

Safe Swimming: A Call For Stakeholders To Become Involved 2009 - 2010

Environmental Public Health Leadership Institute Fellow:

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EXECUTIVE SUMMARY:

Attractions for Florida's permanent residents and tourists include 48,726 public swimming pools, spas, wading pools, interactive water features and bathing places, hereafter referred to as "pools." 64E-9, Florida Administrative Code (FAC)¹ was adopted to meet the goal of prevention of disease, sanitary nuisances and accidents associated with these. However critical violations are consistently identified through the state's inspection program and documented cases of recreational waterborne illnesses (RWI's) occur.² 2007-2008 data demonstrate statewide non-compliance rates of 9.9% disinfectant level, 7.7% pH and 16% pool log maintenance. During the same period, the rates in Martin County, Florida were 10.6%, 6.8% and 59% respectively.

The Centers for Disease Control and Prevention (CDC) Healthy Swimming program emphasizes that "RWI prevention is no different (*than other risks that have been identified at the pool*). It will take a combination of equipment and design improvements, new thoughts on pool policies and management, and critical training and education of staff. However, the responsibility for preventing RWIs does not fall on pool staff alone. Swimmers need to be educated about the necessary behavior changes that they need to make in order to reduce the spread of RWIs. Because this is such a complex problem, pool staff, swimmers, and health departments all have a role to play in reducing the spread of RWIs."³ Clearly the regulatory approach alone cannot ensure healthy swimming.

Using the Systems-Thinking Approach, a focusing question was developed: Why are we unable to get pool owners to keep a daily log? Currently safe operation of the majority of the public pools is left to the contracted pool companies which provide service two or three times a week. The vision is: If owners were personally concerned about the safe operation of their pool, they would accept more responsibility. Water quality violations and equipment failures would be detected and appropriate corrective action initiated more quickly thereby reducing the risk to patrons. In addition, owners are in an ideal position to encourage their patrons in the CDC guidelines for healthy swimming. The challenge is how to achieve that vision.

As a first step towards securing active concern and increased participation in the operation of their pool, a public presentation was offered to stakeholders informing them of accidents and illnesses associated with public pools throughout the country including documented cases of recreational waterborne illnesses in Florida within the past few years. The presentation was designed to show the possible serious consequences to the health of their patrons by failing to comply with the regulations of 64E-9, FAC. It was pointed out that when the Code is followed, the risks do not disappear but they are managed. An appeal was made for attendees to share concern for safe operation of the pool by becoming more involved with its day to day operation.

INTRODUCTION/BACKGROUND:

Most state promulgated rules for public swimming pool operation, including Florida's rule (64E-9, FAC), require permitted facilities to maintain chemical levels (disinfectant and pH) within strict limits. Operators are also required to maintain a daily maintenance log designed to identify

unsafe bathing conditions which would trigger a search for the cause of those conditions followed by implementation of corrective action. Failure to monitor chemical levels daily is a violation and allows improper chemical levels to go unnoticed and uncorrected thereby increasing the risk of transmitting water-borne diseases. In Martin County, over the 4 year period July 1, 2005 – June 30, 2009, 11.5-23.1% of all routine inspections revealed violations that required the pool to be closed. 10.8-22.5% of all routine pool inspections identified improper chemical concentrations. 15.3-62% failed to maintain a daily maintenance log.

Professional pool operators usually understand the value of keeping a daily log but these companies typically service a pool only 1-3 times in a week. In most instances, management companies and pool owners leave pool maintenance to the pool company and do not understand the value of keeping a daily log and/or have no staff to do so. Florida does require completion of a pool operator certification course for those who service pools but owners or their direct employees are exempt from this certification. No training is currently being offered by the Martin County Health Department other than brief discussions during inspections.

The stakeholders directly involved with public swimming pools in Martin County are the pool owner (Condo Owners Associations/Home Owners Associations/Property Owners Associations/Corporations), the individual property owners or joint owners who live within the COA/HOA/POA, Property Management Companies, Pool Maintenance Companies and patrons who actually utilize the pool. Currently, most of these have little or no direct relationship with the department of health/inspector and may have no knowledge of inspection results or violations. When an inspector closes the pool due to violations, it is often the pool maintenance company that addresses the situation, corrects the violation and reopens the pool. Other stakeholders typically do not become involved. Because a re-inspection is not required before re-opening the pool, it may encourage the misunderstanding that the violation does not truly pose a significant health threat.

