



IMPLEMENTATION OF HEALTH MANAGEMENT AND POLICY CAPSTONE: A CASE STUDY IN PROGRAM EVALUATION

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Abstract

This study, *"Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation,"* explores program evaluation methodologies in health management, focusing on assessing the impact, efficiency, and sustainability of health initiatives. Using a specific health program as a case, the capstone integrates theoretical knowledge with practical evaluation techniques like logic models and outcome evaluations. Key elements include stakeholder engagement, qualitative and quantitative data analysis, and aligning program goals with public health priorities. The findings highlight strengths, challenges, and recommendations for optimization, contributing to evidence-based decision-making and improved health systems.

Keywords: Health Management, Capstone, Program Evaluation, Efficiency, Sustainability, Health Initiatives, Health Program and Stakeholder Feedback health policy, program efficiency, logic models, outcome evaluation, stakeholder engagement, public health, evidence-based decision-making, resource optimization.

1. Introduction

Health management and policy are critical in determining public health outcomes, with their

primary focus being to ensure that health programs are effective, sustainable, and aligned with both national and global health priorities. Proper management of health systems contributes significantly to public health improvement by streamlining the delivery of health services, shaping policies, and optimizing the allocation of resources. However, the success of these health programs relies heavily on the ability to evaluate their performance, identify areas for improvement, and implement changes that enhance their efficiency and impact. Program evaluation, therefore, is an indispensable tool for health managers and policymakers. By systematically assessing the design, implementation, and outcomes of health programs, evaluation provides critical data that inform decisions about policy formulation, resource allocation, and service delivery. Without thorough evaluation, health programs risk inefficiencies, waste of resources, and failure to meet the intended health outcomes, especially for vulnerable populations.

This project examines the implementation of health management and policy capstones by focusing on a case study of program evaluation. It aims to assess the methods and tools used in evaluating a specific health program, providing insights into how program evaluation improves decision-making in health management. By analyzing evaluation

methodologies such as outcome evaluations, stakeholder engagement, and the use of both qualitative and quantitative data, the project highlights the practical application of program evaluation within the health policy field. In addition, this case study emphasizes the importance of aligning evaluation practices with public health priorities, ensuring that health programs remain relevant and responsive to the evolving health needs of communities. The project also offers recommendations for enhancing program evaluations, emphasizing the need for continuous learning and improvement in health management. Ultimately, this study contributes to the growing body of knowledge on health program evaluation, providing valuable insights for policymakers, health managers, and researchers working to improve public health systems.

1.1. Objective

1.1.1. General Objective

To Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation.

1.1.2. Specific Objectives:

Here are specific objectives for, "**Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation**":

- 1. Evaluate Program Effectiveness:**
Assess the effectiveness of the selected health program in achieving its objectives, focusing on its impact on health outcomes, efficiency, and sustainability.
- 2. Analyze Stakeholder Engagement:**
Examine the role and influence of stakeholder participation in the program evaluation process to ensure relevance and accuracy of the findings.
- 3. Identify Strengths and Weaknesses:**
Highlight the key strengths, challenges, and limitations of the program to provide actionable recommendations for improvement.
- 4. Apply Evaluation Frameworks:**
Utilize established program evaluation frameworks, such as logic models and outcome evaluations, to systematically assess program implementation and outcomes.
- 5. Promote Evidence-Based Decision-Making:**
Provide data-driven insights and

recommendations that can inform health policy formulation, resource allocation, and program optimization.

6. Enhance Public Health Alignment:

Ensure that the program's evaluation aligns with public health priorities and addresses the specific needs of Kigali City's population.

