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A Case Study in Program Evaluation: A Prospective Program Evaluation of Timely Reporting and Action of an Infectious Disease Outbreak

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The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's capstone including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Destiny Cozart, Student

Dr. Richard Ingram, Committee Chair

Dr. Richard Ingram, Director of Graduate Studies

A Case Study in Program Evaluation
Destiny B. Cozart
College of Public Health, University of Kentucky
Health Management and Policy Capstone

Table of Contents

Introduction	3
Engaging Stakeholders	3
Describing the Program	6
Focusing the Evaluation Design	6
Gathering Credible Evidence	8
Justifying Conclusions	8
Ensuring Use and Lessons Learned	10
References	13

A Case Study in Program Evaluation

A Case Study in Program Evaluation: A Prospective Program Evaluation of Timely Reporting and Action of an Infectious Disease Outbreak

Introduction

Public health is the science and art of preventing disease, prolonging life and promoting health through organized efforts and informed choices of society, organizations and individuals (1). Public health has three core functions that include assessment, policy, and assurance. Derived from the core functions are the 10 essential services. Evaluation is an essential service under the assurance function. Program evaluations are a method to ensure the Center of Disease Control and Preventions (CDC) operating principles are being honored and an opportunity for programs to develop clear plans, inclusive partnerships and feedback systems that allow learning and ongoing improvement to take place (2).

The CDCs Framework for Program Evaluation is made up of six steps including engaging stakeholders, program description, focus and evaluation design, gathering credible evidence, justifying conclusions, and ensuring use and lessons learned. The second element of the framework is a set of standards for quality assessment, which is broken down into four categories: utility, feasibility, propriety, and accuracy (2).

For the purposes of this case study evaluation, the CDCs six step framework for program evaluation in public health will be applied prospectively to evaluate a program ensuring timely reporting and action of an infectious disease outbreak. The Fayette County Public School System (FCPS) has recently endured a Methicillin- Resistant Staphylococcus aureus (MRSA) outbreak. Due to the lack of knowledge amongst the school staff of proper protocols, the superintendent has asked the Lexington Fayette County Health Department (LFCHD) to develop an evaluation plan for the education program in efforts to prevent MRSA and similar infection disease outbreaks in the future (3).

Engaging Stakeholders

Public health services are built on partnerships. Engaging stakeholders begins the cycle of program evaluation. A stakeholder holder can be thought of as anyone that has “skin in the game” or that has investment in what may be learned from the evaluation. Engaging stakeholders is necessary to ensure all perspectives are taken into consideration during change implementation. When and if stakeholders are not engaged, that leaves potential for important information to be left out of the evaluation. Stakeholders are critical and can be categorized into three groups: those involved in program operations, those served or affected by the program and the primary users of the evaluation (2).

In efforts to be equitable and inclusive, and to receive the “whole picture” in program evaluation the stakeholders below vary in fields, education levels, socioeconomic status and those directly affected by MRSA or an infectious disease. It is crucial to lean on community relationships to ensure unique and valuable insights are represented in the program evaluations and change implementation.

Program Operation Involvement	<ul style="list-style-type: none"> ● LFCHD Staff ● KDPH ● Kentucky Department of PH Division of Prevention and Quality Improvement ● Local health care provider representatives (i.e. Hospitals, Clinics, Healthcare Centers) ● CDC ● Community Health Workers ● FCPS Superintendent/ Administration ● FCPS Health Service Administration
Served or Impacted by Program	<ul style="list-style-type: none"> ● Student Athletes ● Parents ● FCPS Staff / Program Enrollees ● Lexington Parks and Recreation
Users of Evaluation Results	<ul style="list-style-type: none"> ● KDPH ● KHSAA ● FCPS and surrounding counties ● Local hospitals and health clinics ● University of Kentucky Healthcare ● Health Equity Network ● Local YMCA/Gyms ● Insurance companies ● Medicaid / Medicare

Note that stakeholders are not limited to those provided on the list above and many are derived from the LFCHD 20204 CHA (4). Chart formatting (5).

