



Received: 4.8.2022  
Revised: 14.11.2022  
Accepted: 18.11.2022  
Published: 28.11.2022

*Potravinarstvo Slovak Journal of Food Sciences*  
vol. 16, 2022, p. 765-776  
<https://doi.org/10.5219/1784>  
ISSN: 1337-0960 online  
[www.potravinarstvo.com](http://www.potravinarstvo.com)  
© 2022 Authors, CC BY 4.0

The impartiality of conformity assessment bodies is an integral component of the food safety management system

*Olha Samoilichenko, Olga Priadko, Valentyn Mokiichuk, Nataliia Pashchenko, Larysa Bal-Prylypko, Yuliia Slyva, Valentyna Tkachuk, Nataliya Silonova, Mykola Nikolaienko, Tetiana Rozbytka*

#### ABSTRACT

The article aims to consider in detail the principles and requirements for impartiality, its components, and the status of implementation of these requirements in the current state of conformity assessment in Ukraine for different types of conformity assessment bodies (CABs); involved in food safety management system; compliance with the requirements of impartiality in terms of managing the risks associated with impartiality. The article uses methods of theoretical, empirical-theoretical, and empirical research, including analysis of documentation. Expert assessments were used to determine the significance of individual elements. The importance of impartiality in the activities of CABs is substantiated and demonstrated. Received a list of mandatory and recommended impartiality requirements for the requirements of the received standards and identified factors that threaten impartiality. Practical recommendations for documenting the process of impartiality management developed. The article analyzed the completeness and sufficiency of possible documented evidence, identified the risks of impartiality, and developed a set of preventive measures to minimize the identified risks. The authors developed a methodology for managing impartiality, which combines the experience and experience of CABs in various fields. The research results allow the CAB to carry out and document lending sector activities following the standard's requirements.

**Keywords:** standard, requirement, quality management system, documentation, risk, preventive action

#### INTRODUCTION

The food safety management system is closely related to the accredited CABs, which ensure the implementation of the basic quality requirements: testing of quality indicators in testing laboratories, calibration of equipment in calibration laboratories (DSTU EN ISO / IEC 17025:2019) [1], professional level testing (DSTU EN ISO / IEC 17043:2017) [2], certification of products in certification bodies (DSTU EN ISO / IEC 17065:2019) [3], certification of personnel (DSTU EN ISO / IEC 17024:2019) [4], involvement of inspection bodies and bodies that audit and certify management systems, including food safety (DSTU EN ISO / IEC 17021-1:2017) [5].

Impartiality is an element consistently present in all guidelines and international standards for conformity assessment. The requirement of "impartiality" has become common during the activities of conformity assessment bodies (CBA). In addition, it has been transferred from the field of conformity assessment to areas related to various forms of control, supervision, and inspection if they position their activities as maximally transparent and open.

Food safety principles require reliable and impartial testing of established quality indicators. Tests are performed exclusively in accredited testing laboratories following the requirements of the international standard DSTU EN ISO / IEC 17025: 2019 [1]. In turn, the testing laboratory ensures the reliability of the results by:

- planned periodic calibration of equipment in calibration laboratories accredited following the requirements of the international standard DSTU EN ISO / IEC 17025: 2019 [1];

- constant verification of their professional level in bodies accredited following the requirements of the international standard DSTU EN ISO / IEC 17043: 2019 [2];

- use of products, processes, and services certified by bodies accredited following the requirements of the international standard DSTU EN ISO / IEC 17065: 2019 [3];

- carrying out tests only by competent personnel. Certification of personnel, among other things, can be carried out in accredited certification bodies following the international standard DSTU EN ISO / IEC 17024: 2019 [4].

An important principle is the involvement of impartial inspection bodies that audit and certify management systems, including the safety of food products accredited following the DSTU EN ISO / IEC 17021-1: 2017 [5].

Partiality in the activities of at least one CAB carries high risks to food safety for the final consumer. In turn, cooperation with CABs, which consistently demonstrate impartiality, contributes to the competitiveness of the food company.

Compliance with impartiality requirements is implemented as a formalization of individual and organizational aspects and a separate set of measures, which requires significant resources. An impartiality clause is almost always present in the CAB oversight program. This involves demonstrating documented evidence of impartiality. Impartiality mechanisms are developed in each CAB, depending on senior management and quality management awareness.

International standards and guidelines avoid direct requirements for documenting evidence of impartiality, which leads to ambiguity and inconsistency in the completeness of the evidence between the CAB and the body supervising it.

Since 2005 in the international sphere, the standard ISO / PAS 17001: 2005 [6], from 2009 to 2012, In Ukraine, the national standard DSTU-P ISO / PAS 17001: 2008 [7] was in force, which is an identical translation [6]. Currently, the terms and definitions of impartiality are given in [8], which in September 2022 will be replaced by [9].

In the scientific literature, the issue of the impartiality of CABs is not sufficiently disclosed: considered in the context of risk management [5], or for certain types of CABs [6].

There are requirements of international standards regarding impartiality in the activities of food processing enterprises and associated CBA, which authorized quality management systems. The main emphasis in management impartiality is identifying, eliminating, and minimising risks. Recommendations for preventive actions and ways of implementing these actions have been developed for unremedied risks. Therefore, the proposed method of impartiality management will reduce cases of inappropriate impartiality-related work.

## **MATERIAL AND METHODOLOGY**

The theoretical research method is used in deriving generalized rules, principles, and systems in managing the impartiality of different quality systems.

The theoretical method included the analysis of the following international regulations:

International documents on the subject of analysis:

1) HACCP Principles the part focusing on hazard identification, monitoring, and control at critical control points identified throughout the food chain;

2) Principles of good practice depending on the food chain segment: Correct Agricultural Practice (GAP), Correct Veterinary Practice (GVP), Correct Manufacturing Practice (GMP), Correct Hygienic Practice (GHP), Correct Operating Practice (GP), Distribution (GDP), Correct Trade Practice (GTP).

