THE ROLE OF FUSION CENTERS IN INTEGRATING PUBLIC HEALTH AND MEDICAL INTELLIGENCE GATHERING: A CASE STUDY OF KISUMU, ELDORET, NAKURU, MOMBASA AND NAIROBI IN KENYA.

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Abstract

The prevalence of disease in public health and medicine has periodically been overlooked throughout the past decade due to the reluctance to report wrongdoing and the difficulties in establishing causal relationships between causes and subsequent sicknesses. This happens as a result of the need to react to a variety of emergencies, including public health crises, natural catastrophes, and complicated massive disastrous situations. Security forces' crucial role in fostering national development, notably in preventing disease spread, remains underappreciated. In Kenya, research on health security has concentrated on how political, economic, and social factors influence disease management within counties. This study examines the role of fusion centers in integrating public health and medical intelligence gathering in Kenya. The skills to improve and maintain Kenya's health security, a technical infrastructure assessment for information sharing, and resource allocation are the specific objectives that this study sought to examine. The study employed both primary and secondary data. 200 respondents were studied, among them top clinical leaders, doctors, members of the Kenya Medical Practitioners Pharmacists and Dentists' Union, Kenya Medical Research Institute, pharmacy and poisons board members, patients, security personnel, Kenya Bureau of Standards representatives, national environmental authority, anti-counterfeit authority, and Kenya Revenue Authority, as well as representatives from a few different Kenyan government agencies. Secondary data is collected from journals and documented scholarly articles. The study recommends the establishment of a legal framework in Kenya that encourages collaboration between law enforcement and medical practitioners. It further recommends the establishment of integrated fusion centers in major cities to improve healthcare. There is need for the security agencies in Kenya to learn from countries that have integrated fusion centers with public health and implement their best practices. Lastly, the study suggests that the national and county governments set aside funds to assist with establishing local fusion centers.

Keywords: *Fusion Centers, Medical Intelligence, Public Health, security, Technical infrastructure.*

Introduction

Sharing sensitive information requires cooperation, trust, and capable leadership, which can take time. The practice of counterterrorism has, nevertheless, benefited from coordinated efforts (Fusion Center Accountability and Intergovernmental Information Sharing, 2014). Fusion centers, which combine data from various sources, are an efficient and effective way to exchange information and intelligence, maximize resources, streamline operations, and improve the capacity to combat crime and terrorism, according to the National Criminal Intelligence Sharing Plan (NCISP) (2013). The UN Office of Counter-Terrorism introduced the Global Fusion Cells Program in January 2020 as a best practice for gathering and analyzing data to support intelligence-led action, enabling government informed decision-making, aid in the prevention of attacks, and assure adequate readiness.

According to Ratcliffe et al., (2015), advances in technology and the use of law enforcement data have made it possible for police to combat complex crime issues, such as street criminal groups, which can pose risks and threats to public health. Although the information sharing and analysis concepts of Intelligence Led Policing (ILP), whose techniques were first created to combat complex crimes like terrorism and organized crime, might help alleviate many of the issues encountered by the police. A fusion center can assist national and local governments in identifying and forecasting developing patterns in crime, public health, and quality of life that go beyond terrorism threats (Lewandowski et al., 2018).

The larger Intelligence-Led Policing (ILP) model serves as the foundation for the fusion center idea. ILP places a greater emphasis on the generation and application of information within the larger law enforcement governance structure as opposed to community-oriented policing (COP), community involvement, and participation. Fusion centers, which represent this expanding emphasis on collaboration and consolidation, have come to be known for their emphasis on processed data and valuable information. The Department of Homeland Security (DHS) and local governments in the United States own and run the control fusion centers. By identifying emerging threats, they gather, examine, and disseminate threat intelligence to all levels of government and law enforcement.