The table below describes the roles of the stakeholders

Enhance Credibility of the Program	<ul style="list-style-type: none"> ● KDPH ● LFCHD ● CDC ● University of Kentucky Healthcare ● Kentucky Department of PH Division of Prevention and Quality Improvement
Implement the Program Changes	<ul style="list-style-type: none"> ● FCPS Staff ● Physicians, nurses, and pharmacists ● Representatives from local healthcare providers ● KHSAA

A Case Study in Program Evaluation

Advocate for Changes	<ul style="list-style-type: none"> ● FCPS Staff/ Program Enrollees ● Students ● Families ● Community Health Workers ● Local YMCA/ Gyms ● Health Equity Network
Fund, Authorize, or Expand the Program	<ul style="list-style-type: none"> ● LFCHD ● CDC ● FCPS ● KHSAA ● Insurance companies ● Medicare/Medicaid

Chart formatting (5)

Stakeholder engagement and time commitment plan:

Action Item 1: Conduct a Community Needs Assessment (CNA)

A community needs assessment will be conducted in the beginning stage of the program evaluation. This is designed to provide a thorough background and help identify potential areas of improvement needed in the systems, policies and environment that is currently in place around infectious disease outbreaks, specifically MRSA in FCPS. This initial engagement will also serve as a gateway to assess the social determinants of health (SDoH) status and barriers FCPS and the communities they serve may have in preventing MRSA and infectious disease outbreaks.

Action item 2: Develop a Diverse Community Advisory Board (CAB)

Developing a CAB that meets bi-monthly to support change management by advising or requesting change based on the needs of the community. In these meetings stakeholders will discuss and address the needs they believe are necessary having lived experiences in the communities being served. The meetings will also serve to detect the “temperature” or receptiveness of the program and the adherence in the community being served.

Action item 3: Hold standard meetings with LFCHD, FCPS, KHSAA, KDPH and UKHC

Holding a standard meetings with the healthcare professionals, organizations involved in program operations on the ground, and providers will be key in having updated data, both qualitative and quantitative. Frequent communication will be beneficial in program evaluation to be made aware of challenges and successes throughout the process.

Action item 4: Annual Stakeholders Summit

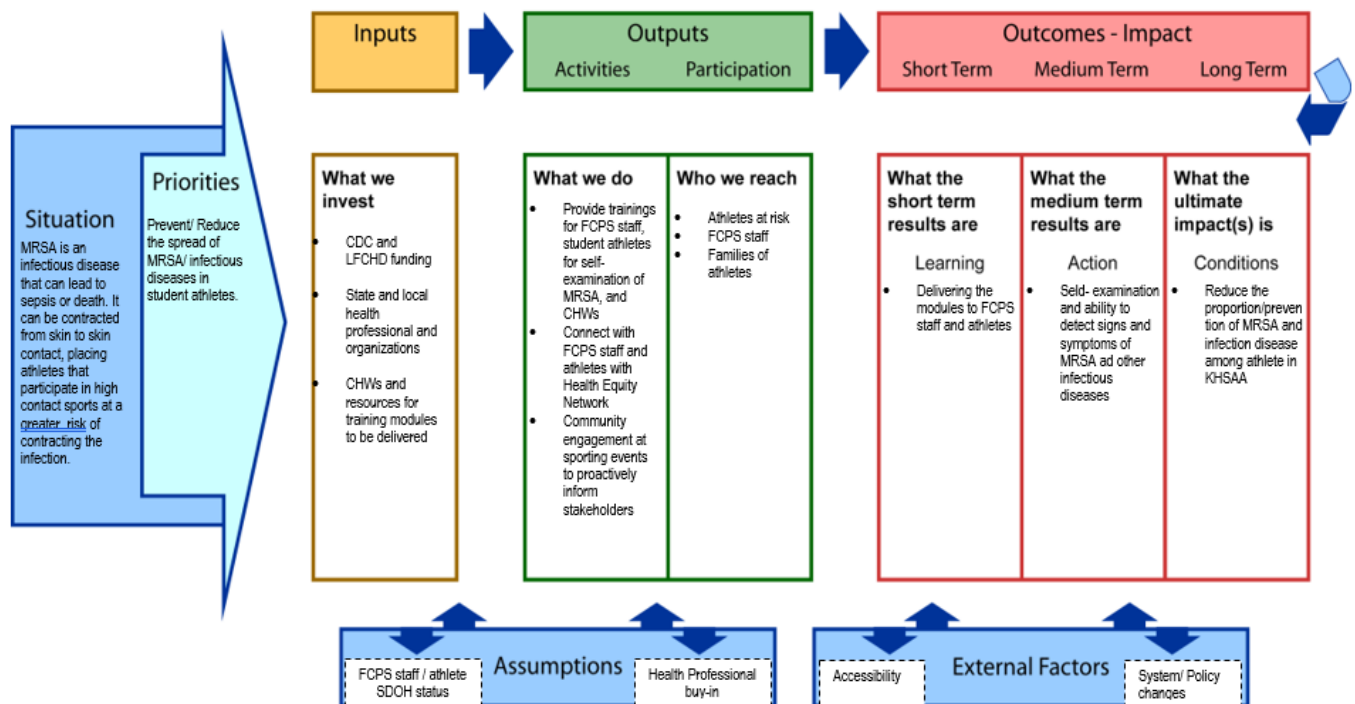
An annual stakeholder’s summit will serve as a space for all representatives to come together and have informative discussions from different perspectives and experiences with the program. The summit will also allow opportunity for collaboration and partnerships to be forged between organizations to better serve the affected population. In addition, program goals, challenges and implementation strategies will be presented with developing action items to carry out.

