

NETWORKING MODEL FOR FOOD SAFETY MANAGEMENT IN INFECTIOUS DISEASE HOSPITAL, THAILAND

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Abstract

This research aimed to study the situation of the food safety management, and to identify the problem statement and the achieved factors of the food safety management network. The qualitative research was used with 40 key informants were comprise of those who were experienced in working as the working group, the administrators, the head, the community enterprise, the patience in the Bamrasnaradura Infectious Diseases hospital. All selected by the purposive sampling, and analyzed the data by content analysis. The result found that the 5 problem statements issues which were 1. The operation process 2. The Lack of the technology 3. The community enterprises were insufficient 4. The network issue, and 5. The regulation issue. For the achieved factors can be found 3 issue which were 1. The Ministry of Public Health determined the operational plan 2. The participation process and 3. Communication and understanding with the network

Keywords: Networking, Food Safety Management, Infectious Disease Hospital

INTRODUCTION

A Food Safety Management is not only a regulatory obligation, but also a useful instrument for ensuring safe business operations. It is a systematic way to controlling food safety concerns inside a food business to assure food safety. Every organization must establish, deploy, and manage based on the concepts of Hazard Analysis Critical Control Point (HACCP). Hazard Analysis Critical Control Point (HACCP) is an international approach established in Article 5 of EC Regulation 852/2004 to ensure that food is always safe to eat. It entails identifying food risks and determining what needs to be done to remove or adequately control them) (Bristol City Council, 2023). Whatever their size or product, all food producers have a responsibility to ensure product safety and consumer well-being. That is why ISO 22000 was created. The repercussions of consuming contaminated food might be severe. ISO's food safety management standards assist firms in identifying and controlling food safety concerns while collaborating with other ISO management standards such as ISO 9001.

ISO 22000, which is applicable to all sorts of producers, adds a layer of assurance to the global food supply chain, allowing items to traverse borders and providing people food they can trust) (ISO, 2023). One of the food safety management is a controlled procedure for managing food safety in order to ensure that all food produced meets quality standards and is safe to ingest. This includes everything from receiving supplies to shipping out final items, which means there must be a clear process for each action and function. Furthermore, and it should adhere to HACCP principles, and it is the duty of each individual organization to develop processes based on this. In order to comply with food safety laws, and it is necessary by law) (Foullis, 2021). Another definition of the Food safety refers to the handling, preparation, and the storage of

food in order to prevent the food-borne illnesses and the product contamination. Food-borne illnesses are caused by a lack of food safety in health care. Outbreaks caused by food safety difficulties at health care institutions such as hospitals. The food safety practices involve ensuring that the food given is consumed safely. Because of the hospital's nature, it is a powerful generator of all forms of infectious diseases. In order to avoid the spread of the hazardous pathogens among patients, visitors, caregivers, and staff, infection control policies should be in place. Eating nutritious foods is an important element of the healing process. Another imperative reason to preserve healthy food offices is to supply nutritious dinners for representatives working beneath upsetting conditions to advance ideal execution (Dixit, 2023). HACCP (Hazard Analysis and Critical Control Points) is a baseline tool, which can be applied throughout the food chain that focuses on preventing hazards rather than inspecting the end-products. The focus must be on preventive measures. The HACCP approach should be put in place, implemented and maintained permanently whether meals are prepared in a hospital or institution or by an external supplier. It is essential that all food suppliers involved in supplying to hospitals have a food safety management, based on HACCP principles. The food suppliers should be audited or required to demonstrate the third-party certification of their food safety management when appointed as a vendor.

The HACCP system is a universally recognized the food safety management which identifies and controls hazards that may occur, by strictly monitoring and controlling each critical control point of the food production process, thereby preventing the potential hazards from occurring. This would require proper storage and handling of food from receiving to serving in the ward, monitoring and recording food temperatures and continuous education for employees. The majority of foodborne outbreaks in healthcare settings are preventable if good hygienic practice HACCP principles and prerequisites programmes (PRPs) such as the design and construction, waste removal and pest control have been followed. By ensuring that effective HACCP and PRPs are implemented and maintained, results may increase the patient satisfaction which reduced the hospital-induced malnutrition, reduced the risk of foodborne infections and improve the results of food safety audits.