Threats to public health can come in a variety of shapes and sizes, including bacteria, parasites, prions, viruses, epidemics and pandemics, communicable diseases, chemicals (including naturally occurring toxins, persistent organic pollutants), heavy metals, and illegal drugs. Unsafe food reportedly costs low- and middle-income nations $110 billion annually in lost productivity and medical costs, according to the World Food Program. 125,000 foodborne illness fatalities among children under the age of five occur annually in about 40% of cases. Food-related illnesses impede socioeconomic development since they burden healthcare systems, discourage travelers, and jeopardize both domestic and foreign trade. This study seeks to answer the following research questions: how does expertise enhance and preserve Kenya's health security?; how does technical infrastructure affect fusion centers; and how does resource allocation affect fusion centers?

Theoretical Basis

The following theories are used in this article to describe the idea of collaboration amongst institutional networks, which has been the subject of numerous hypotheses: the 1972 book Management Theory by Kast and Rosenzweig; A Critical Evaluation of the Resource-Based View Theory and the Open Systems Approach to Management (Peter & Barney, 2003).

Management Theory

According to Kast & Rosenzweig (1972) several philosophers and theorists created general systems as a management technique for organizations after recognizing similarities with other organizational theories. After World War II, open systems theory was developed in response to prior views of organizations, such as Elton Mayo's human relations viewpoint and Henri Fayol's administrative theories, which considered the organization essentially as a self-contained unit. Essentially, the system approach to management acknowledges that a management system is a sophisticated formal system that is organized to function effectively and efficiently to achieve a desired goal. When a system fails to perform as planned due to inadequate communication, human conflicts, or a lack of goal congruency, the entire organization suffers. Even though there are many different management theories, the open systems approach to management is most suited for fostering communication within and among local fusion centers and implementing efficient information exchange. The idea of universal systems developed over time as an organizing theory, with its roots originally in biology and social sciences.

The concept of open systems theory essentially relates to the idea that organizations are heavily influenced by their surroundings. Other organizations that exert economic, political, or social factors comprise the environment. The environment also supplies critical resources that support the organization and contribute to transformation and survival. Management theory includes corrective actions such as goal planning, hiring people for internal and external roles, overseeing the product transformation process, organizing the end results, and managing the flow of information. The concept also strives for the continuous development of an organization. Despite the system's efficiency, the open systems management approach requires constant learning and improvement to evolve the organization rather than maintain a steady state. In essence, open systems theory aims to achieve dynamic equilibrium as stated by Chikere and Nwoka (2015).

The management theory is vital since it offers helpful procedures that help to fortify collaborations with outside organizations and enforce analyst training to facilitate information sharing among fusion centers. The aforementioned management theories give fusion centers the skills they need to often exchange information with their partners by developing constant communication, networking, and teamwork with outside organizations. The necessity for training all fusion center analysts is similarly supported by encouraging team members who share comparable jobs and responsibilities to improve their capabilities and productivity.

Resource-Based View Theory

The pioneers of this approach, Peter and Barney (2003), emphasize the firm's resources as critical determinants of competitive advantage and success. The model posits that a firms' resources are diversified, allowing them to gain a competitive advantage. It also assumes that resource heterogeneity would continue over time because resources required to implement business strategies are not fully transferable among enterprises. According to the Resource-Based View (RBV), businesses can be viewed as assemblages of resources and competences. The assets and skills used by businesses to compete are pricey, uncommon, exclusive, and non-transferable since they cannot be purchased or sold on the open market.

This approach places a strong emphasis on an inside-out business strategy, according to which a company can beat its rivals by utilizing its own internal, distinctive resources and competencies (Barney, 2006). Barney (2006) contends that in order to meet user needs, capabilities must be created rather than used as pre-existing resources. These include people with knowledge,

experience, skills, and talents, as well as machines, devices, and tools with specific technical requirements and characteristics. They also include methodologies, tools, and models installed within an organization, as well as various kinds of tangible assets like real estate and buildings, as well as intangible assets like patents and brand names.