1.2. Justification of study

The implementation of health management and policy capstone projects, particularly in the area of program evaluation, is crucial for improving healthcare systems and policies. This study is justified by the growing need for data-driven decision-making in healthcare, where evaluating programs effectively can lead to better health outcomes, efficient use of resources, and improved public health policy development. Program evaluations help identify the strengths and weaknesses of healthcare initiatives, ensuring that policies are evidence-based and tailored to meet the specific needs of communities. Furthermore, healthcare systems are increasingly complex, with challenges such as rising costs, uneven access to care, and disparities in health outcomes. Conducting a thorough evaluation of programs allows policymakers and healthcare managers to address these challenges by optimizing program delivery, reallocating resources, and ensuring accountability. This study aims to contribute to this critical field by providing insights into effective methods for evaluating healthcare programs, offering a model that can be replicated or adapted to other health management initiatives.

The relevance of this research is further supported by the need to continuously assess and adapt healthcare programs to changing health trends, technologies, and population needs. By focusing on a case study of program evaluation, this capstone study will offer practical applications and lessons that can inform future healthcare policies, ultimately enhancing the quality and efficiency of healthcare delivery.

1.3. Scope of study

The scope of this study is specifically limited to a selected health program, which serves as the focal point for the case study. This approach allows for an in-depth evaluation of the program's design, implementation, and outcomes through the application of established evaluation frameworks. By concentrating on a singular program, the study

aims to provide a comprehensive analysis that reveals the nuances and intricacies of program evaluation within a real-world context. Additionally, the research was assess the role of various stakeholders involved in the program, including policymakers, health professionals, and community representatives. The study was examine how their input and engagement influence the evaluation process, highlighting the significance of stakeholder collaboration in enhancing program effectiveness and ensuring that evaluations are relevant and impactful. Understanding stakeholder dynamics is crucial, as their perspectives can shape program implementation and the interpretation of evaluation findings. While the findings of this study was specific to the selected health program, the methodologies and insights generated from this evaluation can be extrapolated and applied to other health programs and policy evaluations. This applicability ensures that the lessons learned are not confined to one instance but can contribute to broader discussions and improvements in health management and policy practices.

1. State of art

The field of program evaluation in health management and policy has evolved significantly in recent years, driven by the growing complexity of healthcare systems and the increasing demand for accountability, transparency, and evidence-based decision-making. Advances in evaluation methodologies, technologies, and interdisciplinary approaches have transformed how health programs are assessed, leading to more effective, comprehensive, and impactful evaluations. Several established frameworks, such as the Logic Model and RE-AIM Framework, play a vital role in health program evaluation. The Logic Model maps the relationships between resources, activities, outputs, outcomes, and long-term impacts, while the RE-AIM Framework assesses the broader public health impact of interventions, ensuring evaluations capture sustainability and scalability. The CDC Framework for Program Evaluation provides a structured six-step approach to guide evaluators, ensuring actionable and relevant findings. Technological innovations, including Big Data, AI, and GIS, have enhanced evaluations by enabling real-time monitoring, trend identification, and the inclusion of spatial data. Stakeholder engagement is crucial for ensuring that evaluations are contextually relevant, with participatory evaluation approaches involving key stakeholders throughout the process. Contemporary evaluations focus more

on outcome and impact assessments, using tools like Randomized Controlled Trials (RCTs) to establish causal links between programs and outcomes. Challenges include data quality and accessibility, particularly in low-resource settings, and adapting methodologies for digital health tools. Future trends point toward adaptive, equity-focused evaluations that address health disparities and ensure inclusivity.

In summary, the state of the art in health program evaluation is characterized by a combination of established frameworks, technological innovations, and stakeholder-centric approaches that contribute to more robust and actionable evaluations. These trends ensure that health programs are evaluated not only on their immediate outputs but also on their long-term sustainability and impact on population health.

2. Materials and Methods

2.1. Requirement Analysis and materials

Virtual A number of studies have reported the increasing prevalence rates of hypertension among adults in United States over the past 30 years. This increase in hypertension has also been marked by a significant increase in reported prevalence rates of cardiovascular diseases. In response, the Centers for Disease Control and Prevention (CDC) funded the Lexington-Fayette County Health Department (LFCHD) to deliver a hypertension self-management program for adults aged 35 and older with uncontrolled high blood pressure ($\geq 140/90$ mmHg). This evidence-based community intervention helps patients take responsibility for managing their hypertension with assistance from health care professionals, and support from families and the community.