Creating the awareness and understanding of HACCP among managers and education regarding the control of risk factors remain crucial. There are many benefits of food safety. For example, 1 Avoidance of the ailment and the fatalities. 2) Maintain a strategic distance from the related burdens and disturbances. On the off chance that staff are influenced, they are feeling unwell and hence not performing ideally, this may cause major disturbance to administrations. This might moreover have extreme results and disturbances for patients, particularly on the off chance that an episode has happened and huge numbers of staff unwell, eventually coming about in major problems when attempting to proceed the arrangement of a healing center benefit. 3) Ideal execution and capacity. In extreme cases, the closure of wards (and some of the time entirety clinics) not only puts strain on clinical groups within the influenced institution, but moreover on those that have to be adapt with additional work as a result of their neighbor's closure. Moreover, it may take months for administrations to return to typical particularly where pro teach are influenced. 4) Defending organization notoriety. Ensures your notoriety and improves the patient's certainty within the capacity of the healing

center to care for them and 5) Anticipation of costly restorative medicines and other assets from reaching to squander. By avoiding foodborne sickness, healthcare organizations can avoid pointless costs. For occurrence, a bed is possessed by a persistent or staff part influenced superfluously by disease, this denies somebody else of treatment. Moreover, the work days that are misplaced due to staff being sick, or additional bed days included due to patients being sick can gather altogether (BSI, 2023).

Food safety challenges in healthcare are consisted in 4 issues 1) Need of nourishment security and flare-ups emerging from it can cause genuine ailment, squander of expensive restorative care, the transmission of disease to guests and other patients, preventable passing, and employees' intrusion of administrations. 2) Nourishment security is important to everybody, but defenseless individuals are more likely to be influenced by low-level pathogens and, thus, more likely to be tainted. This puts indeed more noteworthy duty on therapeutic educate to do everything conceivable to guarantee that secure nourishment is continuously arranged and served. 3) Most clinics outsource nourishment administrations. In any case, this does not excluded patients and staff from their duty to supply secure nourishment. Clinic supervisors ought to apply fitting guidelines to nourishment security administration frameworks and comply with legitimate necessities. It ought to be characterized as part of the choice convention and a ceaseless assessment of the benefit supplier. 4) Normal inner reviews have to be confirmed by clinics. Nourishment security issues in nourishment cooking office wellbeing and nourishment security administration frameworks are as pivotal as other disease control surveys (Dixit, 2023).

In Thailand, Ministry of Public Health have seen the importance of the food safety management. Hazardous chemical and unclean places are an important cause of disease. Therefore, promoting and supporting the implementation of food safety management by aiming for the service recipients within the hospital to consume the clean food which can reduce the rate of illness from the consuming unclean food. Also launching the hospital operating policy for the food safety with emphasis on management and to control the operation of every process to ensure the efficiency and food safety integration with all sectors By making a memorandum of understanding for cooperation to promote Support hospital food safety operations during Ministry of Public Health, ministry Agriculture and Cooperatives Pracharath Rak Samakkhi Company Social Enterprise (Thailand) Company Limited Institute Develop community organizations (Public Organization) Ministry of Commerce and the Ministry of Interior, including improving and creating the knowledge for related personnel to be aware of the importance of selecting safe food, vegetables, and fruits by implementing safe food operations according to 3 strategies. 1. Communication and participation 2. Create an environment, and 3. Standard control (Health Administration Division, 2018).

Most of the previous papers focused on many areas in this issue, for example, the first one, Buccheri et al. studies in the title of "Food safety in hospital: knowledge, attitudes and practices of nursing staff of two hospitals in Sicily, Italy". The purpose of this study was to evaluate knowledge, attitudes, and practices concerning food safety of the nursing staff. Results showed that Overall, 401 nurses (279, 37.1%, of the General Hospital and 122, 53.5%, of the Paediatric

Hospital, respectively) answered. Among the respondents there was a generalized lack of knowledge about etiologic agents and food vehicles associated to foodborne diseases and proper temperatures of storage of hot and cold ready to eat foods. A general positive attitude towards temperature control and using clothing and gloves, when handling food, was shared by the respondent nurses, but questions about cross-contamination, refreezing and handling unwrapped food with cuts or abrasions on hands were frequently answered incorrectly. The practice section performed better, though sharing of utensils for raw and uncooked foods and thawing of frozen foods at room temperatures proved to be widely frequent among the respondents (Buccheri et al., 2007). The second one, Alsultan et al. studies in the title of “Cross-Sectional Investigation of the Awareness and Practices of Food Safety among Food Service Catering Staff in Riyadh City Hospitals during the Coronavirus Pandemic”. This study examines food safety awareness and practices among handlers in the food service sector at Riyadh City hospitals during the COVID-19 pandemic.