A resource-based approach encourages an organization to promote competitive advantage, achieve firm excellence, gain an organizational edge, and enhance corporate performance and long-term viability. Product, production, and facility innovation are all examples of technical innovation, according to Liao et al. (2008). It has to do with goods, services, and technologies used in industrial processes. The resource-based view concept is centered on a company's strategic resources, such as its organizational, physical, and human resources. Due to the availability of resources, this theory therefore provides the basis for articulating how fusion centers would collaborate successfully and efficiently with the public health sector.

Methodology

This paper adopts a qualitative case study technique to analyze the role of fusion centers in integrating public health and medical intelligence gathering in Kisumu, Eldoret, Nakuru, Mombasa, and Nairobi Counties in Kenya. The Counties are selected since they are densely populated and were representative of the characteristics that enhanced proper generalization of the study findings. The study employs a semi-structured questionnaires that was administered to healthcare officials. The first section entails the respondent profile data. The second section includes the study objectives that are divided into expertise and fusion centers; technical infrastructure and fusion centers; and resource allocation and fusion centers. The study employs open-ended interviews with Key Informants from different fusion centers to better understand their perceptions on integrating fusion centers and public health. Some government officials were interviewed via telephone for their perceptions of the fusion center variable. The findings from the fusion centers' senior leadership are integrated with academic literature to espouse how the public health sector is in need of reforms to curb medical insecurities.

The data collection for this research is acquired through evaluating various secondary sources. The role of the fusion centers in national security is examined through a review of open-source, public domain materials from the Criminal Investigation Department (CID). The feasibility and effectiveness of public health in fusion centers is scrutinized through a review of publicly available

materials from governmental websites, news coverage from scholarly journals or publications, major newspapers, and academic databases. Conceptual and general studies on the relevant theories associated with fusion centers are drawn from relevant peer-reviewed academic and other scholarly publications.

The questionnaire are pre-tested on groups of 20 healthcare facilities in five Kenyan towns: Kisumu, Eldoret, Nakuru, Mombasa, and Nairobi. Unclear questions are removed or amended for clarity. Top administrators, employees, students pursuing careers in healthcare, religious leaders, patients, and Kenyan government officials are among the demographic groups represented. A cross-section of Kenya's accredited medical institutions' top clinical leaders, doctors, the Kenya Medical Practitioners' Pharmacists and Dentists' Union (KMPDU), Kenya Medical Research Institute (KEMRI), Pharmacy and Poisons Board (PPB) officials, patients, security personnel, Kenya Bureau of Standards (KEBS) representatives, National Environmental Authority (NEMA), Anti-Counterfeit Authority (ACA) and the Kenya Revenue Authority representatives received 200 questionnaires. A total of 192 questionnaires are returned, yielding a response rate of 96%. The researcher ensured a conscious effort to include every participant in the sample, and every questionnaire that is returned is reflected in the final data analysis. Quantitative data is analyzed using descriptive statistics as well as other traditional quantitative methods including Principal Component Analysis (PCA) and the Chi-square. The survey data is entered into the Statistical Program SPSS (Statistical Package for Social Science) to evaluate, discuss, and draw the conclusions of the research. For the analysis of the demographic information, the descriptive statistics is entered into a Microsoft Excel sheet.

Discussion/Analysis of Findings

Fusion Center and its Role in National Security

As earlier alluded to in this work, fusion centers, as previously stated, are described as a "collaborative effort of two or more agencies that provide resources, expertise, and information to maximize their capacity to detect, prevent, investigate, and respond to criminal and terrorist activity" (Fusion Center Guidelines, August 2006). The primary products of a fusion center are situational awareness and warnings underpinned by law enforcement intelligence. These are generated through an intelligence process that encompasses the collection, integration, evaluation, analysis, and dissemination of information, ultimately producing actionable intelligence.

Furthermore, decisions must be made regarding the type and volume of information that fusion centers can access. According to Masse, O'Neil, and Rollins (2007), security clearances can range from Secret-level to Top Secret, and all the way up to Top Secret-Secure Compartmentalized Information.

