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Development of Competency Standards for Good Hygienic Practices Facilitators to Enhance Food Safety Assurance

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ABSTRACT
This study aims to develop comprehensive competency standards for facilitators implementing Good Hygienic Practices (GHP) in the food industry, particularly to align with the new Codex Alimentarius Standard on Principles of Food Hygiene. Through a literature review approach and drawing inspiration from the Regional Model Competency Standard (RMCS), the research seeks to address existing gaps in GHP training and facilitation. The study emphasizes the importance of consistent and effective implementation of food safety practices by formulating structured competency standards covering areas such as GHP application, risk management, specific hygiene practices, and integration with Hazard Analysis and Critical Control Point (HACCP) systems. These standards are anticipated to significantly enhance food safety standards, reduce the incidence of foodborne diseases, and increase consumer confidence in food products. Furthermore, the study's implications extend to future research and policy initiatives aimed at promoting food safety through professional training and global standardization of practices.
Keywords: Competency Standards, Good Hygienic Practices, Facilitator, Competence, Food Safety Assurance.

INTRODUCTION

The assurance of food safety is a paramount concern across the global food industry, necessitating stringent oversight and the implementation of effective food safety practices. The issuance of the revision of the Codex Alimentarius standard on the General Principles Of Food Hygiene in 2020 demands an increase and adjustment of the competence of food business personnel (Codex Alimentarius, 2022). Developing competency standards for GHP facilitators is crucial as these individuals play a key role in training and guiding food business operators (FBOs) and ensuring that GHPs are effectively implemented. These standards aim to establish a framework that ensures GHP facilitators possess the necessary knowledge, skills, and attitudes to support and enhance food safety measures effectively. Nyarugwe et al. (2016) suggest that food safety assurance should be approached systematically, integrating elements such as

national and organizational culture, safety culture, and specific FSMS practices. Effective training in food safety practices and compliance with these practices are essential components of food safety assurance (Ji & Ko, 2023). It is noted that a strong food safety culture positively influences compliance with safety protocols and overall food handling practices (Barnes et al., 2022). This proactive approach can significantly reduce risks and prevent foodborne illnesses (Adesokan et al., 2015).

GHPs are essential for preventing food contamination and managing food safety risks. They provide a foundation for further food safety systems, such as Hazard Analysis and Critical Control Points (HACCP), to be built. A. K. Paul et al., (2017) found that the role of GHP is critical as it helps prevent food contamination and ensures the delivery of safe food to consumers, thereby reducing the incidence of foodborne illnesses. The GHP encompasses a range of procedures designed to achieve specific identity and quality standards for products and services in the food industry (Rodrigues et al., 2018). When the GHP is aligned with international food safety guidelines, such as those from the Codex Alimentarius, it is crucial for businesses that operate in or export to different countries (Insfran-Rivarola et al., 2020). Skawińska & Zalewski, (2022) suggests that integrating GHP with modern technologies like real-time temperature monitoring systems, passive RFID, and the Internet of Things (IoT) can enhance food safety.

The establishment of competency standards for GHP is vital to standardize the training and evaluation of professionals involved in food hygiene and safety. The developing competency standards in GHP is crucial for ensuring that food safety regulators are well-trained and equipped to enforce food safety laws effectively (Thippaiah et al., 2014). Properly established GHP competency standards contribute significantly to enhancing food safety (Manzano, 2013). Goncharov et al. (2020) the artis that GHP competency standards are not just about maintaining hygiene but are integral to the broader context of professional responsibility and ethical practices in the food industry. Incorporating GHP competencies into the curriculum has a significant potential to enhance the overall food safety culture among students, making them aware and capable of managing food safety in their immediate environments and future workplaces(Limon et al., 2022).

GHP facilitators are instrumental in translating GHP standards into practice, which ensure that food handlers and operators are well-trained and informed about the latest hygiene and safety protocols. GHP facilitators are essential in ensuring that food production and handling meet required safety standards (Dzubak et al., 2016). Delisle et al. (2016) highlight that facilitators play a crucial role in the success of support groups. Properly trained and assessed facilitators can significantly improve learning outcomes for participants by ensuring simulations are conducted efficiently and effectively, which is crucial for practical skills training (Leighton et al., 2018).

However, Despite the critical role of GHPs in ensuring food safety, there is a gap in the standardized training and assessment of those tasked with implementing these practices. The lack of formalized competency standards for GHP facilitators can lead to inconsistencies in food safety practices and potentially compromise food safety.

The aim of this research is to develop competency standards for GHP facilitators based on the Regional Model Competency Standard (RMCS) to enhance their capacity to ensure comprehensive food safety assurance.

The competency standards will be developed based on the RMCS, which provides a framework for setting educational and occupational standards in various sectors. These standards will outline the required skills, knowledge, and attitudes necessary for GHP facilitators, ensuring they are equipped to train and guide food industry personnel effectively.