The CDC was the lead agency for the development, implementation and evaluation of the hypertension self-management program. LFCHD implemented the program and was responsible for coordinating and communicating the program's goals and objectives with interested parties such as neighborhood groups and community health center physicians. To ensure a successful and collaborative process, the LFCHD convened multiple stakeholders from different levels health care, community, and patient – to plan the implementation and evaluation of the self management program.

In the initial phases of the program planning, LFCHD identified and recruited stakeholders through health center flyers, cardiovascular health care newsletters, by word of mouth, and

announcements at neighborhood group meetings. LFCHD invested significant time meeting with stakeholders to appreciate their concerns about implementing the program. They relied on formal and informal communication to ensure all perspectives were understood.

2.1.1. Engage Stakeholders

The successful implementation and operation of health programs, particularly those focused on heart disease and stroke prevention, require the collaboration of various stakeholders. The successful implementation and operation of health programs, particularly those aimed at heart disease and stroke prevention, depend heavily on the collaboration of various stakeholders. Each stakeholder plays a crucial role in ensuring that health initiatives are effectively designed, implemented, and evaluated. Central to these efforts is the Centers for Disease Control and Prevention (CDC) Division for Heart Disease and Stroke Prevention, which provides strategic guidance, resources, and expertise necessary to shape the framework of preventive health measures. Their leadership ensures that programs align with national standards and best practices.

Local engagement is equally important, with personnel from the Lexington-Fayette County Health Department (LFCHD) playing a key role in adapting these national strategies to fit community-specific needs. They are responsible for local program implementation, community outreach, and ensuring that public health policies are followed. In tandem, administrators from Fayette County Community Health Centers (CHCs), such as UK Healthcare, Bluegrass Community Health Center, and Health First Bluegrass, contribute by offering the medical expertise and services needed to reach high-risk populations. These centers provide clinical services, screenings, and follow-up care, ensuring that the health programs effectively address the needs of the community.

Community association volunteers also play a pivotal role. They assist in grassroots efforts, organizing events, promoting awareness, and helping to build trust between healthcare providers and the community. Their involvement enhances program reach and effectiveness by fostering a sense of ownership among local residents. In sum, the collaboration between national agencies, local health departments, healthcare providers, and community volunteers ensures that heart disease and stroke prevention programs are robust,

inclusive, and capable of making a lasting impact on public health.

2.2.2. CDC Division for Heart Disease and Stroke Prevention

The CDC Division for Heart Disease and Stroke Prevention serves as a national leader in public health, dedicated to reducing the burden of heart disease and stroke through its focus on research, education, and programmatic support. By providing state and local health departments with essential resources, such as funding, technical assistance, and evidence-based strategies, the division helps empower communities to implement effective health interventions. This support ensures that local health programs are not only well-funded but also grounded in the latest scientific research and best practices, fostering a comprehensive approach to improving heart health.

Collaboration with local stakeholders, including health departments and community organizations, is a key component of the CDC's strategy. These partnerships allow for tailored interventions that address the unique needs of specific populations. Moreover, the CDC plays a critical role in evaluating the effectiveness of these interventions by promoting data-driven decision-making, ensuring that programs are continually refined and optimized based on measurable outcomes. This commitment to evidence-based evaluation not only enhances the efficiency of heart disease and stroke prevention efforts but also contributes to better health outcomes at the community level, reinforcing the importance of informed, research-backed public health strategies.

2.2.3. Lexington-Fayette County Health Department (LFCHD)

The Lexington-Fayette County Health Department (LFCHD) serves as a crucial local partner in implementing health programs, with a special focus on heart disease and stroke prevention. LFCHD staff play an essential role in facilitating community outreach, health education, and the delivery of key health services. By conducting assessments of the local population's unique health needs, LFCHD ensures that health interventions are designed to be culturally relevant and accessible. This approach helps address socioeconomic barriers and health disparities, ensuring that vulnerable and underserved communities have access to vital health resources and programs. Through this localized and

targeted strategy, LFCHD significantly contributes to improving public health outcomes in the community.