In order to tackle crime, the government works closely with partners and important urban fusion hubs. Standard fusion center responsibilities, such as obtaining, assessing, and disseminating threat information, play a critical role in crime prevention and protecting local communities from violent crimes. The information hubs are uniquely positioned to empower frontline personnel to understand the local implications of national intelligence while also protecting the privacy, civil rights, and civil liberties of people in their communities, by putting national threat information into a local context and assisting frontline personnel in comprehending terrorist and criminal threats they may encounter in the field. The information centers provide to the federal government about the threats and problems they experience in their local communities, allowing it to efficiently support local efforts.

Fusion Centers and Public Health

Public health, in the words of Acheson (1988), is "the science and art of preventing disease, extending life, and promoting human health through coordinated efforts and informed decisions of society, organizations, public and private, communities, and individuals." The purpose of public health is to protect the health of entire populations. These populations may range from an entire nation or geographical area to a single neighborhood. The Centers for Disease Control and Prevention posits that public health is about preserving and improving the health of individuals and society as a whole by promoting healthy lifestyles, conducting research for disease and injury prevention, and studying detection, prevention, and response to infectious diseases. Levesque et al., (2013) asserts that there is consensus that population health takes precedence over individual health, and that public health adopts a population health approach that considers the genetic, behavioral, and socioeconomic factors influencing people's health and well-being.

The potential for disease outbreaks to weaken the relative power of a state, particularly during times of conflict, has had a significant impact on the securitization of illnesses (Curley *et al*., 2011). Public health intelligence (PHI), according to Wei Xin Khong, a Public Health Officer, in the

Ministry of Health, Singapore, is the act of keeping an eye on risks to the world's health by gathering and analyzing data on public health-related events from open source, governmental, and other sources of intelligence. According to WHO (2019), the process of going from data to knowledge synthesis to action with the specific goal of early detection for effective response is known as public health intelligence (PHI).

Sullivan, Milner & Bowsher (2016) argue that several uses for the data acquired through medical surveillance activities include the foresight planning of potential strategic responses and the foresight planning of medical requirements. The acquisition, evaluation, analysis, and interpretation of foreign medical, bio-scientific, and environmental data are all considered to be medical intelligence, according to the United States military. The development of assessments of foreign medical capabilities in the military and civilian sectors as well as military medical planning and operations for the maintenance of the combat force are all relevant to this. Given that health is a nation's greatest asset, the healthcare and medical sectors are the foundational elements that must be strengthened in every nation.

The effectiveness and efficiency with which the healthcare and medical fields are handled and managed will substantially impact the resident's quality of life. According to Howard (1987) and Buchanan and Brock (1989), patients or their surrogates have rights to refuse life-sustaining treatments or request assistance in dying; drug experiments on children, demented or dying patients, and other incompetent or desperate patients; bias-free definitions of health, death, disease, and futility of treatment; and physicians' paternalistic deceptions and violations of patient confidentiality. Controversial subjects include abortion, selection, the involuntary hospitalization and care of mentally ill individuals, the removal of viable organs from brain-dead or cardiac arrest patients, and arguments for fetal testing. There are also conflicts of interest between medical professionals and their employers and third-party payers, both public and private.

In a different conception how public health surveillance systems can be strengthened, Njeru *et al*., (2020) contends that strengthening public health surveillance systems that can swiftly identify and respond to the first cases of disease outbreaks and other public health emergencies calls for a methodical strategy. Early detection and local control of epidemics can be accomplished through the use of effective public health monitoring systems that provide fast and reliable information

(Anati *et al*., 2015). The Integrated Disease Monitoring and Response (IDSR) strategy, introduced by WHO in 1998, is the main method for performing public health monitoring in African nations (WHO, 2019). The framework increases the use of surveillance and laboratory data to better identify and address the primary causes of illness, mortality, and disability in African countries. One of the primary purposes of IDSR adoption is to monitor illnesses and public health event trends to guarantee that any atypical disease patterns, such as outbreaks, are rapidly discovered, examined, and responded to (Njeru *et al*., 2020). The integration of IDSR into the fusion center will enhance the capacity of the government in addressing public health issues.

