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## Criteria for Assessing the Quality of Forensic Activities in Different Countries of the World

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### Abstract

The globalization of the world community has contributed to qualitative changes in the socio-economic sphere, which has led to the transformation of crime in the Republic of Azerbaijan. Nowadays, forensic expertise has become a key tool in the process of administering justice. Criminal proceedings are no exception. Application of special knowledge in the process of revealing and investigating crimes, providing the right for defense and representing the rights of victims has a special importance in building a legal and democratic society in Azerbaijan. Accreditation of forensic laboratories is a prerequisite for determining the criteria for assessing the quality of forensic activities in the Republic of Azerbaijan. The purpose of the scientific research is to identify the criteria for assessing the quality of forensic activities in the Republic of Azerbaijan, in comparison with other countries of the globe. To achieve this goal, a system of philosophical, general scientific and special scientific methods (comparison, description, analysis and synthesis, induction, deduction and analogy, abstraction, generalization, systematic approach and others) was used. Theoretical, normative-legal and practical problems of formation and application of criteria of forensic activity quality assessment in the Republic of Azerbaijan were examined. The study showed that the problems of determining the criteria for assessing the quality and accreditation of forensic activities were not properly ensured due to the imperfections of the current legislation in the Republic of Azerbaijan. The study resulted in the developing indicators to assess the quality of forensic institutions, such as regulatory, methodological, organizational. The practical value of the research lies in the presentation of a detailed analysis of the experience of implementing new approaches of courts of expertise in countries with different courts of occupation. The study is of practical interest to the judicial system officials involved in the development of the legal framework for conducting court cases

**Keywords:** accreditation of forensic laboratories, international experience, quality assurance, standards, legislation, criteria expertise

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## Introduction

In the objective and accurate assessment of the quality level of performance (resulting activity) in some particular fields, it is important to correctly define the evaluation criteria, taking into account the specific characteristics of a respective area. In such a case, a legitimate question arises of what the criterion is, what it essentially contains, how it should be chosen and accepted, so it allows a full assessment of current reality. Although there are different views and positions on these questions, it is appropriate to draw attention to some provisions that are more complete and have explanations:

- a standard by which decisions, evaluations or classifications are made [1];
- criterion – a condition or fact used as a standard by which something can be judged or considered [2];
- a criterion is a standard or principle by which something is judged, evaluated, and helps make decisions. Criterion is a word of Greek origin, derived from the word “*kriterion*” and used since the 17<sup>th</sup> century. The literal meaning of the word is “judgment” [3].

As it can be seen, although the history of the use of the word criterion is quite long and there are certain similar positions, there has not been a complete consensus thereon. It is possible to conclude that concrete evidence is needed in every situation in order to be able to comment, evaluate and make a judgment on this or that subject.

The criterion from a philosophical point of view, taking into account the specific characteristics of the field, can be considered a judgment tool for describing objective reality in the evaluation of measurable and non-measurable situations. In the activity of forensic expertise, it is more appropriate to accept the criterion as a judgment. Because many of the events and processes faced by forensic expertise occur outside the current standards and accepted dimensions. Perspectively, ensuring perfection (quality) in the evaluation of the real situation in the field of forensic expertise is considered an objective necessity. Based on the research, it is concluded that for evaluating the quality and assurance of forensic expertise those criteria should be selected taking into account the specific characteristics of individual departments and units operating in the structure of expertise institutions. The criteria chosen should provide a basis for making an objective, accurate and comprehensive judgment on the evaluation of internal and external quality assurance of the expertise institution and its departments as a whole.

External quality assurance is evaluated as “accreditation” in many areas, including forensic institutions. Therefore, it is important to clarify the content and essence of accreditation and study the attitudes of experts on the issue. Although there are many views and opinions in this field, it is appropriate to present some which are more understandable. For example, in the Oxford English dictionary, “accreditation” is defined as “a formal approval by an independent organization that someone or something meets a required standard” [4].