Utilization of the Environmental Public Health Performance Standards review identified that collected pool data was not being examined, gaps identified, objectives formulated and action steps designed and implemented. Supervisors express that getting the inspections completed is the number one priority. There is little or no attention given to inspection results or observed violations (data). Because of high turnover rate of inspectors and the time necessary for a new inspector to understand the topic, inspectors are often severely limited in their ability to “see the big picture as well as the details.” Consequently, the inspector may not believe there is a serious health risk associated with violations and/or may not convey the seriousness to the operators. This notion may be encouraged by the fact that although the Florida Department of Health has identified numerous recreational water-borne disease outbreaks associated with commercial swimming pools and bathing places over the past several years, to date, none have been identified at any of the permitted facilities in Martin County.

Even if the inspector does understand that the violations are serious, he/she is bound by the “quota” system. While it is true that sometimes, legal recourse can be relied upon to bring about compliance until understanding and “ownership” is achieved, currently there is very little enforcement action to correct violations except to indicate it is a violation on the inspection

report. There is no legal follow-through in Martin County, although such policy and procedure is available. As such, there is little leverage to bring about change.

Healthy people 2010 does not include any goals for swimming pools but does include the goal of reducing water borne disease outbreaks arising from water intended for drinking among persons served by community water systems.⁴ Studies are beginning to show recreational water is also a source of waterborne diseases.^{5,6} It is, therefore, important to address this additional source of waterborne diseases.

Problem Statement:

Why are we unable to eliminate critical swimming pool violations, i.e. chemistry violations (Chlorine/Bromine, pH and stabilizer), despite our best efforts including the fact that these violations require the pool to be closed?

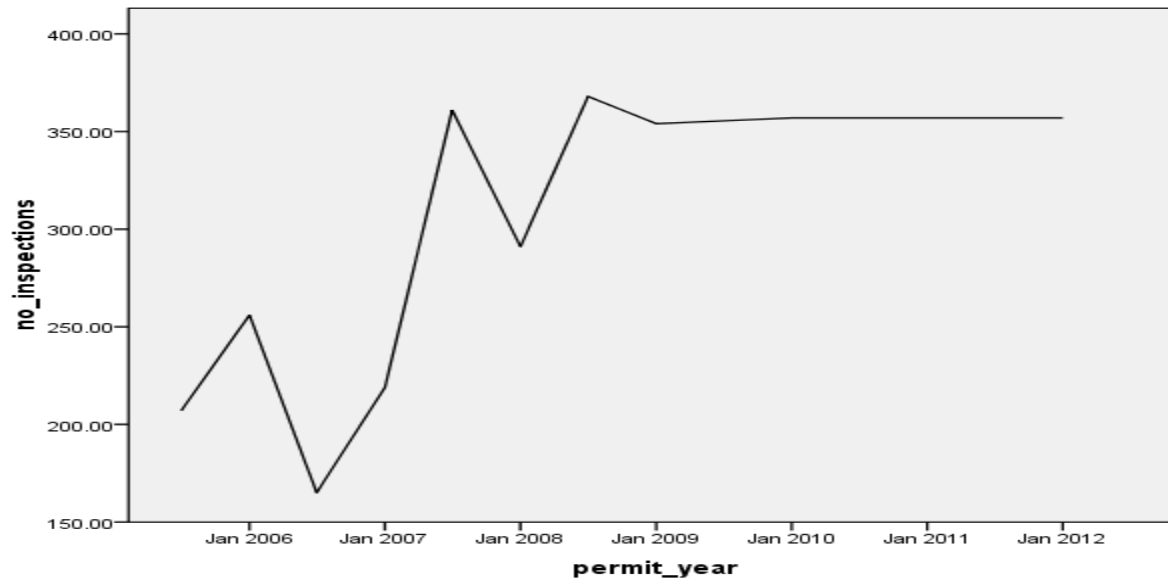
Vision:

If pool owner/operators were personally concerned about safe operation of their pool, they would accept more responsibility for maintaining their pool including complying with the requirement to maintain the swimming pool logs daily. Water quality violations and equipment failures would be detected more quickly and appropriate corrective action could be initiated thereby contributing to the overall goal of prevention of disease, sanitary nuisances, and accidents by which the health or safety of an individual(s) may be threatened or impaired when utilizing public swimming pools and bathing places.