3) Requirements for the quality system following DSTU ISO 22000: 2019 [10];

Normative documents on the problems of industrial sanitation and safety of work on production lines as a subject of analysis:

1) Law of Ukraine No. 771 "On basic principles and requirements for food safety and quality" (Articles 20, 21) [11];

2) Law of Ukraine No. 2042 "On state control over compliance with legislation on food, feed, by-products of animal origin, animal health and welfare" [12];

3) Order of the Ministry of Agrarian Policy and Food of Ukraine No. 590 of 01.10.2012 "On approval of the Requirements for the development, implementation and application of permanent procedures based on the principles of the Food Safety Management System (FSMS)", with changes made following the Order of the Ministry of Agrarian Policy and Food No. 429 of 17.10.2015 [13];

4) Order of the Ministry of Agrarian Policy and Food of Ukraine No. 41 of 06.02.2017 "On approval of the form of the act drawn up based on the results of the audit on compliance by market operators with the requirements of legislation on ongoing procedures based on the principles of hazard analysis" [14];

5) Order of the Ministry of Agrarian Policy and Food of Ukraine No. 42 of 06.02.2017 "On approval of the form of the act drawn up as a result of a planned (unscheduled) state control measure regarding market operators' compliance with hygienic requirements for food handling";

6) Resolution of the Cabinet of Ministers of Ukraine No. 896 of October 31, 2018 [15]. "Procedure for determining the frequency of planned measures of state control of compliance of market operators (facilities) with the requirements of legislation on food, feed, animal health, and welfare, carried out by the State Service for Food Safety and Consumer Protection, and the criteria for evaluating the degree of risk from its implementation [16].

The empirical-theoretical method allowed the analysis and synthesis of the immediate state of compliance with the simultaneous combination of the obtained theoretical concepts. An empirical method of study and research of CAB documentation analyzed the experience. It summarized the results of observations on the methods and elements of documenting impartiality, including inconsistencies related to impartiality. The method of expert assessments allowed us to work out individual opinions of CAB staff of different directions to the group and summarize the examination materials.

## RESULTS AND DISCUSSION

In the scientific literature, the issue of the impartiality of CBA is considered unilaterally: either in the context of risk management [17], or for certain types of CBA [18].

The work [19] is devoted to the issue of risk management and assessment in forensic institutions of Ukraine, in particular in testing laboratories following the requirements of [1]. The need to distinguish a separate group of risks caused by impartiality was established, but the management of this group of risks was not detailed.

In [20] they considered management procedures and mechanisms for ensuring impartiality for certification and inspection bodies. A list of risks is defined, and three main detection groups are identified. The importance of managing impartiality and documenting results has been confirmed for older versions of standards with requirements for CBA. This work can be used as a basis for creating an impartiality evaluation methodology according to the new versions of the standards, which are known to contain in-depth impartiality requirements.

In [21], the importance of the requirements of impartiality in the supervision of the regional accreditation body over the activities of the CBA is generally outlined, and the need to analyze the impartiality and independence of the CBA is determined.

In [22], the role of quality indicators for quality assessment in the health care segment, particularly impartiality, is shown. The role of impartiality in the activities of medical laboratories is established.

The importance of impartiality management is highlighted in [21], [22]. However, the methodology that would allow impartiality to be managed needs to be defined. In [16], the impact of impartiality in testing and calibration laboratories during determining metrological aspects related to measuring equipment was considered.

The issue of impartiality is also addressed in the guidelines and manuals of international and regional standardization organizations. The senior management of the International Organization for Standardization also develops and implements a policy considering the principles of impartiality following the standard's requirements [5]. Determines the requirements for personnel regarding impartiality, organizes methods of their control, and creates an independent committee to oversee the rules and guidelines of the impartiality process [23].

Work [25] is a convenient guide that covers all aspects of conformity assessment and contains general requirements for demonstrating and saving the impartiality of inspection bodies, product certification bodies, processes, services, personnel, and accreditation bodies. This work shows the importance of impartiality in demonstrating the qualifications of a CBA.

Therefore, the task of management at all levels and quality management is to ensure the impartiality of CAB following all standards. Developing an impartiality management methodology that includes systematic and structured impartiality elements will greatly facilitate this process, reduce the number of potential inconsistencies, and minimize the overall risk of CAB. Given the significant attention to impartiality in the latest edition of ISO IEC 17025:2017, the International Professional Federation of National Associations of Testing, Calibration and Analytical Laboratories EUROLAB in its book [26] described ways to demonstrate impartiality and identified risks associated with impartiality, ways to eliminate or minimize them. The US National Institute of Standards and Technology (NIST) in its work [27] regarding the review of conformity assessment and its impact on the market defined the role of impartiality, in particular during the certification of quality systems, personnel and accreditation bodies.

Violation of the CAB of the principle of impartiality, defined by the relevant international accreditation standards, is one of the gross violations and may lead to the suspension or revocation of existing accreditation [28].

The standards for CAB quality management systems DSTU EN ISO 15189 [29] do not explicitly require the development of a procedure, regulation, or other document describing measures to ensure impartiality. However,

most CABs, in pursuit of standardization, ensure rationality in the development by developing, approving, and applying recognized rules, guidelines, and procedures describing the impartiality management process [30].

The requirements given in the standards of management systems can be divided into levels (similar to the levels in [1]):

- Mandatory – there is clear wording of the requirement in the standard text, in some cases indicating the form (element) of the documentary evidence.
- Recommended – requirement, but not defined form (element) of documented evidence.
- Proposed – not spelt out.

The level of CAB requirements determines the need to document impartiality actions: mandatory and recommended requirements are documented and maintained.

The authors analyzed the requirements for impartiality in the main groups, which were further analyzed. The results of the analysis of the requirements for the impartiality of CABs following the requirements of the standards with current accreditation in the National Accreditation Agency of Ukraine (NAAU) are presented in Table 1 (+ indicates the requirement directly spelt out in the standard text).

How important is compliance or non-compliance with the principles of impartiality for an accredited CAB working in its field? Of course, each CAB has organized its activities differently [10], there have been changes in management staff (including quality), some CABs have been accredited for less than two years, and others are in the process of re-accreditation [18], [19], [20], [21]. Applying expert assessments will determine the general place of impartiality in the organization and the maintenance of the integrity of the CAB [31], [32].

Paper [33], [34] outlines the most common quality challenges testing laboratories face during their accreditation process related to impartiality. In [35] impartiality that arises during the control of processes providing technology check and modelling technological operations of products from metamaterials is considered. Impartiality of the training needs referring to specific aspects of interest to the main parties involved in each case is considered in [36]. Impartiality in medical institutions while operationalizing certification for research purposes and developing an administrative home for stakeholders given in [37]. Papers [38], [39] analyze ways to solve the independence and impartiality concerns in testing laboratories, in particular, due to self-verification.