In a document jointly prepared by the World Health Organization, the Organization for Economic Co-operation and Development and the World Bank entitled “Providing quality health services: the global imperative for universal health coverage”, “accreditation”, it is defined as an activity that represents an external evaluation of an organization by an accreditation body and improves public recognition of an organization’s compliance with predetermined standards. Delivering quality health services: a global imperative for universal health coverage [5].

According to the position of the Turkish Accreditation Agency (Türk Akreditasyon Kurumu, TÜRKAK), another reliable source, “accreditation” is a quality subsystem created to support the reliability and validity of the studies conducted by the conformity assessment bodies and the documents (test and inspection reports, calibration certificates, management system documents, product certification documents, personnel certification documents, etc.) certifying the conformity they have created as a result of these studies [6]. Accreditation is the activity of evaluating, approving and subsequently auditing the laboratory’s technical competence by an internationally recognized and authorized institution according to the necessary criteria to ensure the reliability of the tests and analyses [7].

The publication “Accreditation: A Global Tool to Support Public Policy”, prepared by well-known international organizations, the International Laboratory Accreditation Cooperation and the International Accreditation Forum, states that accreditation is used to verify compliance with a standard [8]. Accreditation is an unbiased and objective process carried out by third parties, offering the least repetitive, most transparent and acceptable way to provide reliable conformity assessment results. In another document published in 2015 by the International Laboratory Accreditation Cooperation, “accreditation” is defined as a means of determining the technical competence of testing, calibration and medical laboratories to perform specific types of testing, measurement and calibration [9].

According to D. Montagu [10], a professor at the University of California, “accreditation” is a formal process by which a recognized body, usually a non-governmental organization, evaluates and recognizes that a particular organization meets predetermined and published standards. From the summary of views and positions of research scientists and specialists on this issue, concluded that “accreditation” includes the process of evaluating the independent organization’s product manufacture, work and services performed in accordance with predetermined standards or compliance with relevant norms by international organizations or local accreditation bodies. This position is reflected in the Law of the Republic of Azerbaijan “On accreditation in the field of conformity assessment” dated May 30, 2014. Thus, accreditation is defined as conformity assessment in Article 1.0.1 of the

Law and determined as defining the compliance of the goods (service, work), process, management system and staff with the requirements specified in the relevant standard, technical regulation and other normative-legal acts [11].

The topic of standardizing the process of accreditation of forensic laboratories also attracted the attention of scientists. For example, L. Wilson-Wilde [12] provides an overview of the development of standards in the field of forensics, arguing that the most important initiative at this stage in the development of the industry is the work on the creation of ISO standards. The article describes in detail the bodies that are directly related to the creation and approval of standards for forensic laboratories. A separate vector of the article is a discussion on the topic of navigating the international management of standards development. Standards can be applied through certification, self-regulation, and accreditation. Another study conducted by the Polish scientist M. Sikorski [13] concludes that the results of a forensic medical examination should be questioned. The author believes that the results of the forensic medical examination, which are considered in the trial, and which court decisions rely on when sentencing, are unreliable during the trial. M. Sikorski [13] proposes to increase the efficiency of conducting research similar to large-scale projects in psychology, namely the approach to repetition in psychology.

The experience of involving forensic advisers in the process of solving a criminal case is quite often used in Belgium. Scientists Bitzer et al. [14] note that this approach has led the country's forensic science industry both to positive results and to some problems. However, while advisers were previously only invited to collect and analyze details on particularly complex murder cases, now their presence can be requested for the investigation of lesser crimes. Forensic advisers are the link between the magistrate, investigators, and forensic experts, to whom they provide the results of the processing of traces identified using new technologies. The authors also mention that despite the increased need to attract additional experts, there is no legal basis for regulating their activities in Belgium. C.A. Reid and L.M. Howes [15] examined the effectiveness of issuing brief summary reports with the main charges in a case during a trial in Tasmania. The reports were analyzed according to the criteria of compliance with standardized recommendations, practical studies, and notes. In the course of the analysis of ten especially serious crimes, the scientists came to the conclusion that this practice was quite justified, since, in general, the compiled brief reports had a high level of information content. Scientists believe that subject to additional research, this type of forensic communication can be successfully introduced into the conduct of court cases.