Developing these standards will standardize the qualifications of GHP facilitators, improve the quality of food safety training, and ensure uniformity in the implementation of food safety practices. This will ultimately contribute to higher food safety standards and reduce the incidence of foodborne diseases.

RESEARCH METHODS

The literature study method is used as the main approach in data collection and analysis. A literature study is an effective method to gain an in-depth understanding of existing competency standards, best practices in GHP teaching and facilitation, and gaps that may exist in GHP training and implementation in the industry. According to Jesson, Matheson, and Lacey in their book "Doing Your Literature Review: Traditional and Systematic Techniques", literature study is a systematic method of searching, evaluating, and interpreting all available and relevant literature to a particular topic (Jesson et al., 2011). This method helps researchers to map the existing research landscape and determine knowledge gaps in the existing literature. This method is also suggested by Gall, Gall, and Borg in "Applying Educational Research"(Gall, M., Gall, J., Borg, 2015).

Identification of sources and literature; literature selection and evaluation; information analysis and synthesis; theoretical framework development: develop a theoretical framework to be used to formulate new competency standards for GHP facilitators; writing and documentation, namely: compile findings in a systematic format to be shared with the academic community and practitioners in the field of food safety, and prepare practical recommendations based on literature analysis for the development and implementation of competency standards.

To ensure the reliability and validity of this literature study, several steps were taken, including the use of various literature sources, especially Codex Alimentarious for the Principles of Food Hygiene 2020, cross-verification of findings, and discussions with experts in the field of food safety and hygienic practices.

This study acknowledges some limitations, including literature limitations that may cover only some perspectives or up-to-date data on competency standards in food safety.

RESULTS AND DISCUSSION

Development of Competency Standards for GHP Facilitators

The development of competency standards for Good Hygienic Practices (GHP) facilitators was guided by the Regional Model Competency Standard (RMCS) framework (ILO, 2016) and Codex Alimentarious for the Principles of Food Hygiene 2020 (Codex Alimentarius, 2022). This resulted in a comprehensive set of standards designed to ensure GHP facilitators possess the essential knowledge, skills, and attitudes necessary for effective food safety assurance. Key competency areas identified include the implementation of GHP, management of food hazards, critical focus on specific GHPs critical for food safety, and integration of GHP with HACCP systems.

The development of these standards addressed a significant gap in the standardized training and assessment of GHP facilitators. By establishing clear criteria for educational and operational competencies, these standards aim to enhance the consistency and effectiveness of food safety practices across the food industry. The focus on integrating GHP with HACCP is particularly important as it ensures a systematic approach to managing food safety risks, moving beyond basic hygiene practices to comprehensive risk management. Gelen & Çetin, (2022) outlines a systematic competency standard development process, which involves identifying training needs, designing training modules, and evaluating the effectiveness of such training. Further more K et al., (2021) found the importance of developing effective competency standards for GHP (Good Hygienic Practices) facilitators, especially in the context of food handling and maintaining hygiene in the work environment. In developing competency standards for GHP facilitators, emphasis is placed on the need to draw up clear and structured guidelines covering critical aspects such as knowledge of food contamination, sanitation techniques, and food safety risk management (Prytulska et al., 2023).

Description of competency units that are contextual to implementation in the food industry

The description of competency units highlights the need for a proactive approach to managing potential contamination sources from the environment and during early food handling processes. By focusing on food hygiene, these standards help reduce the introduction of contaminants that can affect food safety further along the food supply chain. Mahfud & Lastariwati, (2019) found that the development of descriptions of these units of competency is crucial in the development and implementation of competency standards in the food industry, as it provides a clear framework for culinary professionals to develop and demonstrate their expertise effectively in dynamic and often demanding work environments. Wahyuni et al., (2022) also found that the contextual description have important implications in curriculum design and

teaching methods in vocational schools, ensuring that the education provided is not only theoretical but also practical and appropriate to the needs of the food industry.

Traceability of Element of competency to step-by-step procedures in the workplace

Ensuring traceability of the elements to the step-by-step proces of implementing food hygine standard are designed with food safety in mind is crucial. These elements of competencies provide a blueprint for businesses to follow, which if implemented correctly, significantly reduces the risk of contamination and ensures easier maintenance and sanitation processes. Lasambouw et al., (2015) found that the element of competence is associated with a step-by-step procedure in the research cycle conducted by lecturers. Each unit of competency is broken down into specific tasks to be performed, which facilitates tracking and appraisal of research performance. Wahyuni et al., (2022) presents a methodology that can help vocational education institutions and related industries to ensure that the competency standards developed and taught are directly relevant to actual work demands and procedures in the field. It provides a solid basis for assessing and enhancing the relevance of vocational education to the needs of the real world of work. Furthermore, Oungthong et al., (2019) provides valuable insights into how elements of competence can be tracked and measured in the context of technical education, ensuring that teaching and learning are closely linked to actual industry practice, and supporting teachers' professional development.