Questions of impartiality in implementing the Food Safety Management System throughout the food production and supply chain are reviewed in papers [40], [41], [42], [43].

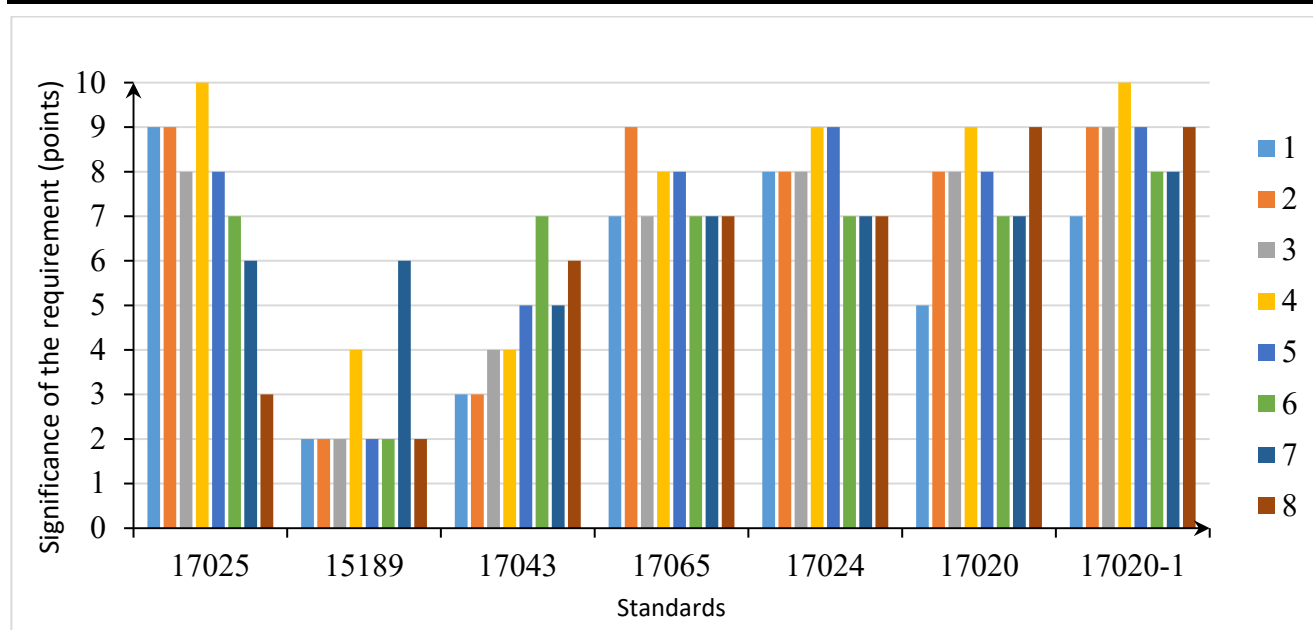
Bringing the standard [29] to a single format of ISO 9001 and [1], in particular in the part of impartiality management, is considered in [44]. Questions of elimination of subjectivity and impartiality in the auditor's assessment according to ISO/IEC 17021-1:2015 are given in [45].

Impartiality in the audit process of the management system from the Food Safety Management System Certification Body approach in auditing to eliminate subjectivity and impartiality in the auditor's assessment is also given in [45].

The experiment results are shown in Table 1, Table 2, and Figure 1.

Representatives of CABs were involved as experts (from among those responsible for quality management), one representative from each CAB, a total of 20 people. (DSTU ISO / IEC 17025 – 5 people, DSTU EN ISO 15189 – 3 people, DSTU EN ISO / IEC 17043 – 1 person, DSTU EN ISO / IEC 17065 – 3 people, DSTU EN ISO / IEC 17024 – 1 person, DSTU EN ISO / IEC 17020 – 4 people, DSTU EN ISO / IEC 17021-1 – 3 people).

Experts' own experience may differ from the experience of CAB accreditation. Still, the answer was given by experts based on the generalized experience of the expert and the CAB, and the weight of expert reports is given the same. The expert answered the question: how important are the requirements for impartiality in terms of checking their implementation during the supervision of the CAB (the most important – 10 b. The results are presented in Figure 1.



**Figure 1** Expert assessments of the significance of impartiality.

In Figure 1 and Table 1: Impartiality requirements: 1 – impartiality in the structure; 2 – impartiality in management; 3 – lack of commercial, financial, or other pressure; 4 – the need to identify risks to impartiality, eliminate and minimize such risks; 5 – impartiality in the activities of staff; 6 – impartiality in the policy and tasks in the field of quality; 7 – the activity of third-party legal entities with which the CAB interacts or the entity of which it is a part has not compromised the impartiality of its activities; 8 – minimization conflicts of interest related to impartiality.

**Table 1** Requirements for the impartiality of CABs

CAB	CAB impartiality requirements							
	1	2	3	4	5	6	7	8
DSTU ISO / IEC 17025	+	+	+	+	+	+	+	
DSTU EN ISO 15189								+
DSTU EN ISO / IEC 17043							+	+
DSTU EN ISO / IEC 17065	+	+	+	+	+	+	+	
DSTU EN ISO / IEC 17024	+	+	+	+	+	+		
DSTU EN ISO / IEC 17020		+	+	+	+			+
DSTU EN ISO / IEC 17021-1		+	+	+	+	+	+	
DSTU ISO 14065: 2015		+	+	+	+			+

CAB: Laboratory testing and calibration (DSTU ISO / IEC 17025); Medical laboratories (DSTU EN ISO 15189); Proficiency testing program providers (DSTU EN ISO / IEC 17043); Bodies for certification of products, processes, and services (DSTU EN ISO / IEC 17065); Personnel certification bodies (DSTU EN ISO / IEC 17024); Inspection bodies (DSTU EN ISO / IEC 17020); Management systems certification bodies (DSTU EN ISO / IEC 17021-1); Verification bodies (DSTU ISO 14065: 2015).