Scientific study of the problems of determining the criteria for assessing the quality of forensic activities Azerbaijan and countries of the world, is the actual task

of the research. The scientific value of the presented study lies in searching for relevant forensic expertise approaches to provide fair disclosure of criminal cases to formulate a democratic system in the country.

### **Materials and Methods**

The study examined the provisions, decisions, and norms of national and international measures of forensic accreditation. The object of scientific research was the problem of formation of criteria for assessing the quality of forensic activities in different countries of the world and in the Republic of Azerbaijan.

The main method of investigating the problems of determining the criteria for assessing the quality of forensic activities in different countries of the world, including the Republic of Azerbaijan is a dialectical method of knowledge. The dialectical method of cognition allowed to formulate recommendations for the development of criteria for assessing the quality of forensic activities in different countries of the world forensic activities on the basis of the Law "On Forensic Activities" [16] and international standards ISO/IEC 17025 [17] and ISO/IEC 17020 [18].

The following philosophical categories were used as an instrument of cognition: quantity and quality, content and form, necessary and accidental, cause and effect, general, special and singular, cause and effect, essence and phenomenon. In considering the topic of the publication the author was guided by a system of specially scientific methods of legal knowledge, which include: analysis, synthesis, formal-logical, system-structural and comparative-legal methods.

In the process of applying the formal-logical method of researching the problems of forming the criteria for assessing the quality of forensic-expert work, the problem of the lack of a body that will carry out internal and external evaluation was identified. In the process of studying the problems of legislative support for assessing the level of quality of forensic the system method was applied. The systematic method involves the consideration of the subject of scientific research as a system, which has a certain structure containing interrelated elements. Comparative-legal method and method of analysis allowed considering the legislative and law enforcement experience of forensic accreditation in foreign countries, on the example of the European Union and the Republic of Azerbaijan.

The method of synthesis allowed generalizing and highlighting features and systematically identifying common and different trends of normative-legal regulation of accreditation in the European Union and the Republic of Azerbaijan. In the process of reasoning and justification of the connection between the concepts, the formal-logical method was applied in the study of the concept of "criterion" and "accreditation". The formal-logical method was applied in the process of describing the indicators for assessing the quality of forensic activities, which resulted in the identification

of normative, methodological and organizational criteria. The system-structural method allowed identifying a number of regulatory and legal measures for the optimal implementation of certain aspects of accreditation in the Republic of Azerbaijan.

## Results

The Forensic Expertise Center of the Ministry of Justice of the Republic of Azerbaijan has partially established its work in accordance with the ISO/IEC 17025 International Standard and ISO/IEC 17020 [18] guidelines and accreditation of the Quality Assurance Center is regularly carried out by TURKAK, the accreditation body of the brother Republic of Turkey. There are no standards for forensic expertise in local accreditation bodies of the Republic of Azerbaijan, and these standards have not been developed since this field is a special one. Therefore, it has been deemed appropriate to apply ISO/IEC 17025 standards [17] and ISO/IEC 17020 [18] guidelines, which are considered more honest and objective in this field, to the activities of the expertise center. However, it should be noted that ISO/IEC 17025 [17] and ISO/IEC 17020 [18] standards do not cover all areas of forensic activity. Therefore, it is considered important to perform scientific-research works, including areas not covered by ISO/IEC 17020 [18] standards, prepare and improve new methods and methodologies of expert research, provide scientific-methodical assistance to judicial and law enforcement agencies and develop internal standards for expert preventive activities. Otherwise, the mentioned areas may be completely ignored due to the lack of any normative-legal document on the evaluation of the results of their activities.