Traceability of performance criteria to work instructions in the world of work

The performance criteria developed are expected to standardize the work instruction of GHP facilitators, improve the quality of food safety training, and ensure uniformity in the implementation of food safety practices. This is anticipated to contribute to higher food safety standards and reduce the incidence of foodborne diseases.

With these performance criteria now in place, future research should focus on the implementation and evaluation of these standards across different sectors of the food industry. Monitoring and evaluating the effectiveness of these performance criteria in improving food safety outcomes will be crucial. Additionally, the traceability of these standards in different cultural and operational settings within the food industry warrants further investigation. Lasambouw et al., (2015) found that the development of assessment models is directed to measure the gap between the competencies possessed by lecturers and established competency standards, reflecting the importance of tracking performance criteria to actual work instructions in the workplace. Furthermore, Malitano & Chibomba, (2019) demonstrate how a well-integrated appraisal system with work instructions can improve transparency, efficiency, and effectiveness in performance management in the workplace.

Contextual Variables Appropriate for the Workplace Environment

The completeness of variable contexts in competency standards will have a tremendous impact on: the application in the industry to develop SOPs, work instructions and recordings;

development of training programs and instructional design on education; and development of assessment instruments in competency recognition programs. Zabirov et al. (2022) identify that by paying attention to contextual variables appropriate for the work environment, such as the specific needs of operators and unique operating conditions, evidence-based training can be significantly improved, which will ultimately improve safety and operational effectiveness. This article demonstrates the importance of understanding and integrating these contextual factors into developing and implementing competency standards in the world of work. Furthermore, Skulsampaopol et al., (2023) found that contextual variables play a crucial role in determining how competencies are measured and assessed in a real work environment. It is important to ensure that competency assessments are theoretical and relevant to actual work practice. Suswati & Malik, (2023) also highlights the importance of considering contextual factors in instruction design.

The evidence guide requires assessment context and supporting competency

The study resulted in a comprehensive set of evidence guides require assessment context/condition and degree of experience learning, supporting competency and critical aspect to ensure GHP facilitators possess the essential knowledge, skills, and attitudes necessary for effective food safety assurance.

An evidence guide containing the requirements of the assessment context and level of experience, as well as supporting competencies, will provide outstanding information on the development of educational and training instructional design and the development of competency assessment plans and recognist systems. Zabirov et al., (2022)offers in-depth insights into how appropriate assessment guidance and assessment context are essential in supporting competencies relevant and appropriate to operational needs in the aviation industry. This demonstrates the importance of a systematic and data-driven approach in developing and implementing effective training methods. Furthermore, Skulsampaopol et al. (2023) support but also take into account the context of the assessment and assess how learners can apply their competence in real and complex situations in the workplace. Amin et al. (2020) suggestthat the approach taken in assessment should effectively integrate the context of assessment and support the development of relevant competencies appropriate to the practical and operational demands in the workplace or in the student's professional context. Leijen et al., (2017) provides insight into how well-designed, performance-based assessments can facilitate professional learning and workplace-based learning in teacher education. Furthermore, Epstein et al. (2020) demonstr correct competencies in practice-based learning.

Results of the formulation of competency units of GHP Facilitator competency standards.

Table 1. Promote Good Hygiene Practices (Ghp) To Control Food Hazards (CKP-STD-GHP-001)

PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS

1.	**Implementation of Good Hygiene Practices**	
	1.1. **GHP** is developed, implemented, and maintained to support safe food production at all stages of the food chain.	**GHP (Good Hygiene Practices)** • Conditions and activities necessary to support safe and appropriate food production at all stages of the food chain, from primary production to final product handling. • Aims to control food hazards by addressing potential sources of contamination in the food production process.
	1.2. **GHP practices** are tailored to control potential hazards in food products, including those arising during harvesting, manufacturing, preparation, storage, and display.	**GHP Practices** • This includes controlling water quality to minimize potential hazards such as biological, chemical, and physical contaminants. • Requires controlling fecal contamination, practicing good hygiene by food handlers, and cleaning food contact surfaces to remove bacterial contaminants, including pathogens and foodborne allergens.
2.	**Food Hazard Management**	
	2.1. **Food Business Operators** are ensured to understand the hazards associated with their operations and implement the necessary control measures.	**Food Business Operator (FBO)** • Entities or individuals responsible for ensuring that food produced, stored, distributed, or sold is safe and fit for consumption. • Must be aware of the hazards associated with their business and implement appropriate control measures.
	2.2. **Control measures** are in place including controlling water quality, faecal contamination, hygiene of food handlers, and cleanliness of food contact surfaces.	**Control Measures** • Actions and strategies are implemented to manage food safety hazards, ensuring food remains safe for consumption. • It may involve special practices to minimize water contamination, prevent fecal contamination, ensure food handler hygiene, and effectively clean food contact surfaces.
3.	**Critical Focus on Specific GHPs**	
	3.1. **Greater attention is** being paid to certain GHPs that are critical for food safety, such as enhanced cleaning protocols for high-risk equipment and improved monitoring of disinfection of food contact surfaces.	**Greater Attention** • Focus or rigor in areas where basic practices are not enough to ensure food safety. • Increased cleaning tightness for equipment used in sensitive processes, or improved monitoring and verification of critical control points.
4.	**GHP and HACCP integration**	
	4.1. **The integration of GHP and HACCP** is developed and implemented to prevent, eliminate, or reduce harm to acceptable levels.	**GHP and HACCP integration** • The process of reinforcing GHP with a Hazard Analysis and Critical Control Point (HACCP) system when GHP alone is not sufficient to control the identified hazard. • Involves the development and application of a systematic approach to identifying, evaluating, and controlling food safety hazards, ensuring a comprehensive food safety management system is in place.

Table 2. Implementation Of Hygienic Practices In Primary Production (CKP-STD-GHP-002)

	PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1.	**Implement Environmental Control**	
	1.1. **Sources of contamination from the environment** are passively identified.	**Sources of Environmental Contamination** may include: • Polluted areas, including near industrial facilities that emit odors or sewage. • Contaminated water sources such as industrial wastewater or streams from agricultural land. • The location is close to sources of contamination that may pose a risk to food.
	1.2. **Primary production** is not carried out in areas where the presence of contaminants would cause unacceptable levels of contaminants in food.	**Primary Production**, may include: • Agricultural activities include water use, tillage, and pesticide use. • Management of animals includes feeding and the use of veterinary drugs. • Harvesting and collection of agricultural produce or animal products.
2.	**Carry out Hygienic Production**	
	2.1. **The potential impact of primary production activities on food safety and suitability** is considered at all times.	**The Potential Impact of Primary Production Activities on Food Safety and Suitability** may include: • Food contamination from water sources, soil, or the use of pesticides and other chemicals. • Risk of spreading disease from animals to humans through food. • The influence of hygienic conditions in production on food quality and safety.
	2.2. **Specific measures to minimize and, where possible, eliminate the possibility of contamination** are identified and implemented.	**Specific Measures to Minimize and, If Possible, Eliminate the Possibility of Contamination,** may include: • Use of good farming methods and hygienic practices. • Regular control and cleaning of equipment and production areas. • Implementation of effective pest control and waste management.
3.	**Carry out Handling, Storage and Transportation**	
	3.1. **Food that is not fit for consumption** is eliminated from use hygienically.	**Foods that are Not Suitable for Consumption,** can include: • Food materials contaminated during production or storage. • Foods that are rejected during the selection process because they do not meet health or quality standards.
	3.2. **Food** is protected from contamination by pests or by chemical, physical, or microbiological contaminants during handling, storage, and transportation.	**Meals**, may include: • All products produced from primary production activities intended for human consumption, both in raw form and those that have been further processed.
4.	**Carry out Cleaning, Maintenance, and Personnel Hygiene**	
	4.1. **Cleaning and maintenance** are carried out effectively without compromising food safety.	**Cleaning and Maintenance**, may include: • Regular cleaning and maintenance of equipment and facilities used in primary production. • Measures to ensure that equipment and facilities do not become new sources of contamination.

4.2.	**Personnel hygiene levels** are maintained to ensure personnel do not become a source of contamination.	**Personnel Hygiene Level**, may include: • Maintenance of personal hygiene of workers in the production environment, including hand washing and use of protective clothing. • Regular training and monitoring to ensure all workers understand and implement proper hygiene practices.

Table 3. Design And Arrangement of Facilities and Equipment In Food Establishment (CKP-STD-GHP-003)

	PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1.	**Location and Structure of the Establisement**	
1.1.	**The establisement** is not placed in locations that threaten food safety or suitability.	**Establisement**, may include: • Both fixed and mobile food processing facilities. • A structure that includes a street market, food vending vehicles, vending machines, and temporary buildings such as tents.
1.2.	**Any form of threat from the environment that cannot be controlled** must be avoided.	**Any Threat from an Uncontrollable Environment** may include: • Areas contaminated with environmental and industrial activities. • Areas at risk of flooding. • Areas prone to pest infestation. • Areas where waste cannot be effectively removed.
2.	**Establisement Design and Layout**	
2.1.	**The design and layout** should support adequate maintenance and cleaning.	**Design and Layout**, may include: • Facility design and layout that supports adequate maintenance and cleaning. • A layout that minimizes or prevents cross-contamination.
2.2.	**The layout** should reduce or prevent cross-contamination.	**Layouts**, may include: • Physical arrangements of facilities that include the movement of personnel and materials that can reduce cross-contamination.
3.	**Internal Structure and Installation**	
3.1.	**The internal structure** is built from materials that are durable, easy to maintain, and easy to clean.	**Internal Structure**, may include: • The structures in the facility are made of durable materials, easy to clean, and easy to disinfect.
3.2.	**The surfaces of walls, floors and equipment** should be easy to clean and disinfect.	**Wall, Floor, and Equipment surfaces**, may include: • Waterproof and easy-to-clean surface. • Walls and bulkheads with smooth to high surfaces suitable for operation. • Floors designed to allow adequate drainage and cleaning.
4.	**Facilities and Equipment**	
4.1.	**Facilities for drainage and disposal of sewage** must be adequate and well maintained.	**Facilities for Drainage and Sewage Disposal**, may include: • Adequate and well-maintained drainage and sewage system. • Design that prevents contamination of food or water sources.
4.2.	**Cleaning facilities** must have sufficient hot and/or cold water supply.	**Cleaning Facilities**, may include: • Sufficient and designated facilities for cleaning equipment and devices. • Separate cleaning areas for equipment from highly contaminated areas.

4.3. **Personnel hygiene facilities** should enable the maintenance of appropriate personal hygiene.	**Personnel Hygiene Facilities**, may include: • Adequate handwashing and toilet facilities to maintain proper personal hygiene. • Facilities that are not used for storage of food or objects in contact with food.

Table 4. Implementation Of Training And Competency Development In Food Operations (CKP-STD-GHP-004)

PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1. **Awareness and Responsibility**	
1.1. **Awareness of the role and responsibility in protecting food from contamination or damage** is passively realized by all personnel.	**Awareness of the Role and Responsibility in Protecting Food from Contamination or Damage**, may include: • Awareness of all personnel about their role in protecting food. • Responsibility of personnel in avoiding contamination or spoilage of food.
1.2. **The knowledge and skills necessary to handle food hygienically** are understood.	**Knowledge and Skills Required to Handle Food Hygienically**, may include: • Skills in food hygiene management. • Knowledge of the safe use of cleaning chemicals and other hazardous materials.
2. **Training Program**	
2.1. **Elements to consider in determining the scope of training** are analyzed, including the nature of the hazards associated with food and the way food is produced, processed, handled and packaged.	**Elements to Consider in Determining the Scope of Training** may include: • Types of hazards associated with food, such as pathogenic microorganisms or physical impurities. • How to produce, process, handle, and package food. • The nature and degree of processing or further preparation before ingestion. • Food storage conditions. • The duration of storage of food before consumption. • Use and maintenance of food-related tools and equipment.
2.2. **The training program** is ensured to take into account the level of knowledge and skills of the personnel trained.	**Training Programs**, may include: • Programs that take into account the level of knowledge and skills of personnel. • Program content covering food hygiene principles, contaminant precautions, and the importance of personal hygiene. • Information about products that may need to be passed on to customers, such as allergens.
3. **Instruction and Supervision**	
3.1. **The instruction and supervision required** depends on the size of the business, the nature of the activity, and the type of food involved.	**Required Instruction and Supervision** may include: • The type of instruction and supervision is adjusted to the size of the business, the type of activity, and the type of food involved. • Provision of regular supervision and verification to ensure the effectiveness of procedures.
3.2. **Periodic assessments of the effectiveness of training and instruction programs** are carried out.	**Periodic Assessment of Training and Instruction Program Effectiveness**, may include: • Periodic assessment of the effectiveness of training and instruction programs.

	• Regular supervision to ensure proper execution of procedures.
4. **Retraining**	
4.1. **Continuous improvement Training programs** are carried out as needed.	**Continuous Improvement Training Program**, may include: • Regular review and updates of training programs. • Implementation of systems to ensure the accuracy and relevance of training materials.
4.2. **Systems** are in place to ensure that food handlers and personnel associated with the food business remain aware of all necessary procedures to maintain food safety and suitability.	**System**, may include: • A system that ensures continuous awareness of personnel about all necessary procedures to maintain food safety and suitability. • Recording of training activities as evidence of implementation and review.

