

Legislative Challenges to the Control of Emerging Public Health Pests and Zoonotic Diseases in North Carolina

2009-2010

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EXECUTIVE SUMMARY

North Carolina faces a steady rise in the populations of public health pests and diseases. The situation is compounded by the fact that North Carolina public health laws, Chapter 130A, do not provide adequate statutes that enable effective control regulations for public health pests.

The rise in the population of bed bugs, the cases of Lyme disease and the threat posed by emerging diseases such as Dengue and Chikungunya call for a proactive stance in managing public health pests.

This project is designed to create sufficient awareness on the part of the stakeholders, public health leaders and legislators through specific action plans. These include engagement, education, training, cooperation and capacity building to draw sufficient support for the changes needed to current public health laws in support of the goal for enhanced public health for all residents of North Carolina.

The methodology involves engaging the key stakeholders in public health pest control. These include local environmental health agencies, housing authorities, hotel associations, professional exterminators, landlords and property managers. The stakeholders will be involved in the design, implementation and evaluation phases of the project. That way, effective legislative changes will be obtained.

Stakeholders are motivated by the desire to see changes or amendment to current legislation that offer adequate protections.

The key variables in this debate include the strength of statutes and ordinances, the level of awareness of the problem posed by public health pests and diseases, the cost of remediation associated with pest infestations, the health effects of zoonotic diseases and the inadequacy of control responses.

Clearly gaps do exist between the demand for control responses and the strength of the existing provisions under law. Also the severity of pest infestations is not matched by enforceable regulations at all levels of government. The cost of remediation for pest infestations is going through the roof for all parties.

These gaps need to be addressed through an integrated and sustainable approach to public health pest management.

The current state of public health pests and related diseases in North Carolina calls for the collective engagement of all stakeholders, incorporating key concerns and addressing existing gaps between the key variables. This approach serves to bring about the changes in current laws.

Problem Statement

Faced with a steady rise of emerging public health pests and vector borne diseases in North Carolina (NC), there is insufficient Environmental Public Health statutes, ordinances and local programs in support of our goal for enhanced public health.

INTRODUCTION/BACKGROUND

An important aspect of this project is to create sufficient awareness, on the part of the stakeholders, legislators and public health leaders, of the problem of emerging public health pests and vector borne diseases in North Carolina, so that they may play a pivotal role in crafting new legislation or amendments to current legislation to strengthen efforts aimed at enforcing control regulations. Regulations, as defined under the public health laws of North Carolina (Ch 130A) do not provide adequate protections to environmental health professionals and local agencies to be able to enforce effective control regulations or be proactive in the control of potential or active public health epidemics. Public health pests such as the bed bug that were deemed eradicated are making a resurgence, reaching near epidemic proportions but cannot be effectively controlled on account of the lack of specific regulations in statutes and ordinances. Bed bugs pose a serious emerging threat to unsuspecting dwellers of hotels, motels, public facilities and group camps with some states and municipalities in the nation seeing near epidemic proportions of the pest.

Faced with a growing invasion of bedbugs, Ohio has asked the federal government for permission to turn them back with a pesticide (Propoxur) that is not labeled for use in homes. "We are in dire straits, and we need help," said Matt Beal, assistant chief at the Ohio Department of Agriculture. The department asked the U.S. Environmental Protection Agency on Oct.23 for an emergency exemption to allow the use of Propoxur in residences. The insecticide is used in commercial buildings, on crops and in flea and tick collars for pets, Beal said.

New York City reported a four-fold increase in reported cases of bed bug infestations from 2007-2008, The re-emergence of the pest is causing near panic situations in certain quarters with the commonly held belief, albeit misleading, that the pest is impossible to get rid of, once an infestation takes hold. The severity of bed bug infestations in some major US cities is leading public health leaders and The United States Environmental Protection Agency (USEPA) to set up panels tasked with instituting control strategies and further proposing legislation to address control regulations for this public health pest that is falling between the cracks and gray areas in most state statutes and county ordinances. San Francisco, New York, Chicago, and Cleveland are among a host of cities working to enact legislation targeting the bed bug.