Meanwhile, the analysis of the materials on the accreditation assessment conducted in the field of "Conducting forensic expertise and research" covered by ISO/IEC 17025 [17] and ISO/IEC 17020 [18] standards shows that this standard and accreditation assessment included the evaluation of issues related to internal quality assurance in many cases, along with the external quality assurance of the expertise center in the relevant field. In this context, TURKAK, with the status of an international accreditation organization, needs to correct the external and internal quality limits of the evaluation in its activities. Because although external and internal quality assurance complements each other, defining the border between them is considered one of the indicators of quality culture and level. At this time, it should be taken into account that if the assessment of external quality assurance mainly involves measurable factors (for example, evaluation of the conformity of material and technical base, personnel potential, methodical provision with relevant standards and norms), along with the mentioned factors in internal quality assurance, non-measurable factors also affect the quality assessment process.

Quality assurance and determination of evaluation criteria, which are the constituent elements of the

quality management system, are equally important for forensic activity. The international standards applied in the quality management system of forensic expertise require their systematization by indicating the components involved in the preparation of a quality final product. However, no attention is paid to measuring the application level of those components. Carrying out the evaluation of legislation, organizational normative documents of enterprises, methodical tools with measurable and non-measurable criteria in expert activity may allow measure the limit of their application and determine the quality level of the final product.

Upon reviewing the content of the international standard, it was determined that the sources used therein, the subjects and objects involved should be monitored regularly for the quality of expert opinion. The first object that appears in this context is personnel composition. The procedure for determining the professional competence of personnel, that is, their competence, is one of the conditions for conducting appropriate (internal and external) tests. In addition, to keep the knowledge and skills of the personnel at the required level, they should be regularly involved in training and teaching processes. Such procedures also apply methodological tools used as sources, where the validity and reliability of methodological tools are determined through verification and validation.

With regard to technical means, the inspection includes their calibration, adjustment and determination of functional suitability. The listed aspects act as the main parameters. Others include environmental impact, expected management principles, and work area requirements. The aim is to achieve a perfect result and to eliminate or minimize the number of errors in the expert's activity with the mechanisms of international standards. By describing the instructions of the international standard on the mentioned parameters, the difference between the inspection and the evaluation criteria that can be measured during the development of the proposed product is shown.

In general, the requirement of the standard implies the achievement of the objectives of the quality system by ensuring the quality of the components (as a subject – an expert, as an object – technical means, and as a source – methodical means) involved in the development of the product. Within these components, evaluation criteria and parameters for measuring the level of quality assurance can be determined according to the stage of product formation. Here, it is appropriate to highlight a specific aspect. Defining quality assessment criteria also raises the question of which body will assess them. In response, two types of such evaluation can be distinguished – internal evaluation and external evaluation. Therefore, essentially, the criteria should be divided into two groups. One of them exists during product development and is evaluated in a subordinate manner, that is, at the internal level. The other is the evaluation of the final product by the subjects who are

the initiators and authorized to do so, i.e., the customers, and the existing criteria in this direction.

It is important to find a mechanism for the formation of criteria for expert activity and their sorting in the research process when determining indicators of the performance of tasks arising from legislation, methods and solving organizational issues. The necessity such as drawing up an opinion by an authorized expert as a matter arising from the law, that is, a normative document, determining of addressing the questions posed to the research to an expert with appropriate authority and availability of the eligibility criteria may be shown as an example. Violation of this criterion directly affects the quality of the review. From this starting point, the internal and external criteria of the expert research process can be determined [19; 20].

In a staged study, where the quality assurance procedure is carried out by an expert, one of the important conditions for the successful completion of the study and excellent results is compliance with regulatory and methodological guidelines. The general tasks of preparation considered the first stage are listed below. At this stage, the methods of observation, comparison, and determination are used and the following tasks are performed:

1. Resolution of normative issues: (1) the presence of the type of expertise and compliance with the approved list; (2) justification, motive, initiative of appointment of expertise as a procedural measure; (3) the research questions belonging to the expert's specialty; (4) the research object belonging to the type of expertise, specialty; (5) making clarifications with the entity that appoints the expertise (completion of the research object, submission of an additional object, the necessity of on-site inspection of the object); (6) compliance with the form of presentation of the research object, and the procedure for formalization.