A Case Study in Program Evaluation

The overall time commitment will vary based on the level of involvement in planning, implementation, and delivery of the program. Health professionals and respective FCPS personnel will have a larger time commitment than CAB members and program enrollees.

Describing the Program

The logic model is method designed to visually conceptualize the programs elements and processes. It can also provide an infrastructure needed to support the program operations by categorizing components into inputs, activities, outputs, and timely results (2).



South Carolina Department of Education Logical Model template (6)

Focusing the Evaluation Design

The main function of a program evaluation is to assess the overall effectiveness of the program. A thorough plan anticipates intended uses and creates an evaluation strategy with the greatest chance of being useful, feasible, ethical, and accurate. Among the items to consider when focusing an evaluation are purpose, users, uses, questions, methods, and agreements. The four focusing characteristics for evaluation are to gain insight, change practice, assess effectiveness, and the effect on stakeholders (2). These criteria will be assessed based on the purpose of program implementation, to ensure timely reporting and action in the event of an infectious disease outbreak.

The users of the evaluation are the LFCHD, FCPS, KHSAA and other community partners. The intended use of the program was to determine if the district wide training modules for staff on infectious disease prevention, in tandem with the policy change for high school sports would

A Case Study in Program Evaluation

reduce the amount of MRSA and infectious disease occurrences in FCPS. The evaluation serves as a tool to determine effectiveness of the program. The evaluation can be deemed reasonable provided the appropriate materials to evaluate the plan, process, and outcome of the educational program. Short term outcomes can be assessed using the initial data and comparing it to post-program implementation data, based on knowledge and confidence of program enrollees to self-identify and report MRSA or an infectious disease in a timely manner. The data can give a quantitative view of cases and outbreaks post implementation and policy change as well. Qualitatively, semi-structured interviews can be conducted to gather themes and surveys can be disseminated to determine the effectiveness of the program from the stakeholder's viewpoint to improve the program. Long-term effectiveness can be measured through outcomes, annual engagements with enrollees, and data at LFCHD can be surveillance to monitor MRSA and infectious disease cases.

Process Evaluation: Questions directed toward LFCHD, FCPS, KHSAA, KDPH, UK Healthcare, service professionals and organizations

- Was the program sufficiently funded and resources readily available during program implementation?
- How were program enrollees notified about the training modules?
- What were some unexpected challenges faced throughout the duration of the program?
- What were some immediate changes implemented to reduce the spread of MRSA amongst athletes?
- What long term strategies were implemented to prevent future infectious disease outbreaks?
- What were the specific roles of those involved in program operation and the user of the program? How might they change in future program planning?

Outcome Evaluation: Questions directed toward FCPS staff and program enrollees

- How confident are you in self-detecting and reporting MRSA or an infectious disease after the completion of your training modules?
- On a scale of 1 to 10, can you rank your knowledge of MRSA and infectious diseases prior to enrolling in the program? And after? (5)
- If you had the option to have the training in person, would you attend?
- How did the policy change affect you?

Gathering Credible Evidence

The evaluation should attempt to collect relative information that encompasses the program so that credibility can be assessed. Information should be received by stakeholders. Having credible evidence add strength to the evaluation and the recommendations that follow (2). The evaluation questions below can be used as assessment outcomes or helpful data information to contribute to indicators.