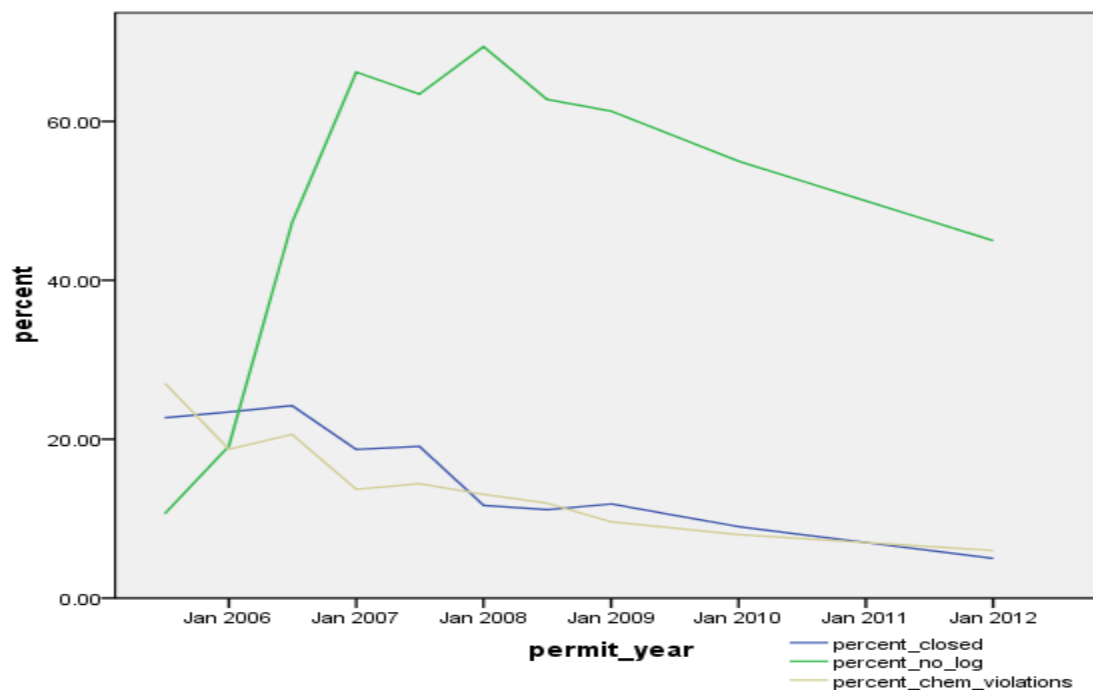
Cost-Benefit Analysis:

	Changing	Not Changing
Benefits	<ol style="list-style-type: none"> 1. Violations identified more quickly so pool operation has a better chance of operating within safe levels 2. Less chance of patrons becoming ill from using pool 3. Less of a liability issue 	<ol style="list-style-type: none"> 1. Unnecessary to identify someone to complete the task 2. Pool is only closed if inspector observes violation 3. Items are only fixed when inspector insists on repair
Costs	<ol style="list-style-type: none"> 1. Have to train someone to complete items on log sheet and to understand what corrective actions would be required. 2. Erroneous testing may result in unnecessary calls to pool company. 3. Pool may be closed more frequently because violations are identified 4. There may be additional maintenance costs 	<ol style="list-style-type: none"> 1. Pool is shut down when inspector comes 2. Patrons are unhappy 3. Greater possibility for recreational waterborne illness to occur

Behavior Over Time Graph:

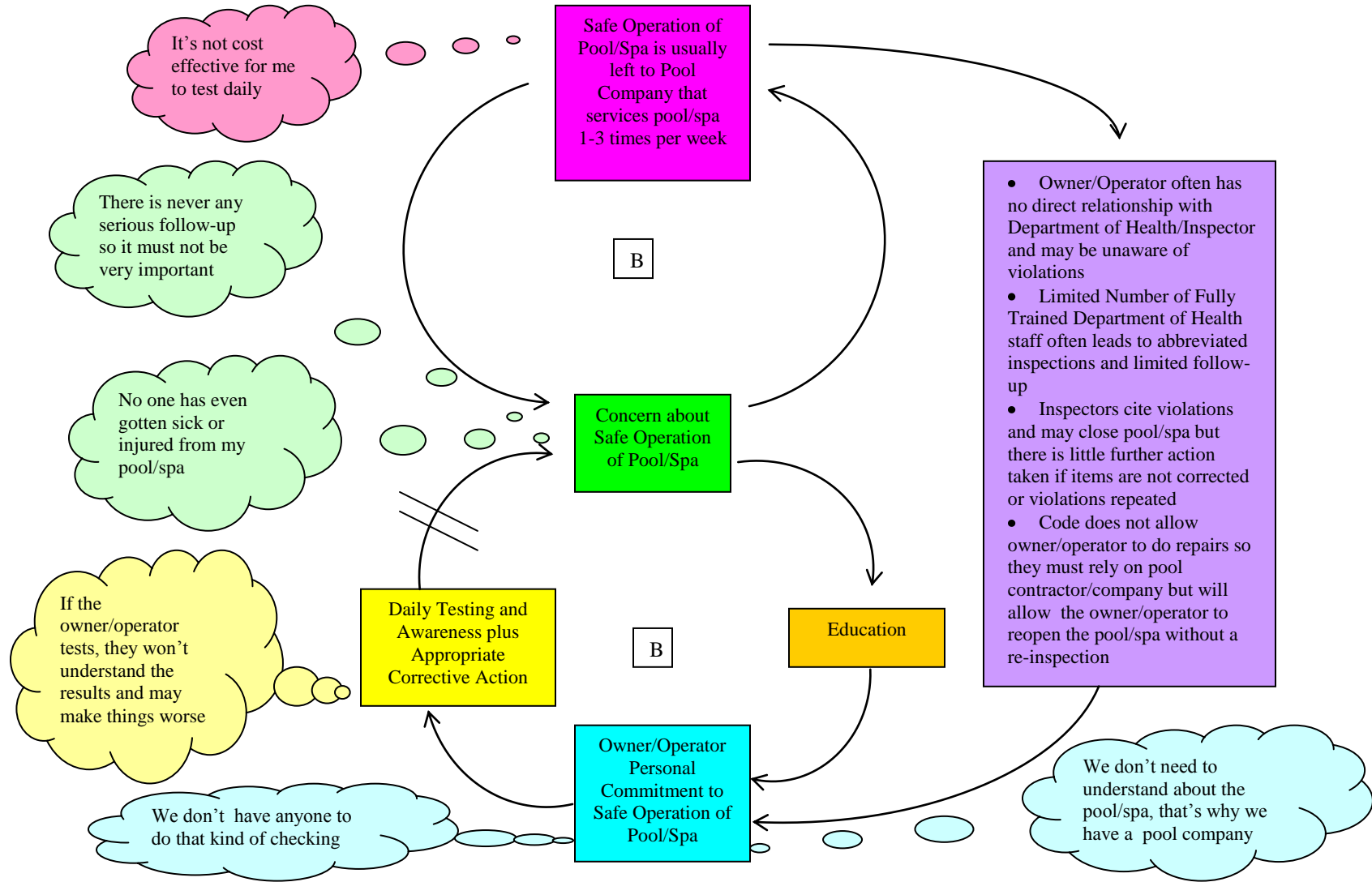


The permit year for Florida’s public swimming pools is from July 1 of one year to June 30 of the following year. Standard operating procedures call for an inspection frequency of two inspections per year. In 2009, Martin County had approximately 350 permitted public swimming pools (including pools, spas, wading pools and interactive water features). The lack of inspections done during the 2005-2006-2007 permit years can be attributed to a lack of trained staff due to turnover combined with active hurricane seasons which resulted in staff being called to disaster response activities in lieu of normal inspection duties. The drop in inspections during the 2007-2008 permit year is attributed to the loss of trained staff and the need to train new staff. It is projected that if trained staff can be maintained, the required inspection frequency will be met. (Note: It is clearly recognized that there is a need to improve training of new staff in the public pool program regarding not only swimming pool rules and regulations but the actual operational components of pools as well.)