2. Resolution of methodological issues: (1) indication of the source, methodology to which the expert method is referred; (2) compliance of the method with the expert's qualification and its use in the expert's qualification.

3. Resolution of organizational issues: (1) compliance with the procedural terms established for expertise; (2) ensuring that all of them join the research when the research includes several types of expertise.

Thus, the criteria of the initial stage can be attributed to feasibility, completeness, compatibility, and authority. The performance quality evaluation indicators and a group of issues (normative, methodical, organizational) covered by the evaluation are reflected in the Table 1.

**Table 1.** Quality assessment indicators

| Criteria, indicators and solving issues for evaluating the quality of the initial stage of expert research |   |                                     |
|--|---|-------------------------------------|
| Criteria   | Criterion evaluation indicators   | Issues resolved by evaluation       |
| Possibility  | The presence of the type of expertise and compliance with the approved list; justification, motive, initiative of appointment of expertise as a procedural measure                  | Resolution of normative issues      |
| Completeness   | Making clarifications with the entity that appoints the expertise (necessity of completing the research object, submitting an additional object, examining the object on-site)      |                                     |
| Compatibility  | Compliance with the form of presentation of the research object, the procedure for formalization  |                                     |
| Authority  | Whether the research questions belong to the expert's specialty; belonging to the type of expertise and specialty of the research object  | Resolution of methodological issues |
| Compliance   | Indication of the source and methodology to which the expert method is referred; compliance of the method with the expert's qualification and its use in the expert's qualification |                                     |
| Completeness   | Compliance with procedural deadlines for expertise; ensuring access to all types when the research refers to several types of expertise   | Resolution of organizational issues |

Source: compiled by the author

The tasks of the next stages of expert research are closer and the sources cited in their implementation are similar or of the same type, so it is appropriate to express performance criteria and evaluation indicators together. At the same time, the level of solving the tasks of the next stages depends to a large extent on the expert's knowledge and skills. Therefore, this factor needs to be taken into account when formulating the criteria for stages.

In analytical research, which acts as the second stage of expert research, tasks are oriented directly to

the research object. General criminalistic methods of observation, measurement, modeling, description and others are applied here. The purpose of applying those methods is to reveal the characteristics of the research object and to form a position on the questions posed to the expert. Depending on the questions posed to the expert, at this stage, it may be possible to finalize the description of the research and proceed directly to the conclusion. Research conducted in this way in the field of expertise is called diagnostic research, and in this

case, general criminalistic methods are mainly used. In the research process, it is also possible to refer to the requirements of normative documents, existing standards in case investigation, and methods developed in the specific expertise field. The result of the stage shows the state of the research object and can conclude with a positive, negative, or uncertain ending.

The next stage of the research involves the identification of the research object specific to certain group areas of expertise, and special forensic methods are used. The task of this stage is aimed at determining the identity and similarity of the signs detected in the research object in terms of quantity and quality. In the previous stage, the qualitative and quantitative criteria of the research object are important elements, but they are aimed at determining the status of the object. The result of this stage can be concluded as positive, negative, probability. At these stages, compliance with the procedural deadlines (timely implementation, feedback, material return, etc.), preventing confusion in the collection of samples and choosing the right methodology used during the research, and expectation of consistency of the applied methods are considered quality assurance conditions.

Taking into account the credibility and reliability of the research conducted initially, the main criteria at the analyzed stages are highlighted. There are other important criteria to expect for expert research. These include objectivity, completeness, and comprehensiveness.

The sequence of actions that can ensure the performance of tasks during the research phases is as follows:

1. Resolution of normative issues: (1) conducting research in accordance with the Instruction on the organization of expertise; (2) working out the research in accordance with the formal requirements of the legislation; (3) ensuring the objectivity, completeness, and comprehensiveness of the research in the order of subordination (subordination relations arising from the position); establishing a mechanism for monitoring research periods; (4) formalization of obtaining samples; (5) ensuring control of the protection of research boundaries on specialties.