Table 5. Implementation of Establishment Maintenance, Cleaning, Disinfection, And Pest Control (CKP-STD-GHP-005)

PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1. **Maintenance and Cleaning**	
1.1. **The establisements and equipment** are maintained in suitable conditions to facilitate all cleaning and disinfection procedures.	**Establisements and Equipment**, may include: • It must be maintained in conditions that facilitate all cleaning and disinfection procedures. • It must function according to its purpose and prevent contamination of food from various sources such as pests, metal flakes, and others.
1.2. **Cleaning** is done by removing food residues and dirt that may be a source of contamination.	**Cleaning**, may include: • Must remove food residues and impurities that could be a source of contamination. • Cleaning products suitable for food contact surfaces should be used.
2. **Cleaning and Disinfection Methods and Procedures**	
2.1. **The cleaning method** is carried out using a combination of physical and chemical methods to remove residues and dirt.	**Cleaning Methods**, may include: • It can involve the use of physical methods such as heating, scrubbing, turbulent flow, or vacuum cleaning. • The use of chemical methods involves detergent, alkali, or acid solutions.
2.2. **Cleaning and disinfection procedures** are followed by chemical disinfection when necessary, with appropriate concentration and application time.	**Cleaning and Disinfection Procedures**, may include: • Involves preliminary cleaning to remove visible dirt. • Application of detergent solution to loosen the soil, followed by rinsing to remove loosened material and detergent residue. • Chemical disinfection may be required after cleaning, especially for surfaces in contact with food.
3. **Effectiveness Monitoring**	
3.1. **The effectiveness of the application of cleaning and disinfection procedures** is monitored and verified	**Application Effectiveness of Cleaning and Disinfection Procedures**, may include: • Must be monitored and verified periodically through visual inspections and audits.

	periodically through visual inspections and audits.	• Monitoring involves measuring pH, water temperature, conductivity, cleaning agent concentration, and disinfectant concentration.
4.	**Pest Control System**	
4.1.	**Pest control systems** are designed to prevent access and breeding of pests.	**Pest Control Systems**, may include: • Including building design, maintenance, and hygiene to avoid creating a conducive environment for pests. • Involves regular inspection of the surrounding area for evidence of infestation and the use of traps or detectors.
4.2.	**Pest infestation prevention and control measures** are carried out in a timely manner by qualified personnel or enterprises.	**Pest Infestation Prevention and Control Measures**, may include: • Maintenance of establisements in good condition to prevent access and eliminate potential breeding grounds for pests. • The use of traps and other methods to control pests without contaminating raw materials or products.
5.	**Waste Management**	
5.1.	**Adequate provision is** carried out for the elimination and storage of waste.	**Adequate Provision**, may include: • Involves the provision of adequate means for the elimination and storage of waste. • Waste should be collected and stored in sealed containers to prevent buildup and pollution.
5.2.	**The waste storage area** is designed to prevent pest infestation and is easy to clean.	**Waste Storage Area**, may include: • It should be easy to recognize, clean, and resistant to pest infestations. • It should be located away from the processing area to prevent cross-contamination.

Table 6. Implementing Personal Hygiene Practices In Food Handling (CKP-STD-GHP-006)

PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1. **Health Status Maintenance**	
• **Individuals known or suspected to be sick or carrying food-borne diseases** are prohibited from entering food handling areas.	**Individuals known or suspected to be sick or carrying food-borne illnesses** may include: • Exclusion from food handling areas to prevent food contamination. • Obligation to report illness or symptoms to management immediately.
• **Affected personnel are** requested to report illness or symptoms to management immediately.	**Affected personnel** may include: • It may be necessary to obtain medical clearance before returning to work after illness. • Exclusion from food handling areas if there is a risk of food contamination.
2. **Reporting Illness and Injury**	
• **Symptoms of the disease** are notified to the management notice	**Symptoms of the disease**, may include: • jaundice, • diarrhea • vomit • fever • sore throat with fever, • skin lesions that appear infected • discharge from the ears, eyes, or nose.

• **Personnel with cuts and cuts** are moved to areas of non-direct food contact, or wounds are sufficiently closed to prevent contamination.	**Personnel with cuts and cuts**, may include: • Assignment to non-direct food contact areas when necessary. • Cuts and cuts should be covered with a waterproof dressing and suitable gloves as appropriate.
3. **Uphold Personal Hygiene**	
• **High standards of personal hygiene** are maintained, including wearing appropriate protective clothing and practicing effective hand washing to prevent cross-contamination.	**High standards of personal hygiene** may include: • Maintenance of a high level of personal hygiene. • Wear appropriate protective clothing, head and beard coverings, and footwear if necessary.
• **Regular hand cleaning, especially after using the toilet or handling contaminated materials, is** mandatory to avoid potential food contamination.	**Regular hand cleaning, especially after using the toilet or handling contaminated materials**, can include: • Wash hands at the beginning of food handling activities, after breaks, after using the toilet, and after handling contaminated materials. • Use soap and water to wash hands, and hand sanitizer only after hands are washed.
4. **Following Proper Personal Behavior**	
• **Behavior** that may result in food contamination is prohibited in food handling areas.	**Prohibited behavior** : • smoke • spit • chew • eat • drink
• **Personal items that threaten food safety are** not allowed in food handling areas.	**Personal Items that Threaten Food Safety** may include: • adornment • watch • pin • false nails/eyelashes
5. **Management of Visitors and External Personnel**	
• **Visitors** are subjected to the same standards of personal hygiene and supervised accordingly.	**Visitors**, may include: • maintenance workers, • personal.
• **Direction** is given to Visitors on the property's hygiene policy and is encouraged to report any health conditions that may pose a contamination risk.	**Directions**, may include: • Property Cleanliness Policy • Encouraged to report any illness or injury that might give rise to cross-contamination issues.