Fusion centers can bring together security agency analysts and those who specialize in health and medical issues to comprehend and recognize health threats posed by counterfeit products, all crimes, hazards, and links between terrorism and criminal information, as well as health risks posed by pandemics, animals, agriculture, food, and environmental health, among other things. In the United States Department of Health and Human Services (HHS), with assistance and support from other agencies, a comprehensive plan outlining how national and international readiness and response activities will complement and improve overall public health and medical preparedness has been produced as part of the National Health Security Strategy. Information exchange forms part of the strategy.

The integration of the PH/HC community's perspective into the fusion center's collection, analysis, and dissemination of information and intelligence processes enhances the overall homeland security effort by increasing the level of preparedness and situational awareness of PH/HC groups across the country. Epidemics of both communicable and non-communicable diseases have also contributed to the loss of lives and property over the last 25 years. Consumption of contaminated grain has been connected to many incidents of food poisoning due to aflatoxin in Makueni, Machakos, and Kitui in Eastern Kenya, where 123 people died and 333 were hospitalized in 2004 (Mutugi & Maingi, 2019). Another non-communicable medical disaster documented in various parts of Kenya was industrial alcohol poisoning, the most serious of which occurred in Machakos in 2005, killing 53 people (Sharif, 2005).

Public Health in Africa

According to Nayyar GM *et al*. (2017), the proliferation of counterfeit medications has been referred to as a "global pandemic". The growing reports of a wide range of subpar pharmaceuticals, including vitamin supplements, in high- and middle-income countries serve as an example of the pandemic character of this issue (Tabernero *et al*., 2014). Worldwide, it is believed that counterfeit medications have resulted in deaths and extended, serious illnesses, earning criminals an illicit $75 billion annually (Blackstone *et al.,* 2014). The gaps in tackling the issue are databases and intelligence information sharing between security agencies and healthcare professionals. Similarly, researchers, policymakers, regulators, and consumers have become increasingly vocal about the need to address food safety issues in Africa (Anyogu *et al*., 2021; Jaffee *et al.,* 2020). Food fraud, on the other hand, has gotten less attention. Food fraud and food safety are related, and according to the WHO (2015), Africa already carries a heavy weight in this area due to the highest per capita incidence of foodborne illness.

Ghana is not far behind, where Sudan IV, a food dye that is known to cause cancer, is mixed into palm oil. Non standardized milk powder sold in Nigeria lacks animal protein, and vegetable oil sold in Kenya is manufactured from used cooking oil that is inappropriate for human use. Plastic rice, which is meticulously wrapped in the packaging of well-known companies, has taken the place of regular rice throughout Africa (KSCH IP, 2020). Not only are counterfeit and illegal items harmful, but they also have an impact on the sales of regional businesses.

Despite Kenya's legal system, alcohol related problems are still prevalent. In Kenya, the availability of illicit alcohol is expanding, packaged under the names of well-known alcoholic beverages (Mututho, 2014). Methanol is periodically added to the contents of these non-standard packages to increase their effectiveness, which can occasionally have disastrous results. Authorities aimed at preventing alcohol fraud are ineffectual, and through questionable business activities, illicit alcohol is standardized (Kwambai & Kimutai, 2017). The implementing officers lack the skills required to discern between legal and illegal alcoholic brands because they have not had any prior training. As a result, illegal alcohol is sometimes sold at licensed establishments under the pretense of being a well-known brand.

Cancer ranks just behind cardiovascular diseases as the second most common cause of non-communicable disease mortality in both Kenya and the rest of the world. According to Global

Cancer Statistics, there were 42,116 new cases of cancer in 2020 compared to 47,887 new cases in 2018 (MOH Kenya, 2020). Lack of concern for public health in the community can contribute to some cancer causes. The likelihood of poor health outcomes rises when an industry is situated in a rural location where the majority of the populace is weak owing to a lack of resources, understanding about their legal rights, or ability to influence policy decisions.