The initial change in the percentage of violations of daily maintenance logs may be attributed to a change in reporting. Prior to 2006-2007, this violation was often not indicated on the inspection sheet. Since July 1, 2006, there has been little change in the number of daily maintenance log violations. It is unclear if increasing the number of inspections contributed to the reduction in the number of chemistry violations or if this was unrelated. It is anticipated that if this project is successful, the percentage of violations will continue to decrease. As owners/operators take an active role in the daily maintenance of their pool, there should be a reduction in the number of chemical violations which will reduce the likelihood of a recreational waterborne illness outbreak. This can serve as motivation for patrons to assist in maintaining the daily log since they are the ones who are most at risk if violations occur. One added benefit of this proposed trend will be a decrease in unsatisfactory inspections requiring a re-inspection for which there is no monetary compensation for time spent. This may free up time for the inspector to develop a more direct relationship with the owner/operator through one-on-one hands-on discussions and/or public trainings.

Causal Loop Diagram and Shifting the Burden Archetype:



10 Essential Environmental Health Services:

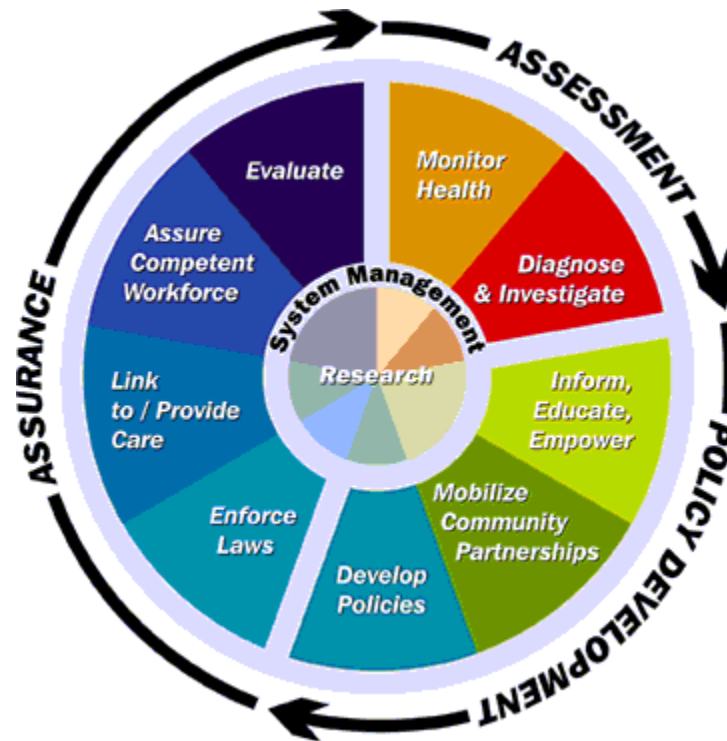


Figure 1: This picture is reprinted from The Public Health Functions Project that was coordinated by the Office of Disease Prevention and Health Promotion, Office of Public Health Science, Office of the Secretary, U.S. Department of Health and Human and CDC's "National Strategy to Revitalize Environmental Public Health Services

National Goals Supported

ASSESSMENT

- 1. Monitor environmental and health status**
- 2. Diagnose and Investigate**

This project indirectly addresses these two goals by participating with the Florida Department of Health Epidemiology Department in identifying recreational water-borne diseases associated with permitted swimming pools and bathing places. Through keeping an "ear to the community," early signs of an outbreak can be identified and an investigation pursued.

POLICY DEVELOPMENT

- 3. Inform, Educate and Empower**
- 4. Mobilize Community Partnerships**
- 5. Develop Policies**

This project directly addresses these three goals. Numerous methods are explored to inform, educate and empower those who own/operate and utilize public swimming pools and bathing places regarding safe swimming practices. Outreach is made to mobilize all partners and to involve them in the activity of maintaining safe swimming venues. Policies are developed to allow a more consistent communication of inspection results and required corrective action to be taken.

