this, research results cannot be considered either scientifically substantiated or legally reliable [2, 3].

In Ukraine, an officially approved methodological framework exists for conducting such research. In 1999, a methodology for standardizing dental practitioners' work was implemented, developed, and modified under the guidance of Professor V. A. Labunets [4]. This methodology became the foundation for objectively determining the labor intensity of dental procedures and creating standards for evaluating the efficiency of healthcare professionals [9].

In conditions of rapid technological development, there arises a necessity for regular review and updating of existing standards and methodologies. New instruments, materials, and digital approaches alter the duration and labor intensity of procedures; therefore, scientific research in this field must be continuous. It is also essential to integrate global experience into the Ukrainian medical system to create a contemporary and highly efficient system of dental care [5–12].

Based on the data above, this research aims to enhance the efficiency of dental care provision to the Ukrainian population by developing methodological provisions for a unified system of assessment, accounting, and monitoring of dental practitioners' work during surgical appointments.

To achieve this goal, several objectives were established, with the primary one being the creation of fundamental methodological provisions that ensure objectivity and accuracy in the process of accounting, assessment, and monitoring of oral surgeons' work.

This approach is directed at improving the efficiency of practitioners' work, optimizing labor processes, and further developing the dental field to meet contemporary standards of healthcare quality.

Material and Methods

According to the methodology applied in our research, it is first necessary to define the research object. In our case, these are oral surgeons of various qualifications, employed in healthcare institutions of different ownership forms, and located in various regions of Ukraine. This will enable the collection of a representative cross-section of the situation in the field of providing relevant care, considering both urban and rural areas. At the same time, the research subject was the nomenclature of the most common types of surgical care provided in Ukraine. In particular, this aspect enables the systematization of existing services and the determination of their scope and complexity. Such an approach is crucial for harmonizing labor standards and establishing a unified methodological framework.

The second research object is the duration of providing oral surgical care, which is a critical characteristic of the quality of such services. This includes a detailed study of time norms that affect work efficiency. The subject in this context is methodological measures and techniques aimed at determining the duration of procedures, as well as developing a unified system for assessing, accounting for, and monitoring the work of oral surgeons.

The proposed approaches aim to optimize labor processes, increase productivity, and ensure the delivery of high-quality healthcare services in dentistry.

Results and Discussion

In dentistry, one of the key aspects is the implementation of unified methodologies for accounting, assessment, and monitoring of healthcare professionals' work. According to existing and officially approved methodological provisions, scientific research employs various approaches that enable the systematization of data, improvement of treatment quality, and establishment of objective standards.

Scientific research in the field of dentistry and maxillofacial surgery is no exception and is conducted based on three fundamental methods: observational, analytical, and research-based. Each method provides a unique approach to analyzing treatment processes, labor, and the structure of technological stages.

The observational method involves monitoring clinical processes without active intervention. This method is fundamental for:

- collecting primary data;
- studying the structures of treatment processes;
- analyzing treatment algorithms;
- establishing the sequence and efficiency of work stages.

Its application enables the most accurate determination of patients' needs and the optimization of dental practitioners' work.

The analytical method is based on systematic analysis of data obtained from the analysis of specialized literature, surveys of dental practitioners, and researchers' personal experience, and enables:

• identifying the nomenclature of surgical services most frequently utilized;

• researching and analyzing the structure of labor elements at different treatment stages;

• establishing objective labor standards for dental practitioners.

This method enables the creation of standards for compliance with contemporary requirements for healthcare quality.

The chronometric method (research-based) involves precise measurement of the time necessary for performing specific procedures. Its use helps to:

• Evaluate the labor intensity of dental services;

• Optimize technological processes;

• Develop standards for increasing labor productivity.

When establishing time standards, according to the methodology, special attention should be paid to careful indexation of labor expenditures, which considers constant expenditures of a dental practitioner's working time (T_p) and variable, repeatable expenditures (T_{vr}). Constant time expenditures (T_c) are universal and remain unchanged regardless of the type of care; for example, the procedure of oral cavity examination. Variable-repeatable working time expenditures (T_{vr}), conversely, depend on the specifics of the procedure, such as extracting a certain number of teeth from one patient.