Interpretation of the Findings

The key issues under study were: expertise, technical infrastructure and resource allocation. Expertise was operationalized using knowledge, level of training and capacity building, while technical infrastructure was operationalized using technology, communication channel and leadership. Resource allocation, on the other hand was operationalized using government funds, transparency and accountability. In this study, which is a case study of the Kenyan cities of Kisumu, Eldoret, Nakuru, Mombasa, and Nairobi, the goal was to ascertain the function of fusion centers in combining public health and medical intelligence collecting. A sample of government officials participated in a semi-structured phone interview. Participants in the interview were questioned about the Fusion Center and how it functions on a daily basis. The responses of the participants were comparable. The term "information sharing" was used by all to describe their Fusion Center.

Additionally, participants were asked how long it generally takes for information supplied by Fusion Centers to other agencies to prompt action. If it were to be shared with public health in this particular circumstance, participants were also asked why. Are there sufficient resources to support the process? One of the top clinical executives responded, "The exchange of information is instant, but there are no established procedures on how information should be shared and utilized by the agencies. As a result, due to a lack of funding and a favorable legal environment, the idea of fusion centers has not yet been operationalized in the counties.

The Pearson Chi-Square was utilized to ascertain the association between the variables because the study's goal was to do so, as can be seen in table 1 below.

Table 1: Pearson Chi-Square

		Expertise	Technical Infrastructure	Resource Allocation
Expertise	Pearson Chi-Square			
	Sig. (2-tailed)			
	N			
Technical Infrastructure	Pearson Chi-Square	.786**	1	
	Sig. (2-tailed)	.000		
	N	192	192	
Resource Allocation	Pearson Chi-Square	.992**	.814**	1
	Sig. (2-tailed)	.000	.000	
	N	192	192	192

(Source: Survey Data, 2023)

The study findings indicated that there is a significant relationship between expertise and technical infrastructure with p=000. This implies that expertise depends on technical infrastructure in integrating public health and medical intelligence gathering. The study findings indicated that there is a significant relationship between expertise and resource allocation with p=000. This implies that expertise depends on resource allocation in integrating public health and medical intelligence gathering. Furthermore, the study findings indicated that there is a significant relationship between technical infrastructure and resource allocation with p=000. This implies that technical infrastructure depends on resource allocation in integrating public health and medical intelligence gathering.

The results derived from the demographic responses provide important insights into the relevance of fusion centers for health management. Based on the results of principal component analysis and multivariate analysis of the chi-square test, the relevance of fusion centers to healthcare management needs was estimated to account for about 66% of the variance according to the responses. Considering the required technical infrastructure, and the readiness and performance of the emergency response system, when clinical leaders were asked to rate the success of fusion centers in healthcare, they gave each capability, resource, and stakeholder engagement a 50% score. After analysis by principal component analysis, it emerged that the employment of fusion centers in Kenyan healthcare management scored 67% variance. The significant variability found implies that fusion centers have the potential to considerably improve the effectiveness and efficiency of healthcare management in Kenya, particularly in the areas of crisis, intervention and preparedness.

Some of the respondents were asked if they could advise the Kenyan government to improve the Fusion Center Network. One of the respondents mentioned that she would want to see the Fusion Center Network launch an intranet system as a way of digitalizing its operations in that all Fusion Centers can work from a given shared system and can all log in to undertake research on emerging cases and merge with the cases that other Networks are working on. She argued that this will increase efficiency in terms of operations and also numerous issues could be tackled from a single platform. Hence the Kenyan government should heavily invest in the technical infrastructure.

The study findings also found that fusion centers encounter various problems in establishing a fully functional integrative information sharing environment. The perspectives supplied by the top administrators questioned for this research unanimously stated that they faced various obstacles due to a variety of resource limits and limitations, the majority of which were resource allocation. The obvious issues fusion centers face when relying on partners and customers to engage with and supply information to the fusion centers are timing issues, between the time information is relayed to the time information is acted upon.