Table 7. Implementing Control Systems In Food Operations (CKP-STD-GHP-007)

PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1. **Product and process description**	

	1.1. **Food products** are accurately described to ensure awareness of hazards and other factors affecting their suitability.	**Food Products** • The description should reflect the intended use, such as ready to eat or require further processing. • Should include information about the target consumer group, the composition of the material, storage, transportation conditions and packaging materials used.
	1.2. **The food production process** is clearly outlined, including raw material intake, processing steps, and handling of by-products and waste.	**Food Production Process** • Consider all steps from the receipt of ingredients to the preparation of the final product. • The flow chart should illustrate all the steps, interactions, and points at which inputs and outputs occur.
2.	**GHP Effectiveness Considerations**	
	2.1. **The effectiveness of GHPs** is critically evaluated to determine whether they adequately address food safety.	**Effectiveness of GHPs** • Evaluate whether GHP currently adequately addresses food safety and suitability based on product and process descriptions. • Adjustments may be required based on specific risks associated with food handling and processing equipment.
	2.2. **GHP adjustments** are made when standard practices are deemed insufficient to ensure food safety.	**GHP Adjustment** • Special adjustments to GHP are needed when deemed insufficient to ensure food safety, such as increased frequency of cleaning or targeted sanitation efforts.
3.	**Monitoring and Corrective Action**	
	3.1. **Hygiene procedures and practices** are monitored regularly to ensure they are in line with controlled hazards.	**Hygiene Procedures and Practices** • Include prescribed practice monitoring methods, responsibilities, and hygiene frequency. • It should correspond to the type of food being handled and the specific hazards associated with it.
	3.2. **Corrective action** is taken immediately when deviations occur, including adjusting processing conditions and handling affected products.	**Corrective Action** • Measures to address deviations from established hygiene practices, such as adjusting processing conditions or isolating affected products. • Measures to identify the cause of deviations and measures to prevent recurrence.
4.	**Verification Activities**	
	4.1. **Verification activities** are carried out to ensure that GHPs have been effectively implemented and monitoring activities are carried out as planned.	**Verification Activities** • Review of implemented GHPs and corrective actions to ensure compliance and effectiveness. • May include assessment of cleaning efficacy and procedure compliance.
	4.2. **The verification process** is carried out	**The Verification Process** includes: • Review of the procedure, • monitoring results, • corrective action, • Note. • temperature control check, • process timing, • overall hygiene practices.
5.	**Key Aspects of GHP**	

5.1. **Special control measures** such as time and temperature control during processing are designated as Critical Control Points (CCPs) in the HACCP system.	**Special Control Measures** • Critical control measures such as time and temperature control during processing to prevent microbial growth. • It may include special process steps such as cooking, refrigeration, and packaging that are critical to food safety.
5.2. **Physical, chemical, and allergen specifications** are established based on sound scientific principles to ensure food safety.	**Physical, Chemical, and Allergen Specifications** • Specifications should be based on scientific principles and include sampling parameters, analysis methods, and acceptable limits. • It is important to ensure that raw materials and materials meet safety and conformity standards before use.

Table 8. Ensuring Product Information And Increasing Consumer Awareness (CKP-STD-GHP-008)

PERFORMANCE ELEMENTS AND CRITERIA:	VARIABLE CONTEXTS
1. **Lot Identification and Traceability**	
1.1. **Each food container** is permanently marked to identify the manufacturer and lot.	**Any food container** • Must be permanently marked to identify the manufacturer and lot. • Marking helps in traceability and effective stock rotation.
1.2. **Product traceability/traceability systems** are implemented to enable effective product recalls and stock rotations.	**Product Traceability/System** • A system designed to enable product recalls and facilitate effective stock rotation. • Implemented in accordance with the principle of traceability as a tool in food inspection and certification systems.
2. **Provision of Product Information**	
2.1. **All food products** are accompanied by or contain sufficient information to enable the safe and correct handling, preparation, storage, display, and use by the FBO or subsequent consumers.	**All Food Products** • Must be equipped with adequate information to enable safe and correct handling, preparation, storage, display, and use by the FBO or subsequent consumer.
3. **Product Labeling**	
3.1. **Pre-packaged foods** are labeled with clear instructions that inform handlers and subsequent consumers about safe handling, storage, use, and display.	**Pre-Packaged Foods** • Must be labeled with clear instructions for safe handling, display, storage, and use. • The label should also identify the food allergen as an ingredient or when cross-contact cannot be excluded.
3.2. **The label** is accompanied by allergen information, either as an ingredient or a warning of potential cross-contact.	**Label** • Must provide important information including handling instructions, storage conditions, and allergen warnings. • Follows international standards such as Codex General Standard for the Labelling of Pre-packaged Foods (CXS 1-1985).
4. **Consumer Education**	
4.1. **Consumer education programs** are conducted covering general	**Consumer Education Program**