2. Resolution of methodological issues: (1) correct selection of general criminalistic methods and special methods; (2) expected consistency of applied methods; (3) determining the scope and extent of the research; (4) ensuring the quality and reliability of the detected signs, expecting them to be sufficient; (5) ensuring the observation of the progress of the research with images and visuals; (6) being acceptable and legal of the methods used.

3. Resolution of organizational issues: (1) establishment of mechanisms for compliance with research implementation periods; (2) keeping the registration and refund procedures; (3) prevention of confusion in collecting samples for research.

Based on the above, it is possible to distinguish such criteria as completeness, comprehensiveness, reliability, validity, sufficiency and legality by stages (Table 2).

**Table 2.** Criteria for peer review

| Criteria, indicators and solving issues for evaluating the quality of the initial stage of expert research |   |                                     |
|--|---|-------------------------------------|
| Criteria   | Criterion evaluation indicators   | Issues resolved by evaluation       |
| Legality   | Conducting the research according to the instructions, due to the requirement of the procedural type of expertise;<br>working out the research in accordance with the formal requirements of the legislation;<br>controlling the objectivity, completeness, and comprehensiveness of the research in a subordination order;<br>establishment of a mechanism for monitoring the duration of research | Resolution of normative issues      |
| Reliability  | Formalization of obtaining samples;<br>control of the protection of research boundaries on specialties  |                                     |
| Reliability  | Correct selection of general criminalistic methods and special methods  | Resolution of methodological issues |
| Completeness   | Keeping the consistency of the applied methods;<br>determining the limit and scope of the research  |                                     |
| Sufficiency  | Ensuring the quality and reliability of the detected signs, expecting them to be sufficient   |                                     |
| Credibility  | Providing observation of the research progress with images and visuals  |                                     |
| Legality   | Being acceptable and legal of the methods used  | Resolution of organizational issues |
| Completeness   | Establishment of mechanisms for compliance with research implementation periods   |                                     |
| Legality   | Keeping the registration and default refund procedures  |                                     |
| Reliability  | Prevention of confusion in collecting samples for research  |                                     |

Source: compiled by the author

According to Article 26 of the Law “On Forensic Expertise Activity” [16], it is necessary to evaluate the results of the research in the expert opinion, to justify and fairly express the final results on the questions. Unlike other stages, participation of process participants is not allowed during the finalization of the results obtained. Methodologically, the expert opinion should be based on the research results, and the results obtained via technical means, methodical means, and expert opinion should be expressed in a reasonable, clear and straight manner.

It is necessary to solve one more issue making up the totality of quality assurance in expertise creation, and deemed as a continuation and an integral part of the proposal mentioned above. It is the precise determination of the duties, tasks and targets that should be performed by the structural entities (departments, sections) making up the structure of the expertise institutions and operating within it. Each of the expertise institutions has its own Regulations that determine the directions of activity as a separate institution. Regulations generally reflect the duties and rights of institutions and the direction of their activities. The availability of a document regulating the activities of the structural divisions and departments responsible for the execution of the works, in turn, leads to the uncertainty of the work scope to be performed by each division. The presence of the manual of each department and unit will reflect both general and specific features of its activity. Therefore, in addition to the scope of work and services to be performed by the department, it will be possible to provide the necessary control over its implementation. Simultaneously, it will be possible to react flexibly to the deviations and shortcomings in the expertise activity.

## **Discussion**

The analysis of the publications related to the area under consideration showed that the developments on the evaluation of forensic results by statistical methods, the implementation of quality management system in forensic laboratories, as well as the analysis of the errors of such implementation, were carried out all over the world. These issues have been studied quite extensively, but there is no unified system of standardization procedures implemented in forensic activities in the foreign literature.

A.K.S Alshebel writes that standardization is defined as the process of bringing similar activities to the same qualities [21]. Accreditation is carried out on the basis of international requirements. These requirements include criteria for assessing compliance with the specific requirements of certain activities and internationally recognized requirements in guidance documents. Such documents are developed by regional or international accreditation bodies [22].