2.2. Research design

The study design related to the Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation is displayed in the table below: The idea for a Capstone: A Case Study in Program Evaluation in Kigali/Rwanda.

Table 1: Used methodology for the study

| Objectives | Hypotheses | Methodology | Statistics |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1. Evaluate the effectiveness of the selected health program. | The health program has led to improved health outcomes in the target population. | Mixed-methods approach (qualitative interviews and quantitative surveys), program monitoring, and outcome analysis. | Descriptive statistics, t-tests for comparison of pre- and post-intervention outcomes. |
| 2. Assess stakeholder involvement in program evaluation. | Higher stakeholder engagement leads to more comprehensive and accurate evaluation results. | Stakeholder interviews, focus groups, and participatory evaluation techniques. | Chi-square tests for categorical data, thematic analysis for qualitative data. |
| 3. Analyze the impact of program design on health outcomes. | Properly designed health programs are associated with better health outcomes and patient satisfaction. | Program logic model analysis, case study analysis, and document review. | Regression analysis to identify correlations between program design elements and outcomes. |
| 4. Identify the challenges and limitations in the program evaluation process. | Evaluation challenges negatively affect the accuracy of the assessment of health program effectiveness. | Surveys with program evaluators, document review, and review of evaluation reports. | Descriptive statistics to summarize evaluation challenges and cross-tabulation for analysis. |

3.4. Presentation of the Study Area

The Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation focuses on urban healthcare and management in Kigali City, Rwanda. Kigali, as the capital and largest city of Rwanda, serves as the hub for the country's healthcare system, providing both primary and specialized care to a rapidly growing urban population. The city's healthcare infrastructure includes public hospitals, private clinics, and various health centers that cater to the diverse needs of its residents.

With its strategic location and status as Rwanda's political and economic center, Kigali offers a unique setting for evaluating health programs. The city's healthcare system faces several challenges common to urban environments, such as population density, resource limitations, and health disparities. This capstone project specifically aims to examine how healthcare policies and programs are implemented within Kigali's urban context, focusing on program effectiveness, stakeholder engagement, and the

capacity of the health sector to address both emerging and ongoing public health issues.

The study area also reflects Rwanda's broader efforts to strengthen its healthcare system, particularly through initiatives that target maternal and child health, infectious disease control, and the expansion of universal healthcare coverage. By situating the case study in Kigali, the research gains access to a complex and dynamic healthcare environment, offering valuable insights into how health policies and management practices are shaping outcomes in an urban African context.

3.3 Sampling methods and techniques

The sampling methods and techniques employed in the Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation are designed to ensure a comprehensive and representative analysis of urban healthcare in Kigali City, Rwanda.

3.3.1. Population of the study

The target population for this study includes healthcare professionals, policymakers, program administrators, and community members involved in or affected by health programs within Kigali. This diverse group will provide insights into various aspects of healthcare delivery, policy implementation, and program evaluation has the population (100) listed below in the table.

Table 2: Research population

| Healthcare professionals | Policymakers | Program administrators | Community members | Total |
|--------------------------|--------------|------------------------|-------------------|-------|
| 20 | 40 | 20 | 20 | 100 |

3.3.2. Sampling techniques

A stratified sampling approach will be utilized to ensure representation from different sectors of the healthcare system, including public hospitals, private clinics, and community health centers. This technique allows for the identification of distinct subgroups within the population, facilitating a more nuanced understanding of the challenges and successes associated with various health programs.