	food hygiene, emphasizing the importance of label information and compliance with product instructions.	• Covers general food hygiene to allow consumers to understand the importance of label information and follow instructions. • Educate about the relationship between time/temperature control, cross-contamination, foodborne illness, and allergen awareness.
4.2.	**Consumer education** is conducted on the relationship between time/temperature control, cross-contamination, foodborne illness, and allergen awareness.	**Consumer Education** • Programs designed to help consumers make informed choices related to food hygiene and allergen awareness. • This includes education on WHO's five keys to safer food, emphasizing proper handwashing, adequate storage, and cooking practices.

Table 9. Ensuring Safe And Hygienic Transportation Of Food (CKP-STD-GHP-009)

PERFORMANCE ELEMENTS AND CRITERIA:		VARIABLE CONTEXTS
1.	**General Protection of Food During Transportation**	
1.1.	**Food** is adequately protected during transportation, requiring a means of transport or container appropriate to the nature of the food and the conditions in which it must be transported.	**Food** • It must be protected from contamination and damage during transportation to ensure it remains fit for consumption. • Requires an environment that controls the growth of pathogenic microorganisms or decay.
2.	**Special Requirements for Haulage and Containers**	
2.1.	**Conveyances and containers** are designed and constructed to prevent contamination of food or packaging.	**Conveyances and Containers** • Must be designed and constructed to prevent contamination of food or packaging. • Should support effective cleaning, disinfection and drying.
2.2.	**The design and materials of the Conveyances and Containers** can be effectively cleaned, disinfected and dried.	**Design and Material of Conveyances and Containers** • It should not contribute to food contamination. • Must be suitable for cleaning and disinfection, and maintain environmental conditions necessary for food safety.
2.3.	**Effective separation** of different foods or foods from non-food items is possible to prevent cross-contamination.	**Effective Separation** • Conveyances and containers should allow separation of different foods or from non-food items to prevent cross-contamination. • This separation can be physical or by maintaining different compartments within the same conveyance.
2.4.	**Environmental conditions** such as temperature, humidity, and atmosphere are maintained to prevent microbial growth and damage.	**Condition** • Conveyances and containers must maintain conditions such as temperature, humidity, and atmosphere necessary to prevent food spoilage or the growth of harmful microorganisms.
3.	**Use and Maintenance of Transportation Equipment**	

3.1. **The conveyances and containers used to transport food are** kept in clean, repaired, and good condition.	**conveyances and containers used to transport food** • Must be stored in clean, repaired, and appropriate condition. • Must be able to maintain the environmental conditions necessary to ensure food safety.
3.2. **Containers and conveyances for bulk food transportation** are intended for food use only, or appropriate controls are implemented to ensure food safety and suitability are not compromised.	**Containers and Conveyances for Bulk Food Transportation** • Designated and marked specifically for food use. • Used exclusively to transport food unless adequate controls are put in place to prevent compromise of safety and suitability.
3.3. **Effective cleaning, disinfection and drying** are carried out between different loads, especially when the same conveyance or container is used for different food or non-food.	**Effective Cleaning, Disinfection and Drying** • It is necessary to ensure conveyances and containers are free of contaminants before transporting different food or non-food. • It is necessary to prevent potential sources of contamination from previous loads.

Overall, the development of these competency standards marks a significant step forward in enhancing food safety assurance through better training and more consistent implementation of GHP. The ongoing support and adoption of these standards by stakeholders across the food industry are essential for achieving the desired improvements in food safety and public health outcomes.

CONCLUSION

The research on "Competency Standards for Good Hygienic Practices Facilitator to Improve Competence in Ensuring Food Safety Assurance" has culminated in the successful development and articulation of comprehensive competency standards aimed at enhancing the efficacy of facilitators responsible for implementing Good Hygienic Practices (GHP) within the food industry. These standards are meticulously crafted to ensure that facilitators are equipped with the requisite knowledge and skills and embody the critical attitudes necessary for fostering robust food safety cultures across diverse food handling environments.

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