The table shows the most common mandatory impartiality requirements and indicates for which CABs these requirements are listed as mandatory. Direct specific requirements for impartiality include openness; free access to the statement of impartiality of the management (usually no direct request for access is given); official rules and/or terms of the contract that ensure the impartiality of each staff member; creation and documentation of a separate mechanism to ensure impartiality (in the form of a Board, committee, balanced involvement of stakeholders, director without executive functions); impartiality towards applicants and stakeholders; taking adequate measures (insurance or accumulation of provisions to cover liabilities).

These expert assessments confirm that CABs usually document only those requirements directly spelled out in the standard with the requirements for the management system. This is due to the cost-effectiveness of implementing quality management systems. This is especially true for privately owned CABs, for which the state does not pay wages, so any overburdening of staff leads to risks, including loss of qualified staff, redistribution of resources to attract new staff, and reduction of the bonus fund.

Generalized requirements can be used to meet the impartiality requirement fully and comprehensively regarding conformity assessment regulations. The degree of implementation of the requirements is determined depending on the field of activity and the situation in the services market. These requirements can also be used as targeted areas if the CAB identifies opportunities for improvement or needs to develop corrective and preventive action on identified non-conformities.

Terms that characterize impartiality: objectivity, independence, neutrality, honesty, breadth of views, impartiality, isolation, balance, absence of conflicts of interest, absence of prejudice, openness, detachment, balance, equality, balance, receptivity, indifference.

Impartiality threats are the starting point for managing impartial risks. Table 2 shows the results of the analysis of factors according to the grouping proposed by the authors (Table 1) and their reflection on the standards of CAB management systems.

**Table 2** Analysis of factors that threaten impartiality.

CAB	Factors					
	1	2	3	4	5	6
DSTU ISO / IEC 17025						
DSTU EN ISO 15189						
DSTU EN ISO/IEC 17043						
DSTU EN ISO/IEC 17065						
DSTU EN ISO/IEC 17024						
DSTU EN ISO/IEC 17020						
DSTU EN ISO/IEC 17021-1	+	+		+	+	
DSTU ISO 14065:2015						

To Table 2: 1 – Personal interest (dependence on the contract, the amount of fee, fear of losing a customer, fear of losing a job); 2 – Critical self-examination (evaluation of the results of own services, such as consulting or planning); 3 – Assistance (CABs act in support of or in opposition to the customer); 4 – Extraordinary familiarity with the trust of the CAB to the customer without obtaining documented evidence of compliance with the requirements of the standard; 5 – Fear, in particular before the customer; 6 – Competition (CAB is a direct competitor in the market).

The table shows that the factors according to [1] are not defined in the texts of the standards of quality management systems of CAB. The formulation of impartiality factors is usually as follows: issues of property rights (a form of ownership), leadership, subordination, management (management), staff, shared resources and their distribution, finance, marketing, branding, incentives for new customers, including commissions, offers of services not related to conformity assessment at the same time or in a short time interval with conformity assessment services. It is also determined that the customer who pays for the CAB services is also a factor of impartiality.

The most relevant from a practical point of view is the forms and elements of documenting evidence of impartiality. Table 3 shows the methods of documenting evidence of compliance with the requirements, regardless of the type of CAB for the requirements, according to Table 1.

**Table 3** Documents on impartiality.

Requirements	Requirements Compliance with requirements
1	Organizational structure.
2	Declaration of impartiality of management.
3	Declaration of impartiality of management, job descriptions of staff, contract documents, and internal audit program.
4	Risk management procedure, register of quality indicators, register of risks, preventive and corrective actions.
5	Staff Declaration of Impartiality, Customer Feedback Questionnaires, Register of Complaints, Meeting Log.
6	Quality policy, quality objectives,
7	Quality policy, top management analysis, cooperation agreements.
8	Customer feedback questionnaires, personnel testing, and management decisions regarding appointments and interactions.

As noted, the CAB usually documents the requirements and ways to maintain impartiality and identifies staff responsible for implementing, verifying, analyzing, and identifying improvement needs. Such documentation is carried out in the internal documents of the management system – procedures, instructions, and guidelines, which provide a detailed description of the sub-processes of impartiality according to paragraphs 1-8 of Table 3.

Impartiality in the structure involves the organization and presentation (in schematic or tabular form) of the CAB structure, its place in the organization's overall structure, relationships (direct subordination, interaction, etc.), indicating the return of positions and names of staff. If there is a recommended requirement for an additional impartiality mechanism in the form of a council, committee, balanced stakeholder engagement, or director without executive functions (DSTU EN ISO / IEC 17065, DSTU ISO 14065: 2015), indicate the location of such an advisory agency and develop a separate Regulation with a description of its purpose, tasks, functions, rights, and responsibilities. A prerequisite for the management system is the involvement of as many stakeholders as possible and equal representation.

Declarations of impartiality (senior management, staff (both full-time and part-time), members of advisory bodies, individual consultants, and advisers) are conclusive evidence of compliance with the standard. Still, they are not a guarantee of compliance with the declared.

Evidence of management impartiality related to commercial, financial, and other types of pressure on personnel may include senior management declarations, job descriptions, or contractual documents between management and personnel describing mechanisms to minimize such pressure. Pressure monitoring issues can also be added to the internal audit program, provided the auditor has sufficient trust from the staff. The division of responsibilities between audit team members relates to management decisions regarding impartiality. The CAB may hold periodic internal meetings to address issues of impartiality. In addition, the CAB may engage an external independent organization to conduct staff surveys (tests).

The most independent evidence of impartiality is the Register of Complaints and Appeals. All current standards with requirements for quality management systems define the requirements for the management of complaints and appeals, particularly the general filing of complaints and information about the decisions made.

Another tool for independent proof of impartiality is the feedback questionnaire with the customer, but only in the case of such an organization of its submission, which excludes the influence of CAB. For example, a CAB may remove questionnaires with negative feedback or create questionnaires on behalf of customers. As there are no clear requirements for the submission and preservation of questionnaires, this tool is also proof of impartiality without a full guarantee.

The insurance contract, reserve fund, and other financial instruments are also independent and objective evidence of impartiality provided that the amount of insured deposits and funds is justified and approved, including by independent advisory bodies.

Compliance with impartiality requirements can be divided into two groups: formalization and actual action. Formalization only sometimes means a lack of impartiality, but a detailed analysis does not allow you to gain confidence in compliance. Real measures are unquestionable, but most of them are not mandatory.