Cooperation on International Traceability in Analytical Chemistry (CITAC) provides a procedure for

government agencies to recognize the provision of certain services by competent units. The definition of accreditation for a laboratory involves the technical competence of the laboratory. The laboratory is evaluated and periodically checked for the reliability of tests and analyses performed. This evaluation is carried out by a competent authority in accordance with international standards. Quality assurance is a system for ensuring the quality of the work performed [23].

The International Laboratory Accreditation Cooperation (ILAC) is an organization designed to develop a communication network among accredited laboratories that provides accurate and reliable results [8; 9]. This system brings together many accredited laboratories on a voluntary basis.

International Accreditation Forum (IAF) is an organization that monitors reliability and adequacy of accredited certification bodies [8]. European Co-operation for Accreditation (EA) is a non-profit organization uniting accreditation agencies of European Union and candidate countries [24]. These organizations bring together established agencies around the world to conduct accreditation of activities and conformity assessment in the world. In the Republic of Azerbaijan, Turkish Accreditation Agency (TÜRKAK) provides highly qualified accreditation activities [6].

L. Bayram states that accreditation includes an inventory of processes, personnel, and equipment. For this, the laboratory must make a detailed work plan [25]. The ISO/IEC 17025 standards [17] call for a management system that is continuously improved. This is achieved by keeping track of control system objectives, ensuring control of techniques and documentation to ensure reliable test and calibration results. A.K.S Alshebel writes that ISO/IEC 17025 is a current normative standard defining general requirements for laboratory competence, which can be used for accreditation, e.g., for a digital forensic laboratory [21].

R.W. Byard and D.M. Butzbach argue that there are limitations that pose serious threats to the quality of forensic practice, such as (1) lack of mandatory standardization, certification, and accreditation and their programs; (2) lack of qualified training and continuing education; (3) effectiveness of supervision; (4) strict standards [26].

D.S. Islek, E.H. Yukseloglu admit that standardization is necessary in forensic laboratories for the following reasons: (1) international recognition of forensic laboratory reports (opinions); (2) international forensic competition; (3) improved skills of forensic laboratories; (4) quality of services provided; (5) world forensic globalization processes; (6) increased condensed in forensic laboratories; (7) speed of expert services while ensuring quality [22].

The ISO/17025 laboratory accreditation includes several key sections, namely the personnel and technical requirements. Speaking of quality management requirements, they are similar to ISO 9000 standards [27] for quality management, but in a customized version for

laboratory activities [20]. According to the international standard ISO/IEC 17025 [17] the competence of personnel includes the ability to apply knowledge, skills and personal qualities in activities. ISO/IEC 17025 [17] standards divide laboratory personnel into internal and external. Manageability and work performance in accordance with the laboratory management system are linked as general and particular, form and content: without manageability of personnel, it is difficult to expect that the requirements of international standards will be met. ISO/IEC 17025 [17] states that personnel manageability is determined by the degree to which the instructions of laboratory management are followed. Competence is defined in the international standard ISO/IEC 17025 [17] as the demonstrated ability to apply knowledge and/or skills and personal qualities. This definition brings to the fore the ability to do a certain job, which can also be extended to a specific area of expertise such as craftsmanship [17].

D.S. Islek, E.H. Yukseloglu point out that technical competence indicates the requirements to be met by the laboratory [20]. Many factors determine the accuracy and reliability of tests or calibrations performed by a laboratory. These factors include (1) human factors; (2) the environment and its conditions; (3) test, calibration, and validation methods; (4) equipment; (5) traceability of measurements; (6) sampling; (7) handling of test and calibration materials; (8) quality of test and calibration results; and (9) presentation of results.

Achievement of objectivity in laboratory activities in research or testing is of a purely applied nature and is regulated through documentation of research/testing, validation of research/testing methods, training and clearance of personnel, maintenance of equipment. This includes some additional procedures: calibration of equipment, use of appropriate reference materials, provision of interpretation manuals, verification of results obtained and qualification of personnel, as well as records on equipment or test preparation. The combination of these procedures ensures the objectivity of the study. A study or test carried out in this way can be confirmed by obtaining the same results from different properly trained personnel [28-30].