The results of this study strongly suggest that governance or advisory bodies, whether internal to a single fusion center or representing several fusion centers in a state, are important in creating and maintaining successful information-sharing environments for fusion centers. It is therefore

paramount that the government works hand in hand with such advisory bodies to effectively and efficiently disseminate public health information hence prompting medical security.

Conclusion

In an era of increased globalization, public health and surveillance are increasingly important in biosecurity. Bio-surveillance is a new science that expands standard public health monitoring to include the identification and forecasting of bioterrorist threats and disease outbreaks in plants and animals. A reliable bio-surveillance system involves not only the consolidation of different sources of data, but also the analytical prowess to evaluate these data and highlight critical trends for disease diagnosis and prevention. Global health intelligence has emerged as a crucial component of national security in the twenty-first century. It strengthens national defense and deserves a larger share of the finances currently given to conventional warfare. In addition to directly protecting national security, global health intelligence indirectly supports security through soft power, human and health security systems.

Ethical considerations in health management are critical to nurturing a healthy and productive future generation in Kenya. Setting up ethical committees and centers to provide guidance to their constituents requires a collaborative effort from important stakeholders such as physicians, patients, healthcare organizations, and other entities. Through the application of ethical concepts, physicians should cultivate self-regulation and responsibility principles. The study ensured that the respondents' details were not disclosed and also the responses gathered from individuals were strictly for academic purposes. Fusion centers should participate in activities planned by PH/HC teams and organizations at the national, state, and local levels that are in charge of protecting the health of individuals, the community, and the environment. In addition, while conducting exercises to assess fusion center operations and information-sharing procedures, PH/HC organizations and agencies should send appropriate representatives. The development of action plans to close any gaps in collaboration efforts that are discovered during these exercises should be a joint effort between fusion centers and their PH/HC partners.

National development is insufficient without a healthy population, which is responsible for national productivity. An increase in a population that is not healthy reduces a country's wealth. Healthy people are assets, and their existence is not coupled with unhappiness or liability. Kenya's government invests a lot of money in universal health care to ensure that the country has a healthy

population. This article proposes that Kenya's security institutions work together with public health to promote nation building.

Recommendations

Policy makers within the government of Kenya need to create a legal framework that promotes cooperation between law enforcement and medical professionals. To enhance healthcare, it is advised that the Kenya government takes into account developing integrated fusion centers in significant counties. Establishing these centers would not only enhance information sharing between county and national governments but also improve public health and medical intelligence gathering. By acting as information hubs, these fusion centers could efficiently gather data, identify new threats, and aid in the decision-making process.

Fusion centers should prioritize recruiting and training personnel capable of effectively processing and analyzing information. This involves distinguishing between relevant and irrelevant data, understanding the nature of community-specific threats, and applying specialized knowledge to interpret findings. Such personnel would play a vital role in eliminating or mitigating existing threats.

Personnel from the public health and medical sectors should engage in regular collection, analysis, and dissemination of health-related information to law enforcement organizations. This includes sharing data on health security threats linked to the detection of suspected biological or chemical agents within a community.

Kenya's security agency should learn from countries that have successfully integrated public health into their fusion centers, by adopting their best practices. The state can facilitate this by encouraging international collaboration among officials managing integrated fusion centers. Such investment could dramatically enhance the country's capacity to respond to public health threats and emergencies.

National and county governments need to set aside funds to support the establishment of county fusion centers. The government can direct resources to fusion centers allowing the center to function independently. These centers would empower state security agencies to play a more active role in building a healthier nation.

References

Anyogu, &, Ayomide & Anumudu, Christian & Onyeaka, Helen & Areo, Esther & Adewale, Obadina & Odimba, Nneka & Nwaiwu, Ogueri. (2021). Microorganisms and food safety risks associated with indigenous fermented foods from Africa. Food Control. 129. 108227. 10.1016/j.foodcont.2021.108227.

Blackstone, E. A., Fuhr Jr, J. P., & Pociask, S. (2014). The health and economic effects of counterfeit drugs. American health & drug benefits, 7(4), 216.