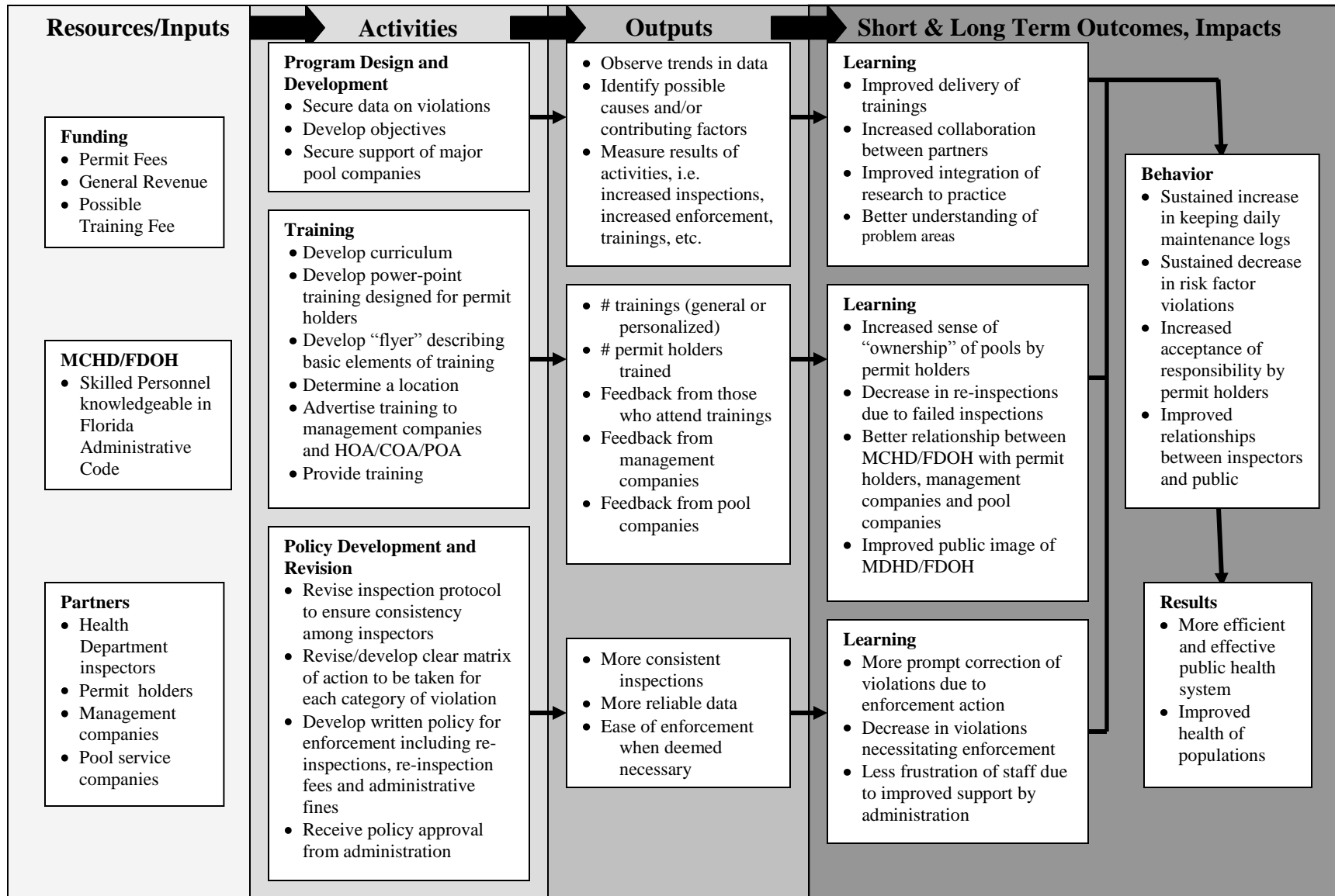
ASSURANCE

- 6. Enforce Laws**
- 7. Link to/Provide Care**
- 8. Assure competent Workforce**
- 9. Evaluate**