Modern globalization and integration processes of introducing international norms in the national Republic of Azerbaijan set new goals and objectives for the introduction of international quality standards in forensic science. Experience and practice of forensic

activity regulation in the state opens new prospects for increasing its efficiency and improving the quality and professionalism of forensic investigations. Introduction of international quality standards in forensic science is a guarantee that the the international community at the highest level of recognition of the conclusions of forensic of the Republic of Azerbaijan forensic experts [31].

Therefore, the application of accretionary norms and principles recognized by the international community is a necessary condition for the improvement of expert research in the Republic of Azerbaijan.

### Conclusions

Summarizing the conclusions reached as a result of research, it should be noted that one of the issues is the inability to mention the necessity of having normative documents regulating the activity (workflow) of structural units and relevant officials of those institutions for performing the duties specified in the Regulations adjusting the activity of expertise institutions and acting as a guiding basis for them. However, the availability of those normative documents may be an additional guarantee for the implementation and monitoring of the tasks, increasing the efficiency of activity, and the qualitative implementation of the tasks assigned to the expertise institutions by creating conditions for the achievement of excellence.

Last but not least, without an excellent quality assurance system in the field of forensic expertise, it is impossible to achieve the correct application of the established standards for foreign quality assurance. The analysis shows that there is no single, unified internal quality assurance policy of the institutions performing forensic expertise activities. There is a certain fragmentation and lack of system in this field, even in normative regulation. Therefore, it is appropriate to develop a concept of quality assurance that takes into account the specific characteristics of forensic expertise. Along with the relevant basic concepts, provisions on the organization and management of the quality assurance system and the criteria for evaluating quality assurance results should be reflected in the concept. Considering the findings presented in the present study, it is recommended to conduct research on the procedure for the interaction of participants in a forensic examination with further development of the optimization of their communication in order to minimize bias, inaccuracies and, as a result, unfair judgments.

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## Критерії оцінки якості судово-експертної діяльності в різних країнах світу

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### Анотація

Глобалізація світової спільноти сприяла якісним змінам у соціально-економічній сфері, що призвело до трансформації злочинності в Азербайджанській Республіці. У наш час судово-медична експертиза стала ключовим інструментом у процесі здійснення правосуддя. Кримінальне провадження не є винятком. Застосування спеціальних знань у процесі розкриття та розслідування злочинів, забезпечення права на захист та представництва прав потерпілих має особливе значення в побудові правового та демократичного суспільства в Азербайджані. Акредитація судово-експертних лабораторій є необхідною умовою для визначення критеріїв оцінки якості судово-експертної діяльності в Азербайджанській Республіці. Метою наукового дослідження є визначення критеріїв оцінки якості судово-експертної діяльності в Азербайджанській Республіці в порівнянні з іншими світовими лідерами. Для досягнення мети наукового дослідження використовується система філософських, загальнонаукових і спеціально-наукових методів (порівняння, опис, аналіз і синтез, індукція, дедукція і аналогія, абстрагування, узагальнення, системний підхід та інші). У статті розглянуто теоретичні, нормативно-правові та практичні проблеми формування та застосування критеріїв оцінки якості судово-експертної діяльності в Республіці Азербайджан. Дослідження показало, що проблеми визначення критеріїв оцінки якості та акредитації судово-експертної діяльності не достатньо вирішуються через недосконалість чинного законодавства в Азербайджанській Республіці. Результатом дослідження стала розробка показників оцінки якості діяльності судово-експертних установ, зокрема нормативних, методичних, організаційних. Практична цінність дослідження полягає в представленні детального аналізу досвіду впровадження нових підходів судової експертизи в країнах з різними судовими системами. Дослідження представляє практичний інтерес для діячів судової системи, які займаються розробкою нормативно-правової бази ведення судових справ

**Ключові слова:** акредитація криміналістичних лабораторій, міжнародний досвід, гарантія якості, стандарти, законодавство, критерії експертизи

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