The findings show that food handlers demonstrated good knowledge, techniques, and attitudes regarding maintaining food quality and ensuring food safety. Moreover, a significant positive correlation between food safety awareness and food safety practices was observed. Nevertheless, the correlation between the food handler’s knowledge and safe food handling was negative. In general, findings revealed the significance of education and the regular training of food service staff to improve learning and ensure better and safer food-handling practices, which could contribute to applying food safety practices in hospitals (Alsultan et al., 2023). The third one, Mkgangara studies in the title of “Prevention and Control of Human Salmonella enterica Infections: An Implication in Food Safety”. This study aims to evaluate the traditional and modern/novel approach to improving HACCP, food safety, and quality management in food and agricultural systems. The modern innovations in food safety management were integrated into improving the traditional HACCP system, including its principles, applications, steps, plans, standards, etc., as well as food safety factors and management, for improved safety/quality in food, agricultural, and pharmaceutical industries.

The study identified many factors responsible for food contamination, including chemical contaminants, such as allergens, histamine, cyanogenic glycosides, mycotoxins, toxic elements, etc., biological contaminants, such as Campylobacter, Brucella, viruses, Escherichia coli, prions, Staphylococcus aureus, Listeria monocytogenes, protozoa, parasitic pathogens, etc., and physical contaminants, such as bone, glass, metal, personal effects, plastic, stones, wood, etc. The results of this study present descriptive preliminary HACCP steps, HACCP principles, safe food handling procedures, ISO 22000, Water quality management, food labelling, etc., with recent modern developments and innovations to ensure food safety and quality management. The study also identified modern/novel technologies for HACCP and food safety management, including light technologies, artificial intelligence (AI), novel freezing (isochoric freezing), automation, and software for easy detection and control of contaminants. With all these understanding and development, the domestic, food, agricultural, and pharmaceutical industries can be well position to ensure safety and quality of products (Mkgangara, 2023). The last one, Maiberger and Sunmola studies in the title of “Effectiveness factors of food safety management systems: a systematic literature review”. This research aims

to explore the literature on the effectiveness factors of FSMSs to identify the literature findings, the emerging themes and suggestions for future research. Findings showed that the effectiveness factors of FSMSs identified from the literature are clustered into five categories, namely (1) FSMS culture; (2) FSMS inspection, verification and audit; (3) FSMS knowledge; (4) Legal regulations; and (5) Prerequisite programmes. Moreover, it was determined that the effectiveness factors featured in a variety of contexts (Maiberger & Sunmola, 2023).

The current study attempts to fill this gap in the literature by focusing on firstly, the situation of the food safety management, and secondly, the problem statement and the achieved factors of the food safety management network.

Research objectives

1. To study the situation of the food safety management
2. To identify the problem statement and the achieved factors of the food safety management network

METHODOLOGY

Research Method

This study utilized the qualitative research by using the in-depth interview for analyzing the situation of the food safety management, and seek the problem statement and the achieved factors of the food safety management network.

Participants

40 key informants were used in this research were comprise of those who were experienced in working as the working group, the administrators, the head, the community enterprise, the patience in the Bamrasnaradura Infectious Diseases Institute. All selected by the purposive sampling, and this research also was approved the ethics by the office of the committee for research ethics (Social Sciences), faculty of Social Sciences and Humanities, Mahidol University.

Instrument

The researchers developed the research questions based on the previous literature which were consisted of the relevant law and regulations about the safety food, the strategy about the safety food management, the safety food policy in the hospital, and the network concept, and divided into two parts (Part one was the situation of the food safety management in Thailand, and another part was the problem statement and the achieved factors of the food safety management network).

Analysis

The content analysis was used in this research.