What does this mean for CABs? The first is compliance with the standard for organizing and documenting records of impartiality. If, for example, an organizational structure is defined as one in which the independent advisory body is directly subordinate to senior management. As stated in the regulations on structural units, this is a violation of mandatory or recommended requirements.

But what if the proof of impartiality is a declaration? The staff declares that they will report all cases of pressure from customers. But in fact, did not report it. Is it correct to consider the declaration fully compliant with the standard's requirements?

In this case, the requirements for management systems (Table 1) prescribe the need for risk management related to impartiality and the organization of accurate measures to minimize such risk.

In the case of personnel, for example, personnel authorized to perform test work are personally acquainted with the customer. Measures to minimize risks, in this case, are the depersonalization of samples before they enter the overhead line. But even so, there is a risk that personnel authorized to accept and depersonalize samples will report the sample number to test personnel. Therefore, some CABs introduce depersonalization measures, while other CABs that have been accredited for more than 5 years do not. In each case, in the absence of an immediate requirement in DSTU ISO / IEC 17025 for depersonalization, there are no inconsistencies, as each CAB maintains a register of risks, including impartiality, plans, and implements precautionary actions, and evaluates the effectiveness/efficiency of precautionary actions.

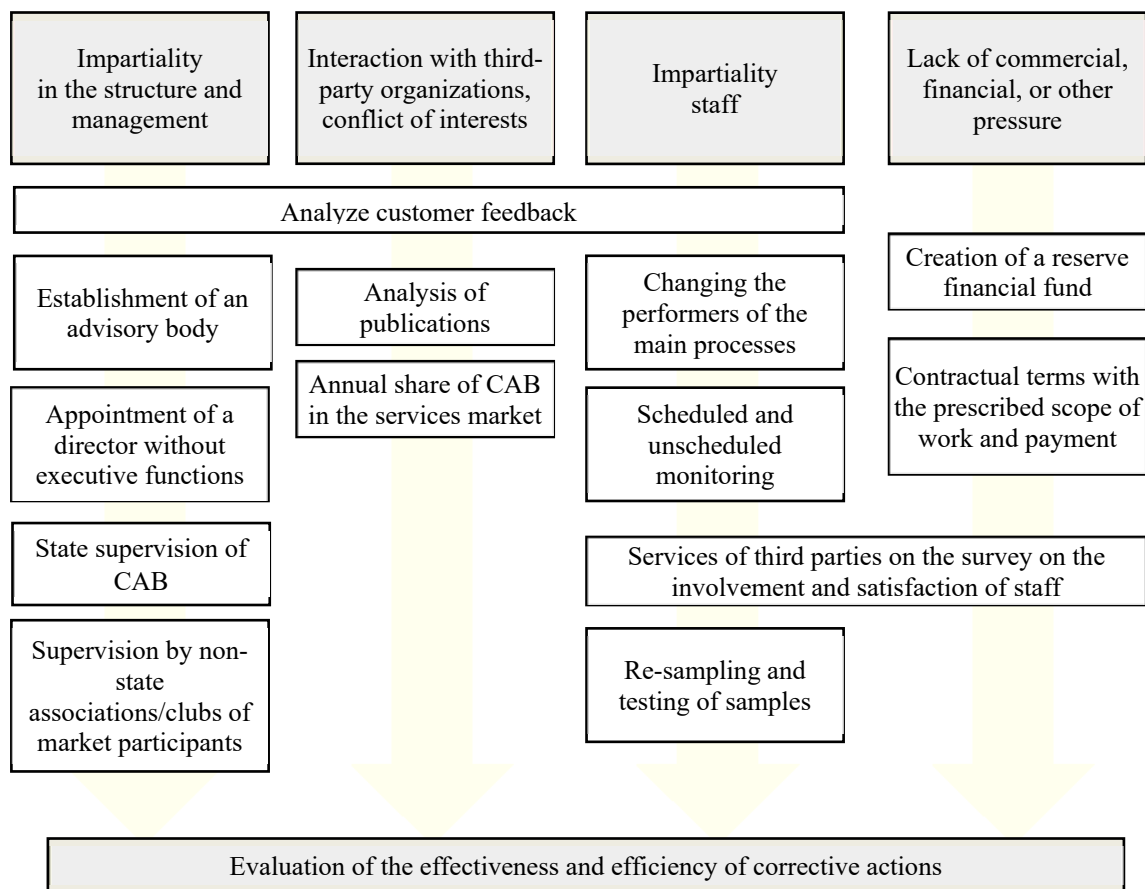
The same issues remain relevant during sampling. Is the selector's impartiality statement sufficient to ensure impartiality in the selection? The CAB identifies and minimizes the risks associated with sampling in various ways: photo/video, scheduled and unscheduled monitoring of the sampler, and re-sampling with subsequent

testing. Also, an effective mechanism is customer surveys and rotation of test performers in the laboratory/change of laboratory.

Impartiality requirements for staff involved in the process of accredited environmental protection activities are mandatory in some cases (DSTU EN ISO / IEC 17024): staff must declare conflicts of interest to ensure impartiality of inspections and registration of measures to prevent threats to confidentiality and impartiality of expertise, the potential conflict of interest. Such measures include, but are not limited to, mandatory interviewing of applicants for impartiality or conflict of interest in cooperation with the CAB and consideration of all identified cases with corrective and precautionary measures.

Therefore, it is impossible to develop forms of documentation that will fully ensure impartiality in practice in the absence of direct requirements of the standard, and it is necessary to implement precautionary measures to minimize the risks of impartiality and assess their effectiveness and efficiency.

Generalized recommendations for possible precautionary measures depending on the method are presented in Figure 2.



**Figure 2** Precautions to minimize the risks of impartiality.

Based on the above, organizing conformity assessment activities following the requirements of the standards in the management of the process of impartiality should be guided by the following methodology:

1. Define mandatory and recommended requirements according to Table 1 and explain them.
2. Determine the documentation of evidence of compliance with the requirements according to Table 2 and its explanations.
3. Identify documentation requirements that do not eliminate the threat of impartiality. Identify risks to impartiality
4. Using Figure 2 and its explanation develop measures to eliminate and minimize the identified risks.
5. Document the requirements, the procedure for execution, the forms for keeping records, and the staff responsible for implementing and controlling measures to ensure impartiality.
6. Plan to analyze the effectiveness and efficiency of preventive measures against the risks of impartiality, identify and implement measures for improvement



## CONCLUSION

1. The integrity and controllability of the food safety and quality management system depend, among other things, on the impartiality of the associated CBA. Impartiality is a fundamental component of the CBA's activities, which causes risks in the operation of the food safety and quality management system; bias is a gross violation and leads to the deprivation of accreditation. All standards regarding the requirements for the competence of the CBA contain requirements for impartiality in one form or another.