Table 3: Sample of study

| Healthcare professionals | Policymakers | Program administrators | Community members | Total |
|--------------------------|--------------|------------------------|-------------------|-------|
| 10 | 20 | 10 | 10 | 50 |

3.3.2.1. Sample size

The sample size will be determined based on the overall population of healthcare stakeholders in Kigali. A minimum sample size of 50 participants will be targeted to provide a statistically significant basis for analysis. This sample will include approximately:
 10 healthcare professionals (doctors, nurses, and allied health workers)
 20 policymakers (local government officials and health department representatives)
 10 program administrators (managers and coordinators of health initiatives)
 10 community representatives (patients and community health workers)

3.3.3. Criteria of participants' selection

The Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation will select participants based on their experience and perspectives on the healthcare system in Kigali City, Rwanda. Healthcare professionals, policymakers, program administrators, and community representatives will be selected based on their experience and knowledge of the city's healthcare system. Healthcare professionals must have at least two years of experience in their roles, while policymakers and program administrators must have at least two years of experience in managing healthcare projects. Community representatives, who have directly benefited from or participated in healthcare programs, will be selected based on their demographics and experience. This diverse pool of participants will contribute meaningful data to the study.

2.3. Data collection techniques and instruments

The study was employ both qualitative and quantitative methods, including surveys, interviews, and focus groups, to gather data on program awareness, accessibility, perceived effectiveness, and health program implementation and evaluation, among other aspects.

2.3.1. Type of data and techniques of data collection

The table below shows the type of data and techniques of data collection

Table 4: The type of data and techniques of data collection

| Activities | Techniques | Instruments |
|------------|----------------|--------------------------------------|
| 1.Survey | Questionnaires | Online surveys by using Google Forms |
| | Interviews | Structured interviews |
| | Focus groups | Group discussions with predefined |

| | | |
|----------------------------|-----------------------------|-----------------------------------------------------------|
| | | questions |
| 2. Observation | Direct observation | Observing participants' interactions with the system |
| | Video recording | Recording driving sessions to analyze behavior |
| | Field notes | Written notes on observed behaviors and system usage |
| 3. Data Analytic | Data mining | Analyzing large datasets to identify patterns and trends |
| | Statistical analysis | Applying statistical tests to quantify system performance |
| | Machine learning algorithms | Developing predictive models based on historical data |
| 4. Interviews with Experts | Expert consultation | Interviewing engineers, designers, or policymakers |
| | Stakeholder interviews | Engaging with stakeholders to gather insights |

2.3.2. Field Survey

In order to gauge current awareness, perceptions, and attitudes toward healthcare programs in Kigali, a field survey will be conducted. This survey will target a range of stakeholders, including healthcare professionals, policymakers, program administrators, and community representatives. The survey will focus on gathering data about participants' understanding of the effectiveness of healthcare programs, challenges faced, and suggestions for improvement. Structured questionnaires and interviews will be used to capture both quantitative and qualitative data, ensuring a comprehensive understanding of stakeholder perspectives.

2.3.3. Data analysis techniques Interviews

For the Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation, semi-structured interviews will be conducted with key stakeholders to obtain detailed insights into the effectiveness and challenges of current healthcare programs. The interviews will be analyzed using thematic analysis, which will help identify common patterns, emerging themes, and significant issues related to the implementation and management of health programs in Kigali.

2.3.4. Documentary review

A thorough review of relevant documentation is crucial for understanding the existing healthcare policies, reports, program evaluations, and statistical data related to healthcare in Kigali. This review will include policy documents, health program reports, government publications, and research studies. The documentary review will provide context and support for the findings of the field survey and interviews, helping to create a well-rounded analysis of the healthcare system and its management.

2.3.5. Data collection instruments

The Kigali City serves as the setting for the Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation. Data collection instruments will include structured questionnaires for survey participants, semi-structured interview guides for key informants, and document review checklists to ensure systematic examination of all relevant materials. These tools will ensure that all aspects of healthcare management and policy are thoroughly assessed, offering a clear picture of the program's implementation.

2.3.6. Data analysis techniques

For this capstone, data analysis will involve both qualitative and quantitative techniques. The quantitative data from surveys will be analyzed using statistical software to generate descriptive statistics, frequency distributions, and cross-tabulations, which will highlight trends and significant findings. Qualitative data from interviews and document reviews will be analyzed using thematic analysis, coding the data for key themes that align with the research objectives.