Accordingly, the time standard (*TS*) for providing surgical care is determined as the sum of permanent (T_p) and variable-repeatable (T_{vr}) time expenditures, specifically:

$$TS = T_p + T_{vr}.$$

This approach enables the establishment of individual standards for each type of dental intervention, ensuring accuracy, efficiency, and adherence to current requirements for healthcare quality.

Subsequently, after establishing the necessary TS indicators, a methodology is applied to determine labor expenditures specifically for surgical appointments. This approach utilizes a formula for determining conditional labor intensity unit (*CLU*) indicators in absolute numbers:

$$CLU = \frac{T_{ts}}{T_{1CLU}},$$

where CLU represents the conditional labor intensity unit indicator; T_{ts} denotes the time standard, expressed in minutes; and T_{1CLU} represents the time of one conditional labor intensity unit in minutes.

It is imperative to note that both indicators, Tts and T_{1CLU}, must be presented in the same units of measurement. The value of T_{1CLU} is determined conditionally and corresponds to the objective time interval necessary for creating a reference construction—Order of the Ministry of Health of Ukraine [3].

Conclusions

Conclusions drawn based on the analysis of specialized literature and surveys of dental practitioners indicate the relevance of standardizing all types of surgical dental care, including the application of digital protocols. Methodological measures aimed at determining labor expenditures are optimal for oral surgery as well. The time standard (*TS*) for providing relevant care should be determined as the sum of permanent (T_p) and variable-repeatable (T_{vr}) expenditures according to the formula:

$$TS = T_p + T_{vr}.$$

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Методичні підходи до визначення трудових витрат лікарів-стоматологів на хірургічному прийомі

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Анотація. Розвиток медицини, зокрема стоматології, є ключовим чинником забезпечення якісної медичної допомоги. Упровадження новітніх технологій і методів дослідження сприяє удосконаленню системи охорони здоров'я в Україні. Одним із критеріїв якості стоматологічної допомоги є тривалість процедур, що оцінюється за нормативами часу та умовними одиницями трудомісткості. Для об'єктивного визначення таких показників необхідна офіційно затверджена методична база.

У 1999 р. в Україні впроваджено методику нормування праці, яка стала основою для оцінювання ефективності роботи лікарів-стоматологів. Регулярний перегляд і оновлення таких методик є важливим для інтеграції світового досвіду та забезпечення відповідності сучасним стандартам.

Мета: підвищити ефективність надання стоматологічної допомоги населенню України розробленням методичних положень уніфікованої системи оцінювання, обліку та контролю праці лікарів-стоматологів на хірургічному прийомі.

Для досягнення мети було поставлено низку завдань, серед яких основним є створення основних методичних положень, що дають можливість забезпечити об'єктивність і точність у процесі обліку, оцінення та контролю праці лікарів-стоматологів-хірургів.

Норматив часу (*НЧ*) для надання хірургічної допомоги визначають як суму постійних ($T_п$) та змінно-повторювальних ($T_{зп}$) витрат часу, а саме:

$$НЧ = T_п + T_{зп}.$$

Такий підхід дає змогу встановити індивідуальні стандарти для кожного типу стоматологічного втручання, забезпечуючи точність, ефективність і дотримання сучасних вимог якості медичної допомоги.

Після встановлення необхідних показників НЧ застосовують методику встановлення трудових витрат саме на хірургічному прийомі. У цьому підході використовують формулу для визначення показників умовної одиниці трудомісткості (УОТ) в абсолютних одиницях:

$$УОТ = \frac{T_{НЧ}}{T_{1УОТ}}.$$

Висновки. Нормування всіх видів хірургічної стоматологічної допомоги, включно із застосуванням цифрових протоколів, є актуальним. Методичні заходи, спрямовані на визначення трудових витрат, оптимальні для хірургічної стоматології.

Ключові слова: *умовні одиниці трудомісткості, норматив часу, хронометраж, цифрові протоколи, клінічні протоколи, хірургічний прийом.*

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The article was submitted to the editorial office on May 28, 2025, and accepted for publication on June 18, 2025.