2. The authors grouped and systematized the basic requirements and presented the practical significance of the requirements for impartiality based on expert assessments obtained experimentally.

3. For the specified requirements, the list of the basic ways of documentation of proofs of impartiality is made and their analysis from the point of view of completeness of realization of the requirement and possible risks for CAB is carried out.

4. Complete elimination of bias is not possible due to the need for clear requirements for their documentation in the standards. The standards' main requirement is to identify risks to impartiality and eliminate and minimize such risks.

5. For some instances where the documentation of impartiality leaves risks of impartiality, recommendations on preventive actions and ways to implement these actions have been developed.

6. A methodology for managing impartiality has been developed for CAB staff authorized to implement, maintain and improve the management system. The methodology can be applied to the following types of CABs that NAAU currently accredits:

Testing and calibration laboratories (DSTU ISO / IEC 17025), medical laboratories (DSTU EN ISO 15189), providers of proficiency testing programs (DSTU EN ISO / IEC 17043), certification bodies for products, processes, and services (DSTU EN ISO / IEC 17065), personnel certification bodies (DSTU EN ISO / IEC 17024), inspection bodies (DSTU EN ISO / IEC 17020), management system certification bodies (DSTU EN ISO / IEC 17021-1), verification bodies (DSTU ISO 14065: 2015).

## REFERENCES

1. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2021). General requirements for the competence of testing and calibration laboratories (DSTU EN ISO/IEC 17025:2019).
2. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2018). Compliance assessment. General requirements for professional level verification. (DSTU EN ISO/IEC 17043:2017).
3. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2021). Compliance assessment. Requirements for bodies for certification of products, processes, and services. (DSTU EN ISO/IEC 17065:2019).
4. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2021). Compliance assessment. General requirements for personnel certification bodies. (DSTU EN ISO/IEC 17024:2019).
5. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2019). Assessment of conformity. Requirements for bodies performing audit and certification of management systems Part 1. Requirements. (DSTU EN ISO/IEC 17021-1:2017).
6. International Organization for Standardization. (2005). Conformity assessment - Impartiality - Principles and requirements. (ISO Standard No. 17001:2005).
7. Derzhspozhivstandard of Ukraine. (2009). Compliance assessment. Impartiality. Principles and requirements. (DSTU-P ISO/PAS 17001:2008).
8. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2021). Compliance assessment. Glossary of terms and general principles. (DSTU EN ISO/IEC 17000:2021).
9. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2008). Compliance assessment. Glossary of terms and general principles. (DSTU EN ISO/IEC 17000:2007).
10. State Enterprise "Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems". (2021). Food safety management systems. Requirements for any organization in the food chain. (DSTU ISO 22000:2019).
11. On the basic principles and requirements for the safety and quality of food products (1997). Law of Ukraine No. 771/97-VR. 23.12.1997. Retrieved from <https://zakon.rada.gov.ua/laws/show/771/97-%D0%B2%D1%80#Text>.

12. On state control over compliance with the legislation on food products, feed, by-products of animal origin, animal health, and welfare (2017). Law of Ukraine No. 2042-VIII. 18.05.2017. Retrieved from <https://zakon.rada.gov.ua/laws/show/2042-19#Text>.
13. On the approval of the Requirements for the development, implementation, and application of permanent procedures based on the principles of the Food Safety Management System (HASSR) (2012). Order of the Ministry of Agrarian Policy and Food of Ukraine No. 590. 01.10.2012. Retrieved from <https://zakon.rada.gov.ua/laws/show/z1704-12#Text>.
14. On the approval of the form of the act drawn up based on the results of the state control measure in the form of an audit of permanently operating procedures based on the principles of HACCP (2019). Order of the Ministry of Agrarian Policy and Food of Ukraine No. 446. 08/08/2019. Retrieved from <https://zakon.rada.gov.ua/laws/show/z0980-19#n2>.
15. On approval of forms of acts drawn up as a result of planned (unplanned) measures of state control (inspection) regarding compliance by market operators with the requirements of the legislation on food products, feed, by-products of animal origin, animal health and welfare, and other forms of administrative documents. Order of the Ministry of Economy of Ukraine No. 143-22. 21.01.2022. Retrieved from <https://zakon.rada.gov.ua/laws/show/z0151-22#n13>.
16. Some issues of implementation of planned measures of state control by the State Service for Food Safety and Consumer Protection (2018). Resolution of the Cabinet of Ministers of Ukraine No. 896. 31.10. 2018 Retrieved from <https://zakon.rada.gov.ua/laws/show/896-2018-%D0%BF#Text>.
17. Novikov, V., & Nikityuk, O. (2019). Organization of risk-oriented risk management ISO/IEC 17025. In Journal Laboratory case (Vol. 3-4, pp. 16–26). Ltd «Press-Aliance». Retrieved from <https://e.labsprava.com.ua/laboratorna-sprava-2019-3/organizaciya-rizik-orientovanogo-menedzhmentu-za-iso-170252017>.
18. Kysylevska, A. (2021). Impartiality of the activity of the testing laboratory as an integral component of its competence: Vol1. New and non-traditional technologies in resource and energy saving. [in Ukrainian]
19. Onoprienko, S., Sharapova, O., Naranovych, O., Spasenko, I., & Shevtsova, O. (2020). On the issue of risk management and assessment in the activities of Ukrainian forensic institutions. In Theory and Practice of Forensic Science and Criminalistics (Vol. 21, Issue 1, pp. 252–266). Hon. Prof. M.S. Bokarius Kharkiv Research Institute of Forensic Examinations. [https://doi.org/10.32353/khrife.1.2020\\_16](https://doi.org/10.32353/khrife.1.2020_16)
20. Popović, P., & Popović, D. (2014). Management Of Impartiality - A Key Request of New Version of International Standards for Certification and Inspection of Products and Services. In Proceedings of the 1st International Scientific Conference - Sinteza 2014. Sinteza 2014. Singidunum University. <https://doi.org/10.15308/sinteza-2014-887-892>
21. Popovic, P., & Popovic, D. (2014). Implementation of new international standards for certification and inspection bodies. In Istrazivanja i projektovanja za privredu (Vol. 12, Issue 3, pp. 187–196). Centre for Evaluation in Education and Science (CEON/CEES). <https://doi.org/10.5937/jaes12-6520>
22. Majkić-Singh, N., & Šumarac, Z. (2012). Quality Indicators of the Pre-Analytical Phase. In Journal of Medical Biochemistry (Vol. 31, Issue 3, pp. 174–183). Centre for Evaluation in Education and Science (CEON/CEES). <https://doi.org/10.2478/v10011-012-0013-2>
23. Beckert, S. F. (2021). Customer requirement or appropriate calibration method? Which is more important? In Measurement: Sensors (Vol. 18, p. 100318). Elsevier BV. <https://doi.org/10.1016/j.measen.2021.100318>
24. International Standards Observer. Retrieved from <http://iso.net.pk/impartiality.php>.
25. International Organization for Standardization. Building trust. The Conformity Assessment Toolbox. Retrieved from [https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/casco\\_building-trust.pdf](https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/casco_building-trust.pdf).
26. EUROLAB “Cook Book” – Doc No. 19. Retrieved from <https://drive.google.com/file/d/1NNYdCSWc8mMRYXD0m-l3k6-tO9kd7Doo/view?usp=sharing>. Rev. n. 3, Approv. 10/2018
27. Carnahan, L., & Phelps, A. (2018). ABC’s of conformity assessment. National Institute of Standards and Technology. <https://doi.org/10.6028/nist.sp.2000-01>
28. General document "List of gross violations by an accredited conformity assessment body" (ZD-08.00.25, edition 01): NAAU policy: website. Retrieved from [https://naau.org.ua/wp-content/uploads/2017/02/ZD-08.00.35\\_red\\_01\\_Grubi\\_porushennya-sajt1.pdf](https://naau.org.ua/wp-content/uploads/2017/02/ZD-08.00.35_red_01_Grubi_porushennya-sajt1.pdf).
29. State Enterprise “Ukrainian Scientific Research and Training Center for Standardization, Certification and Quality Problems”. (2016). Medical laboratories. Requirements for quality and competence. (DSTU EN ISO 15189-1:2015).
30. Eremenko, V., Mokiichuk, V., Pashchenko, N., Samoilichenko, O., & Priadko, O. (2022). Analysis of the impact of personnel competency on uncertainty during calibration. In Eastern-European Journal of Enterprise