RESULT AND DISCUSSION

Part one: The situation of the food safety management

Bamrasnaradura Infectious Diseases Institute is the only infectious diseases hospital in Thailand which are responsible for the quarantine, take care, and cure the patient. The process of the food safety management are as follows;

- 1) Defining the policy of the operation in the food safety in the hospital. It is in line of Panurach, et al. The research result found that hospitals food safety management model is concluded of 3 most important aspects of food safety management which are food safety control, sourcing of safe raw materials and factors in food safety managing to be succeeded in both aspects of administrator's policy and support and hospitals food safety development team which all the said 5 aspects cause hospitals food a safety directly and indirectly (Panurach et al., 2011). It is also relevant to Thomann. The results revealed that food safety policy ensures that at no point along the entire food chain through production, storage, transportation, processing, and preparation does food endanger human health (Thomann, 2017).
- 2) Assigning the working team which were consisted of the director, the deputy director, Pharmaceutical group, Communication and public relations group, Finance group, Parcel group, Environmental group, Medical Illustration group, General administration group, and Nutrition group.
- 3) Announcing and communicating the policy to the people, the officer, and the related organizations. It is in line of Hyland-Wood et al. It was found that several countries have successfully reduced their COVID-19 infection rate early, while others have been overwhelmed. The reasons for the differences are complex, but response efficacy has in part depended on the speed and scale of governmental intervention and how communities have received, perceived, and acted on the information provided by governments and other agencies. in this article, they argue that an effective communication strategy is a two-way process that involves clear messages, delivered via appropriate platforms, tailored for diverse audiences, and shared by trusted people (Hyland-Wood et al., 2021). It is also relevant to Radwan and Mousa. The findings indicated that It is important to apply known efficacious principles of risk and health communication strategies. Results indicated that the UAE government communication focused on giving people information about the disease, raising awareness about the disease, motivating health and behaviour change, informing people about government decisions and procedures. The UAE government used many strategies to inform and convince people including clarification of measures strategy, reassurance strategy, ambiguity reduction strategy, behaviour efficacy strategy, correcting misinformation and rumours, advising strategy (Radwan & Mousa, 2020).
- 4) Executing follow the operational plan. It is in line of Mateljak and Mihanović. The results have shown that enterprises with higher operational planning level of development present better effectiveness of the production process in comparison to enterprises with less operational planning level of development (Mateljak & Mihanović, 2016). It is also

- relevant to Towbin et al. The results showed that operational planning is a yearly process in which businesses articulate their goals for the year. Creating a yearly operational plan provides departmental employees with a road map for the upcoming year and helps to tie their daily activities to the larger strategic plan of the organization (Towbin et al., 2018).
- 5) Setting a menu in advance. It is in line of Ducrot et al. Meal planning is a potential tool to offset time scarcity and therefore encourage home meal preparation, which has been linked with an improved diet quality (Ducrot et al., 2017).
 - 6) Purchasing the food ingredients. It is in line of Faulkner et al. It was found that details of local food procurement models were generally lacking; categorisable as either purchases made 'on-contract' via conventional means or 'off-contract'. If hospital foodservices are to increase their local food procurement, they require access to a suitable, reliable, and traceable supply, that acknowledges their complexity and budgetary constraints (Faulkner et al., 2023).
 - 7) Checking the food ingredients quality according to the criteria, and analyzing the pesticide chemicals. It is in line of Wu et al. Analysis revealed that agrochemicals are indispensable materials in agricultural production and play important roles in ensuring both food security and food safety. Meanwhile, the negative impacts of modern synthetic pesticides on humans and the environment could not be neglected. Thus, the production, registration, application and monitoring of pesticides should be strictly checked to ensure their commercial product quality and safety to human health as well as to the environment (Wu et al., 2022).
 - 8) Annual quality inspection. It is in line of Babic et al. The results revealed that the quality inspection is an important component of today's smart manufacturing systems (SMS) (Babic et al., 2021). It is also relevant to Schmitt et al. The findings indicated that a comprehensive and reliable quality inspection is often indispensable (Schmitt et al., 2020).
 - 9) Inspecting the patient food preparation areas in the hospital according to the hospital food safety standards assessment form. It is in line of Teffo and Tabit. The results showed that the possession of inadequate food safety knowledge (FSK) by food handlers poses a serious threat to food safety in service establishments (Teffo & Tabit, 2020).
 - 10) Providing a space to distribute the organic agricultural products, or those certified according to other reliable standards as one of the key informants which said that "We have the policy about this issue specifically." Another key informants which said that "We have many positions in the hospital, and every position was very important, such as Our director, and the deputy director were authorized in commanding, supervising, controlling, and announcing. Also Pharmaceutical group had roles for managing about the Chemical medical supplies". It is in line of Malek et al. The results revealed that organic farming has been proposed as a feasible way to reduce the environmental impacts of agriculture, provide better products to consumers, and improve farmers' income (Malek et al. 2019).