Bowsher, G., Milner, C., & Sullivan, R. (2016). Medical intelligence, security, and global health: the foundations of a new health agenda. *Journal of the Royal Society of Medicine*, 109(7), 269–273. https://doi.org/10.1177/0141076816656483

Carter, J. G. & Chermak, S. (2012). 'Evidence-Based Intelligence Practices: Examining the Role of Fusion Centers as a Critical Source of Information.' In Lum, C. and Kennedy, L. (Eds), Evidence-Based Counterterrorism Policy, New York: Springer, pp. 65-88.

Chikere, C. C., & Nwoka, J. (2015). The systems theory of management in modern day organizations – A study of aldgate congress resort limited Port Harcourt. *International Journal of Scientific and Research Publications*, 5(9), 1-7.

Curley, M. G., & Herington, J. (2011). The securitization of avian influenza: international discourses and domestic politics in Asia. Review of International Studies, 37(1), 141-166.

Janati, A., Hosseiny, M., Gouya, M. M., Moradi, G., & Ghaderi, E. (2015). Communicable Disease Reporting Systems in the World: A Systematic Review Article. *Iranian Journal of public health*, *44*(11), 1453–1465.

Kast, F. E., & Rosenzweig, J. E. (1972). General systems theory: Applications for organization and management. *Academy of Management Journal*, 447-465.

Kwambai, M., & Kimutai, S. K. (2017). Effects of consumer perceived barriers to the Implementation of Alcoholic Drinks Control Act 2010 on Compliance. International Journalof academic research in Business and social sciences, Volume 7, No.11, pp. 963-976

Levesque, J. F., Breton, M., Senn, N., Levesque, P., Bergeron, P., & Roy, D. A. (2013). The interaction of public health and primary care: functional roles and organizational models that bridge individual and population perspectives. Public Health Reviews, 35(1), 1-27.

Lewandowski, C., Carter, J. G., & Campbell, W. L. (2018). The Utility of Fusion Centres to Enhance IntelligenceLed Policing: An Exploration of End-Users. Policing: A Journal of Policy and Practice, 12(2), 177–193. https://doi.org/10.1093/police/pax005

Masse, T., O'Neil, S., & Rollins, J. (2007). *Fusion centers*: Issues and options for Congress.

Muhammad, Amjad, Islam Saeed. Farag, & Alagawany (2020) Sources, *mechanism of production, nutritional value and its uses in aquaculture nutrition* https://bja.ojp.gov/sites/g/files/xyckuh186/files/media/document/National%20Criminal20Intelligence%20Sharing%20Plan%20version%202_0.pdf

Mututho, J. (2014*). Alcohol in Kenya*: Historical background. 68th World Congress of IOGT International at Cha Am, Thailand. http://www. iogt.org/wp-content/uploads/2014

Njeru, I., Kareko, D., Kisangau, N., Langat, D., Liku, N., Owiso, G., ... & Widdowson, M. A. (2020). Use of technology for public health surveillance reporting: opportunities, challenges, and lessons learned from Kenya. *BMC Public Health*, *20*(1), 1-11.

Ratcliffe, J. H., Sorg, E. T., & Rose, J. W. (2015). 'Intelligence-Led Policing in Honduras: Applying Sleipnir and Social Psychology to Understand Gang Proliferation.' *Journal of Police and Criminal Psychology*, 30(2): 112-123.

Scott, W.R. (2002). *Organizations: Rational, natural, and open systems*. Upper Saddle River, NJ: Prentice Hall.

Sharif SK (2005). Methanol poisoning ProMED International Society for Infectious Diseases

Tabernero, P., Fernández, F. M., Green, M., Guerin, P. J., & Newton, P. N. (2014). Mind the gaps in the epidemiology of poor-quality antimalarials in the malarious world analysis of the World-Wide Antimalarial Resistance Network database. *Malaria journal*, 13, 1-14.

The World Health Organization. (2019). *Technical guidelines for integrated disease surveillance and response in the African* regionhttps://www. afro. who.int/publications/technical guidelines-integrated-disease-surveillance-and-response-african-region.