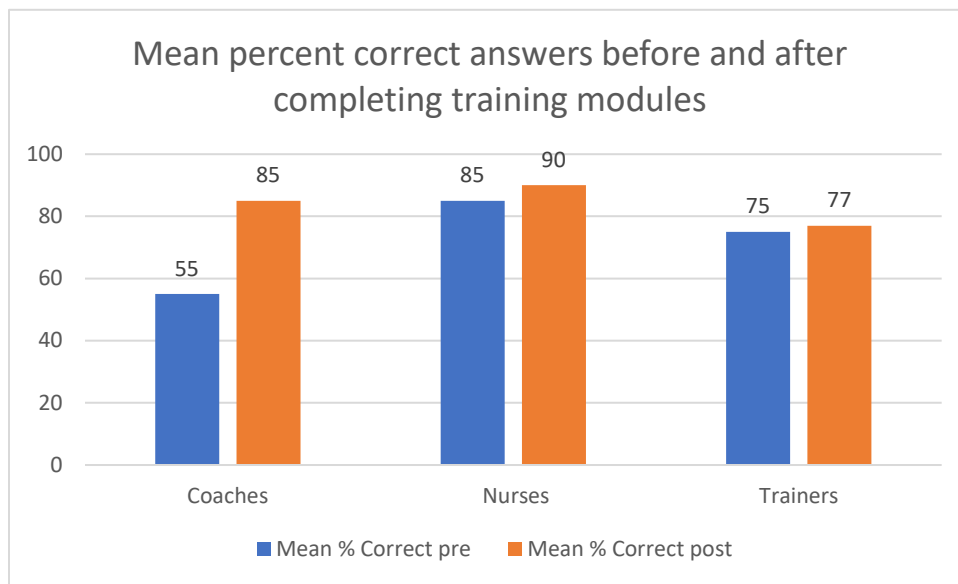
	Evaluation Question	Indicators	Data Sources/Methods
Question 1	Was the program sufficiently funded and resources readily available during program implementation?	<ul style="list-style-type: none"> • CDC/LFCHD/KDPH funding • Number of community partner sponsorships • Documentation of allocated resources • Community engagement events • FCPS budget • New sport equipment • Program enrollee incentives 	<ul style="list-style-type: none"> • Financial documentation/invoices • Interviews with staff • Staff Surveys
Question 2	How confident are you in self-detecting and reporting MRSA or an infectious disease after the completion of your training modules?	<ul style="list-style-type: none"> • Increase in program enrollee confidence level to self-identify and report post-program • Less cases of MRSA and infectious diseases during high contact sport seasons 	<ul style="list-style-type: none"> • Qualitative interview with program enrollees • Post -program surveys • KDPH/LFCHD data reports

Chart formatting (5)

Justifying Conclusions

This portion of the evaluation framework provides an accountability factor that the pursuit to improve the program is still at work. It also serves to ensure the findings are disseminated appropriately to all stakeholders. The preparation is strategic and requires strong relationships with stakeholders. There are five critical elements to use the program evaluation product including design, preparation, feedback, follow-up, and dissemination. Making claims regarding the program that are warranted based on data that have been compared against pertinent and defensible ideas of merit, worth, or conclusions are justified when they are linked to the evidence gathered and consistent with the agreed-on values or standards of stakeholders (2).

A Case Study in Program Evaluation



University of Kentucky College of Public Health. (2024). HMP Capstone Prompt (3)

Significant Evaluation Result 1: Out of all the FCPS staff that completed the training modules, athletic trainers had the lowest percentage of gained knowledge at only a 2% increase, and the lowest percentage of correct answers post-module training at 77%.

Recommendation: The recommendation is that athletic trainers are to attend a mandatory in-person training session to review and conceptualize the curriculum. This is to ensure they are competent and equipped on how to identify, take proper action, and report MRSA and/or other infectious diseases in a timely manner. To ensure this does not continue in the future any trainer or FCPS staff members that score below an 80% post-training module, will be mandated to attend an in-person session for content review. Due to this year's data results, all athletics trains will attend an in-person training session. In addition, random fidelity will be conducted during high contact sport seasons by athletic training administration personnel. Administration will report to LFCHD.

- **Utility:** Different interpretations of the findings have been considered. Athletic trainers could have formed a tolerance to identifying MRSA symptoms being that they are with the athletes more than all other staff.
- **Feasibility:** The implementation is realistic, the in-person session can be during the off-season of high contact sports to avoid burnout for staff. We will ensure that training is held in the morning to avoid conflict with afternoon and evening athletics obligations such as games and practice times. There will also be a makeup session date held for athletic trainers who cannot make the scheduled session. All staff and community members are welcome to attend these in-person sessions.
- **Propriety:** The conclusions and recommendations are reflective and respectful of key stakeholders by adapting the times and allowing for a make-up session if needed. Sessions will be open to all stakeholders in the FCPS system to remove any extra attention from the athletic trainers.