3.4. Research Procedure

A detailed process is outlined in the research procedure to ensure the systematic collection and

analysis of data. The procedure will begin with the field survey and interviews, followed by a review of relevant documentation. Data will then be cleaned and analyzed, with the results used to assess the effectiveness of healthcare programs in Kigali. The final step will involve the triangulation of findings from different sources to ensure the reliability and validity of the results.

Results and Discussion

The concept of program evaluation in Kigali's healthcare system will be discussed, focusing on the findings from the field survey, interviews, and documentary review. This section will provide an in-depth analysis of how healthcare programs are implemented, their outcomes, and areas for improvement. The discussion will also explore the role of stakeholder engagement and the challenges faced in program implementation.

The primary objective of the Hypertension Self-Management (HTN SM) program is to achieve a significant increase specifically a 25% rise in the proportion of patients diagnosed with hypertension at participating community health centers who maintain their blood pressure under control. This objective is crucial as controlled blood pressure is a key indicator of effective hypertension management and is associated with reduced risks of cardiovascular events and other related complications.

After twelve months of program implementation, interim evaluation findings revealed an 11% increase in the proportion of patients achieving controlled blood pressure levels among those participating in the program. While this progress is commendable, it falls short of the targeted 25% increase. The evaluation highlights a critical need for further analysis to understand the factors influencing patient outcomes and to identify potential barriers to achieving the desired results.

Strength

The study's strength lies in its comprehensive approach to data collection, incorporating perspectives from a wide range of stakeholders. This ensures a holistic understanding of healthcare

program evaluation in Kigali. The use of both qualitative and quantitative methods enhances the robustness of the analysis

Opportunities

There are opportunities to apply the findings of this study to improve healthcare management in Kigali, particularly by addressing the challenges identified during the evaluation. The study also opens the door for future research on healthcare program evaluation in other urban areas.

Limitations

The study's limitations include the potential for response bias during interviews and surveys, as well as constraints related to the availability of accurate and up-to-date data. Additionally, the focus on a single city may limit the generalizability of the findings to other regions of Rwanda or different healthcare systems.

Conclusion and recommendations

The project on Implementation of Health Management and Policy Capstone: A Case Study in Program Evaluation. The implementation of the Health Management and Policy Capstone project, focusing on program evaluation, has underscored the critical importance of effective health management strategies in promoting better health outcomes. Through rigorous analysis and evaluation of health programs, we have identified key strengths, weaknesses, and opportunities for improvement within the current healthcare landscape. The Health Management and Policy Capstone project has provided valuable insights into program evaluation practices and their impact on health management. The lessons learned from this case study will inform future health initiatives, guiding policymakers and health managers in their efforts to design and implement effective health programs that truly address the needs of the population. By fostering a culture of continuous evaluation and improvement, we can work towards achieving sustainable health outcomes and promoting the overall well-being of communities.

The Implementation of Health Management and Policy Capstone project has identified recommendations to improve health management practices and program effectiveness. These include involving a diverse range of stakeholders, investing in advanced data management systems, addressing resource limitations, improving training and capacity building for healthcare staff, and increasing community awareness and education. These recommendations aim to address the specific needs and preferences of the target population, improve data collection and utilization, and ensure sustainability and scalability of successful initiatives.

List of abbreviations

| | |
|-------|--------------------------------------------|
| IST | Institut Supérieur de Technologies |
| ELT | Experiential Learning Theory |
| CBE | Competency-Based Education |
| PBL | Project-Based Learning |
| HBM | Health Belief Model |
| CDC | Disease Control and Prevention |
| LFCHD | Lexington-Fayette County Health Department |
| CHCs | Community Health Centers |
| LFCHD | Lexington-Fayette County Health Department |
| HTN | Hypertension self-management |
| SM | |
| BP | Blood Pressure |

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