Part two: The problem statement and the achieved factors of the food safety management network

The problem statement

The problem statement can be explained in 5 issues

- 1) The operation process and the hospital personnel were limitation in the aspect of the insufficient budget as one of the key informants which said that “We had everything here whether the process and the man power, but we didn’t have enough money to run since this kind of project needed to invest more than the normal foods”. It is in line of Mukwena and Manyisa. The aim of this study was to assess the preparation for the launch of the national health insurance scheme at a Johannesburg hospital. The investigation found that the hospital was preparing to for the NHI implementation, but that was riddled with lack of resources, poor infrastructure, lack of training, delays in development and poor technological advances (Mukwena & Manyisa, 2022).
- 2) The Lack of the technology as one of the key informants which said that “One of the most important thing in the food safety management network was how to create the holistic management in the food safety which require the technology which we didn’t have it that much”. It is in line of Reisdorf et al. Research shows that digital divides and inequalities are related to lower socioeconomic status and detrimental to social and economic capital acquisition. This article shows that not owning a laptop is negatively associated with overall college performance (Reisdorf et al. 2020).
- 3) The community enterprises were insufficient compared with the community needs as one of the key informants which said that “We had the program to support the community strength but the community responded not well enough since some families may think that grouping with the community wasted their times”. It is in line of Buratti et al. The results revealed that doing business in depleted contexts requires the adoption of an unconventional strategic orientation based on the involvement of the local community and driven by the attainment of economic, environmental and social goals (Buratti et al., 2022).
- 4) The network issue since, the hospital policy has launched the food safety management by using network, that mean most of the times. The hospital has to rely on the network too much as one of the informants which said that “Most of the network comply as the hospital policy in the initial stage. They reduced the role for the next stage.” One of the key informants explained that “The food safety policy in the hospital used the network in the horizontal which focused on the collaboration by using the relation of the node in each networks. It was the policy network both formal and informal among the government and other stakeholders.” Also the network problem caused the delay delivers.” As one of the key informants said that “Some of our network were very far us the hospital, and it may lead to the product damages according to the delay”. It is in line of Kusrini et al. It was found that in a dynamic supply chain environment, problems that arise due to delays in the delivery of raw materials and distribution of products to consumers can pose risks and threats to the company (Kusrini et al., 2020).

- 5) The limitation about the duplicated regulations as one of the key informants which said that “Many regulations were overlapped which caused to the delay.” The problem about the sustainable policy was also raised from one of the key informants which said that “The government shall need to launch the sustainable policy for keeping the local people to take care of themselves, and not to leave their skilled work to do something else for their survives”. It is in line of Aagaard. The results of this study provided that the regulatory overlap on the ground that giving administrative agencies overlapping jurisdiction leads to duplicative or conflicting regulation which is inefficient and unduly burdensome (Aagaard, 2011).

The achieved factors

The achieved factors can be explained in 3 issues

- 1) The Ministry of Public Health determined the operational plan, set the hospital project, and clearly defined the goals of the project as one of the key informants said that “The Ministry of Public Health was strong in setting and advocate the health policy”. It is in line of Singh. The findings indicated that once the vision and mission of any organization is finalized the next step for them to formulate the road map to achieve that vision and mission. One of the ways is to derive strategic objectives which aid the organization to achieve its vision and mission. Generally, these strategic objectives are for short term in comparison to the laid vision and mission (Singh, 2017).
- 2) The participation process as one of the key informants said that “One of the key successful factors was the participation of the public, the private and, the people both inside and outside the organization in supporting or driving the project”. It is in line of Karaba et al. The results showed that the management of public-private relationships to deliver vital public products and services is crucial to ensure high performance (Karaba et al., 2022).
- 3) Communication and understanding with the network as one of the key informants said that “The project couldn’t be achieved without the good communication within and outside the organization”. It is in line of Musheke and Phiri. Results indicated that communication is a very crucial and significant element in an organization, and it is necessary for creating collaboration within the work environment that has effects on organizational performance and decision making (Musheke & Phiri, 2021).

APPLICABLE

The perceiving the situation of the food safety management, the problem statement and the achieved factors of the food safety management network in Bamrasnaradura Infectious Diseases hospital would be the benefit for any other infectious diseases hospitals which might have in the nearly future in Thailand, or the similar context area.

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