- Technologies (Vol. 3, Issue 3 (117), pp. 35–42). Private Company Technology Center. <https://doi.org/10.15587/1729-4061.2022.259779>.
31. Lapach, S. N., Chubenko, A. V., & Babich, P. N. (2001). Statistical methods in biomedical research using Excel. MORION, Kyiv. (in Russian)
  32. Zaloga, V., Ivchenko, A., Morteza, R., (2018). Development of integrated management systems based on international standards: methodological foundations. [Monograph, Sumy State University]. Retrieved from <http://essuir.sumdu.edu.ua/handle/123456789/70862>.
  33. Anastasopoulos, G. I., Ramakrishnan, P. S., & Anastasopoulos, I. G. (2019). Improving Performance of Testing Laboratories – A Statistical Review and Evaluation. In Sustainable Issues in Transportation Engineering (pp. 16–34). Springer International Publishing. [https://doi.org/10.1007/978-3-030-34187-9\\_2](https://doi.org/10.1007/978-3-030-34187-9_2)
  34. Kaynar, P. (2020). Changes of water laboratories with ts en iso/iec 17025 standard revision. In Turkish Bulletin of Hygiene and Experimental Biology (Vol. 77, Issue 80, pp. 57–64). LookUs Bilisim A.S. <https://doi.org/10.5505/turkhijyen.2020.79027>
  35. Boriskin, O. I., Nuzhdin, G. A., Khunuzidi, E. I., & Blagoveshchenskiy, D. I. (2019). The conformity assessment of metamaterials quality management. In CIS Iron and Steel Review (pp. 53–57). Ore and Metals Publishing House. <https://doi.org/10.17580/cisistr.2019.01.10>
  36. Tsimillis, K. C. (2014). Training needs to understand quality assurance. In Accreditation and Quality Assurance (Vol. 20, Issue 1, pp. 53–59). Springer Science and Business Media LLC. <https://doi.org/10.1007/s00769-014-1092-1>
  37. Chappell, K. B., Howard, M. S., Lundmark, V., & Ivory, C. (2021). Credentialing and certification: Overview, science, and impact on policy, regulation, and practice. In International Nursing Review (Vol. 68, Issue 4, pp. 551–556). Wiley. <https://doi.org/10.1111/inr.12721>
  38. Martínez-Perales, S., Ortiz-Marcos, I., & Ruiz, J. J. (2021). A proposal of model for a quality management system in research testing laboratories. In Accreditation and Quality Assurance (Vol. 26, Issue 6, pp. 237–248). Springer Science and Business Media LLC. <https://doi.org/10.1007/s00769-021-01479-3>
  39. Rodrigues Filho, B. A., Farias, R. F., & Anjos, W. (2018). Implementing a proficiency test provider for sphygmomanometers in Brazil. In Journal of Physics: Conference Series (Vol. 1044, p. 012033). IOP Publishing. <https://doi.org/10.1088/1742-6596/1044/1/012033>
  40. Panghal, A., Chhikara, N., Sindhu, N., & Jaglan, S. (2018). Role of Food Safety Management Systems in safe food production: A review. In Journal of Food Safety (Vol. 38, Issue 4, p. e12464). Wiley. <https://doi.org/10.1111/jfs.12464>
  41. Zimon, D., & Domingues, P. (2020). Impact of implementation of ISO 22000 on food safety throughout the supply chain: insights from Poland, Slovakia and Portugal. In International Journal of Productivity and Quality Management (Vol. 30, Issue 4, p. 509). Inderscience Publishers. <https://doi.org/10.1504/ijpqm.2020.108568>
  42. Chen, H., Liu, S., Chen, Y., Chen, C., Yang, H., & Chen, Y. (2019). Food safety management systems based on ISO 22000:2018 methodology of hazard analysis compared to ISO 22000:2005. In Accreditation and Quality Assurance (Vol. 25, Issue 1, pp. 23–37). Springer Science and Business Media LLC. <https://doi.org/10.1007/s00769-019-01409-4>
  43. Khalid, S. M. N. (2016). Food safety and quality management regulatory systems in Afghanistan: Policy gaps, governance and barriers to success. In Food Control (Vol. 68, pp. 192–199). Elsevier BV. <https://doi.org/10.1016/j.foodcont.2016.03.022>
  44. Pradella, M. (2020). Requirements for medical, forensic, anti-doping and food laboratories: new ISO 15189 and ISO 17025. In La Rivista Italiana della Medicina di Laboratorio (Vol. 15, Issue 4). Edizioni Minerva Medica. <https://doi.org/10.23736/S1825-859X.19.00033-1>
  45. Wahyuni, H. D., Nurjanah, S., & Rahayu, W. P. (2021). Scoring system as an alternative audit method in food safety management system certification body. In IOP Conference Series: Earth and Environmental Science (Vol. 883, Issue 1, p. 012030). IOP Publishing. <https://doi.org/10.1088/1755-1315/883/1/012030>