This project directly addresses all except goal number seven. Improvement to the legal enforcement within the county is implemented. Ongoing more extensive education regarding pool operation to health department inspectors assures a more competent and respected workforce. Consistent evaluation of data gathered through inspections allows trends to be identified and programs to be restructured

Project Logic Model:

Goal: To improve the nation’s public health system by strengthening the leadership capacity of public health leaders



PROJECT OBJECTIVES/DESCRIPTION/DELIVERABLES:

Program Goal: To reduce the risk of recreational water-borne disease transmission due to failure to maintain proper chemical levels in permitted facilities (i.e. pools, spas, wading pools, interactive water features)

Health Problem: The frequency of improper chemical levels in permitted facilities which increases the risk of transmitting water-borne diseases is too high

Outcome Objective: By the end of permit year, 2010-2011, there should be a decrease in the frequency of water quality violations by 10% of 2008-2009 baselines

Determinant: Failure to maintain proper chemical levels puts the population which utilizes the facility at risk for transmission of disease through exposure to potentially contaminated water

Impact Objective: By July 1, 2010, there will be a 10% increase of maintenance of daily logs by permitted facilities based on 2008-2009 baselines with appropriate follow-up action if levels are found to be out of compliance (i.e. closing facility, correcting chemical levels and/or contacting maintenance company)

Contributing Factors:

1. Failure to monitor chemical levels daily is a violation and allows improper chemical levels to go unnoticed and uncorrected;
2. Lack of public awareness on the importance, effectiveness and health benefits of maintaining proper chemical levels and the specifics of the law governing their facility the law or the importance of compliance
3. Lack of “designated individual” to monitor chemical levels
4. Lack of enforcement by MCHD/FDOH

Process Objectives: By January 1, 2010, 30% of management companies and /or permit holders will have representatives attend a training explaining the importance of maintaining daily maintenance logs at their facilities

METHODOLOGY:

Events and Activities

1. Schedule the meeting, arrange a location and send out notices to all pool companies and management companies. Encourage management companies to inform their COA’s and HOA’s. Plan to have this meeting before going to St. Louis for the next training in October. (Secure location and send announcements by September 11)
2. Secure as much data as possible about “proven” recreational waterborne diseases. (by Sep 25)
3. Secure data on numbers of times pools have been closed due to violations. Create graphs for slide show with this information. (By Sep 25)

4. Print at least one log folder which will have the basic information about testing requirements and chemical standards and what to do if those standards are not met (i.e. when to close the pool and when to re-open it). (By Sep 25)
5. Create a slide show with information about the revision of the Florida Administrative Code, 64E-9 but allowing some emphasis on the need to do daily testing. (By October 9th)
6. Create a questionnaire to be given out at the meeting which will ask participants why they think the log is not kept daily (cost) and asking if they see any benefit from keeping the log. (By October 9th)
7. After the meeting, evaluate the responses on the questionnaire, bring feedback to St Louis meeting and move forward from there. (By October 23)

RESULTS:

1. On November 17, 2009 a public presentation was given at a local library auditorium for representatives of the management companies, pool construction and/or maintenance companies and members of the public. This was attended by approximately 30 persons with representative from each invited group. Those who attended completed surveys which reflected an appreciation of the presentation but not necessarily an understanding of the objective. Several agreed to participate in future meetings to address the problem.
2. Prior to the event, a radio interview and newspaper article highlighting the presentation was completed, allowing the core message of the presentation to be distributed to those who were unable to attend the public presentation.
3. Where possible, copies of the PowerPoint handouts from the presentation were distributed to all permitted facilities at the next inspection.
4. A standard “warning letter” has been composed and is now being utilized when repeat violations are observed. Follow-up legal guidelines are being reviewed and implemented.