A Case Study in Program Evaluation

- Accuracy: Conclusions can be justified by existing data and real time data will be monitored closely to assess affective, modifications will be made as data suggests.

Significant Evaluation Result 2: All FCPS staff have room for improvement according to the data.

Recommendation: A recommendation to appoint a representative from each FCPS staff: coaches, teachers and athletic trainers will be given one year to establish a sustainable community partnership to promote continued education and effort in preventing MRSA and infectious disease outbreaks among sports teams.

- Utility: Another interpretation of the findings is that an increase in correct answers no matter the percentage point deems an effective program.
- Feasibility: The implementation is realistic being that there is a significant amount of time given to forge the partnerships. This will also aid in the sustainability of the program and allow continued education for staff to be aware of the latest and most effective information about prevention and timely reporting of infectious diseases.
- Propriety: This conclusion was made with key stakeholders in mind. Ensuring the FCPS staff have the most up to date information and keeping athletes safe.
- Accuracy: Conclusions can be justified by existing data and real time data will be monitored closely to assess affective, modifications will be made as data suggests.

Ensuring Use and Lessons Learned

Ensuring that stakeholders are made aware of the findings of the program process that have played a role in is key. This is to make certain that the program achieves its primary purpose, which is to be useful to the populations that need the information the most. There are many factors that influence the use of the evaluation, such as credibility, report clarity, timeliness of the report and presenting of findings, disclosure of fundings, impartial reporting and cultural sensitivity to the populations being served (2). The program evaluation will be disseminated to the appropriate stakeholder using a variety of methods including:

- Every stakeholder and organization will receive an email of the program evaluation, along with an invitation to a presentation of key findings and discussion of potential improvements for the future.
- Formal reports will be disseminated to LFCHD, KDPH, KHSAA, UK Healthcare and other professional health organizations in the form of a traditional program evaluation paper and oral presentation. This report will be tailored towards stakeholders involved in direct program operations and will contain field specific language, goals, and implementation strategies. Applicable data, graphs and charts will be used to better visualize the data.
- In collaboration, FCPS the LFCHD will have an infographic and social media reels to meet some of the stakeholder where they are, and to keep them abreast on current practices and recommendations, as well as future partnerships.
- Infographics will be posted in all athletic facilities in FCPS to better disseminate data driven practices and retain the basic information about prevention, signs, symptoms, and timely reporting of infectious diseases to athletes and coaches.

A Case Study in Program Evaluation

- Understanding the demographic of FCPS and the diverse population they serve, formal content and infographics will be made available in different languages as needed (7).

Given the importance of dissemination methods, the chart below identifies all stakeholders and the plan specific communication they will have throughout the program evaluation. Outlining what, when and the frequency of communication throughout the program evaluation period.

Stakeholder Engagement Plan:

Stakeholder	What	When	How often
LFCHD Staff	<ul style="list-style-type: none"> • Program evaluation findings • Current data/events surrounding program specific content • Updates in practice recommendations • County cases of infectious diseases • Change implementation plan 	All stages of the program evaluation	Weekly/Bi-Weekly, if cases rise, then daily
FCPS Staff. Program enrollees, athletes & Families	<ul style="list-style-type: none"> • Program evaluation findings • Updates in practice recommendations • County cases of infectious diseases 	Initial and final stages of the program evaluation	Monthly or need to know basis
KHSAA	<ul style="list-style-type: none"> • Program evaluation findings • Current data/events surrounding program specific content • Updates in practice recommendations • County cases of infectious diseases • Change implementation plan • Fidelity reports 	All stages of the program evaluation	Weekly/Bi-weekly, if cases rise, then daily
Local health care	<ul style="list-style-type: none"> • Program evaluation 	All stages of the	Weekly basis

A Case Study in Program Evaluation

provider representatives (i.e., UK Healthcare, CHWS)	findings <ul style="list-style-type: none">● Current data/events surrounding program specific content● Updates in practice recommendations/ care services● County cases of infectious diseases● Change implementation plan	program evaluation	
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Chart formatting (5)

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