**Funds:**

This research received no external funding.

**Acknowledgments:**

We would like to thank you to Dr. for Oleksandr Povstyanoy

**Conflict of Interest:**

The authors declare no conflict of interest.

**Ethical Statement:**

This article does not contain any studies that would require an ethical statement.

**Contact Address:**

Olha Samoilenko, National University of Life and Environmental Sciences of Ukraine, Faculty of Food Technology and Quality Control of Agricultural Products, Department of standardization and certification of agricultural products, Heroes of Defense Str., 12 B, 03040, Kyiv, Ukraine,

E-mail: [olgasamoilichenko@nubip.edu.ua](mailto:olgasamoilichenko@nubip.edu.ua)

ORCID: <https://orcid.org/0000-0002-7272-5401>

\*Olga Priadko, National University of Life and Environmental Sciences of Ukraine, Faculty of Food Technology and Quality Control of Agricultural Products, Department of standardization and certification of agricultural products, Heroes of Defense Str., 12 B, 03040, Kyiv, Ukraine,

E-mail: [olapriadko@gmail.com](mailto:olapriadko@gmail.com)

ORCID: <https://orcid.org/0000-0002-1069-171X>

Valentyn Mokiichuk, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Department of information and measurement technologies Victory Avenue Str 56, 3703056, Kyiv, Ukraine,

E-mail: [uncertainty@ukr.net](mailto:uncertainty@ukr.net)

ORCID: <https://orcid.org/0000-0001-7400-4467>

Nataliia Pashchenko, National Aviation University, Department of Computer Systems and Networks, L. Husara ave, 1, 03058, Kyiv, Ukraine,

E-mail: [nataliia.pashchenko@npp.nau.edu.ua](mailto:nataliia.pashchenko@npp.nau.edu.ua)

ORCID: <https://orcid.org/0000-0002-7225-8161>

Larysa Bal-Prylypko, National University of Life and Environmental Sciences of Ukraine, Faculty of Food Technology and Quality Management of Agricultural Products, Department of Technologies of Meat, Fish and Marine Products, Polkovnika Potekhina, Str.16, 03041 Kyiv, Ukraine,

E-mail: [bplv@ukr.net](mailto:bplv@ukr.net)

ORCID: <https://orcid.org/0000-0002-9489-8610>

Yuliia Slyva, National University of Life and Environmental Sciences of Ukraine, Faculty of Food Technology and Quality Control of Agricultural Products, Department of standardization and certification of agricultural products, Heroes of Defense Str., 12 B, 03040, Kyiv, Ukraine,

E-mail: [yuliia\\_slyva@ukr.net](mailto:yuliia_slyva@ukr.net)

ORCID: <https://orcid.org/0000-0003-2592-6822>

Valentyna Tkachuk, Lutsk National Technical University, Dean of Customs Affairs, Materials and Technologies Faculty, 75 Lvivska St., Lutsk, Ukraine,

E-mail: [v.tkachuk@intu.edu.ua](mailto:v.tkachuk@intu.edu.ua)

ORCID: <https://orcid.org/0000-0001-5793-5227>

Nataliya Silonova, Ukrainian Scientific-Research and Training Centre for Standardization, Certification and Quality Problems, Ministry of Economy of Ukraine National Standardization Body, Svyatoshynska Str.2, 03115, Kyiv, Ukraine,

E-mail: [silonova@ukr.net](mailto:silonova@ukr.net)

ORCID: <https://orcid.org/0000-0002-4835-1008>

Mykola Nikolaienko, National University of Life and Environmental Sciences of Ukraine Department of Standardization and Certifying of Agricultural Products, Heroes of Defense Str., 15, 03041, Kyiv, Ukraine,

E-mail: [msnikoiaenko@gmail.com](mailto:msnikoiaenko@gmail.com)

ORCID: <https://orcid.org/0000-0003-2213-4985>

Tetiana Rozbytska, National University of Life and Environmental Sciences of Ukraine, Faculty of Food Technology and Quality Control of Agricultural Products, Department of standardization and certification of agricultural products, Heroes of Defense Str., 12 B, 03040, Kyiv, Ukraine,

E-mail: [tetianarozbytska@nubip.edu.ua](mailto:tetianarozbytska@nubip.edu.ua)

ORCID: <https://orcid.org/0000-0003-0098-927X>

Corresponding author: \*

© 2022 Authors. Published by HACCP Consulting in [www.potravinarstvo.com](http://www.potravinarstvo.com) the official website of the *Potravinarstvo Slovak Journal of Food Sciences*, owned and operated by the Association HACCP Consulting, Slovakia, [www.haccp.sk](http://www.haccp.sk). The publisher cooperate with the SLP London, UK, [www.slplondon.org](http://www.slplondon.org) the scientific literature publisher. This is an Open Access article distributed under the terms of the Creative Commons Attribution License <https://creativecommons.org/licenses/by/4.0>, which permits unrestricted use, distribution, and reproduction in any medium provided the original work is properly cited.