CONCLUSIONS:

Results of the impact of the dissemination of information to those who attended the public presentation or who were exposed to the newspaper article or radio program are pending. To date, very little change has been observed. The limited attendance at the public presentation can be attributed to a combination of basic lack of interest in the subject, conflicting holiday schedules and possibly some lack of awareness of the presentation itself. It is recognized that there may be no reason for compliance at this point due, in part, to a general disbelief that there is any real health threat and, in part, to a lack of regulatory enforcement. However, it is believed that regulation alone will never accomplish compliance if no one acknowledges and accepts “ownership” of the problem. Future work on this project will require further investigation of how to encourage involvement by all stakeholders. One suggestion to reach a broader audience and to improve partnering is to prepare a series of brief articles suitable for copying to community newsletters and to post these on the Martin County Health Department website as it is developed. Another suggestion to get “buy-in” is to develop a rating system that could also be posted on the website which would require compliance in order to achieve the highest rating.

LEADERSHIP DEVELOPMENT OPPORTUNITIES:

Marie Angeline DeWald

Although I had been a supervisor in previous jobs, I am not currently working in a supervisory position. Over several years, I observed significant positive changes in my director's supervisory style, especially after he graduated from EPHLI, and realized I could benefit from increasing my understanding of current leadership models. After I expressed a desire to develop my leadership skills in conjunction with my work towards a MPH, my director suggested I apply to the Environmental Public Health Leadership Institute.

Upon my completion of a program at the University of Florida to earn a certificate in Public Health, I applied and was accepted to EPHLI Cohort V. At the initial meeting in Atlanta, I began to wonder if I had taken on a task bigger than I could manage. The others in my group were directors and already had experience with the Myers-Briggs and Skillscope. For me, those tools were like a new set of glasses through which to view not only myself and my co-workers but clients and family as well. Over the year, I have seen my relationships change for the better as I began to understand and respect different personalities and work styles. I found myself reviewing past experiences when I was a supervisor and realized how much better I could have been if I had known what I was learning in EPHLI.

The Institute curriculum is definitely on par with graduate-level courses. A major difference that I experienced was that in EPHLI there were mentors, team members and staff that were available to "keep you on track." Only at the conclusion did I understand that each assignment was to become a segment of my final paper. Another difference was that this program is more concentrated on educating a new method of approaching problems through different ways of thinking about the problem, rather than being a course that requires memorization of facts and figures.

I found the consultants much more accessible for questions than my professors had been. Michael Goodman worked with each member of my mentoring team to assist us in not only completing each assignment but in developing the thought processes behind the assignments. This team structure provides an immeasurable asset as you work on your Leadership Project. Each team member provides feedback to the other team members as you develop your project. I learned a great deal about my project topic and myself through the action learning framework. Friendships and networking opportunities grew throughout the year.

EPHLI also allows you to have a personal coach to help you with your Individual Development Plan. For me, the input from my coach, Dr. Donna Dinkin, proved to be very rewarding. She shared her time generously with me and pointed out characteristics which were revealed in my Skillscope that I had overlooked. Toward the end of the program, she continued to guide me in developing the next set of IDP goals.

I do not know what the future holds but I am confident that the material learned in EPHLI will serve me well. I feel very privileged to have been a part of EPHLI Cohort V. I look forward to using this experience to continue my development as a leader in public health.

ABOUT THE EPHLI FELLOW(s)

Marie Angeline DeWald works as an Environmental Specialist II with the Florida Department of Health at the Martin County Health Department in Stuart, Florida. She worked for several years in the onsite sewage treatment and disposal systems (ostds) program and continues to maintain her certification in that area. Currently she works in the facilities program doing inspections in the areas of food hygiene, pools, group care facilities, tanning facilities and body piercing facilities. She has completed numerous emergency preparedness trainings and, until recently, served as a member of an environmental health emergency response team.

Although not a supervisor, as a “senior” member of the staff, Ms. DeWald is often called upon to train new staff or to assist “less seasoned” co-workers. She is a “born” teacher. Members of the public with whom she has worked often comment on her thorough knowledge of the areas of interest and her ability to communicate or “teach” them in a way that they find unassuming and extremely helpful. Public speaking seems to come easy to her.

Ms. DeWald holds a BS degree from the College of Charleston in Charleston, South Carolina. She has attained certification as a registered sanitarian (RS) through the Florida Environmental Health Association (FEHA) and is working towards a MPH at the University of Florida. She served as the secretary for the local FEHA chapter for several years. She also volunteers her time to the United Way Fundraising Steering Committee as a representative for the Florida State Employee Charitable Campaign.

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