The United States Environmental Protection Agency (USEPA) in response to the significant levels of bed bug infestations across the United States supported a bed bug summit held in Arlington, Virginia, April 14 & 15, 2009. The summit recommended the following:

1. Role of Government

Form interagency federal taskforce (EPA, CDC, HHS, etc.)
Involve all levels of government: collaborate, coordinate, cooperate
Create national foundation
EPA bed bug specific website
Legislative support: regulations for addressing recycled/refurbished mattresses; dealing with infested items
Legislation: bed bug certification for pest control operators
Provide funding: research, education, training
Provide subsidies for bed bug control: include underserved communities; utilize fine money as a source of funding
State regulations to clarify roles and responsibilities: tenants/owners/managers
Regulatory changes to streamline registration process; incentives for new products; encourage specialized uses; reevaluation of risk assessments to include risks of misuse
Recognize bed bugs as public health pest (classify as epidemic level)
Update efficacy guidelines for better testing procedures
Support IPM approach
Educate government officials and elected officials
Develop a response flow chart
Monitor and enforce products sold over internet: false claims, unregistered products
ASPCRO/other stakeholders establish national model legislation on bed bug management
Hold a Second Bed Bug Summit

Develop targeted bed bug education curriculum (i.e., children in schools, nursing homes, health care, hotel industry, medical professionals, dorms, home care providers, first responders)
Develop and disseminate information: identification, biology, prevention, safe treatment options, do's and don'ts, dispel myths, sanitary guidelines, best practices
Internet-based outreach/clearinghouse (i.e., factsheets, podcasts, key points in dealing with bed bugs)
Public service announcements: TV, web, radio, billboard, hotlines (multiple languages)
Collaborate at all levels (industry, associations, federal, state, local, etc.)
Multiagency website (EPA, GSA, CDC, HUD, HHS, DOT, FAA)
Mini bed bug summits in EPA regions
IPM training module

The National Pest Management Association, the trade group of more than 5,000 companies, reports a 71 percent increase in bedbug calls between 2000 and 2005. Entomologists say their phones are ringing off the hook with pleas for guidance. Stephen Kells, an entomologist from the University of Minnesota, estimates that as many as 1 in 6,000 single-family homes are now infested.

In the past two decades, there has been an increase in the number of reported bed bug infestations worldwide. In recent years, the San Francisco Department of Public Health has received a growing number of bed bug complaints, mostly from occupants and owners of residential hotels, youth hostels, and shelters. In a proactive move to stem the tide, the city of San Francisco adopted a comprehensive bed bug ordinance under the San Francisco Health Code- **Pursuant to Article 11, Sec. 581 of the San Francisco Health Code.**

Article 11 Sec. 581(a) states that no person shall have upon any premises or real property owned, occupied or controlled by him or her, or it any public nuisance. Sec. 581(b) (8) declares the following to be a public health nuisance:

Any noxious insect harborage or infestation including, but not limited to cockroaches, bed bugs, fleas, scabies, lice, spiders or other arachnids, houseflies, wasps and mosquitoes, except for harborages for honey-producing bees, of the genus *Apis* regulated by the California Food and Agriculture Code, Section 2900 et seq. which are not other wise determined to be a nuisance under state law.

The City of San Francisco has gone further to adopt The Director's Rules and Regulations that establish a bed bug control protocol and promulgated to carry out the intent of Article 11 of the San Francisco Health Code. Under Section 581 any person or their agent who violates any section of the Article may be subject to an administrative penalty for each violation.

In the City of Toronto, Canada, a sharp rise in bed bug infestations and a sharp increase in calls regarding bed bugs, has led Toronto Public Health to respond in a number of ways including legislation to ensure that if it becomes necessary, Toronto Public Health can issue a Health Protection Order, under the "Health Protection and Promotion Act", to ensure clean-up and treatment, is completed.

Both pieces of legislation cited above represent model ordinances, that state county and municipal health agencies need to embrace in the effort to stem the tide of bed bug infestations in the US.

Emerging vector borne diseases such as Chikungunya and Dengue are creeping closer to our shores with reported cases of Dengue in 2009 in Florida. The recent Chikungunya epidemic in the French island of Reunion and the surrounding region point to the potential threat posed by emerging vector borne diseases, Other diseases that lead to chronic and debilitating conditions such as Lyme disease are now being recognized for the threats they pose.

Recent outbreaks in Malaysia and Thailand as documented by the CDC and the WHO provide enough reasons for concern about this disease reaching our shores (WHO-GAR. 2009).

In the event of an epidemic of a zoonotic disease such as Chikungunya or Dengue in NC, it remains uncertain that we have adequate legal protections, short of a declaration of an emergency by the state Health Director followed by aerial spraying for vector control, to enforce anything.

The Centers for Disease Control (CDC) has, under its mandate, set up a Dengue Branch on account of the importance of the disease. The mission of the Dengue Branch is to: 1) develop and maintain national and international surveillance for [dengue and dengue hemorrhagic fever](#); 2) provide laboratory reference and diagnostic services to local, state, national, and international health agencies; 3) provide epidemic aid and investigate dengue epidemics; 4) conduct field and laboratory research on the biology, behavior, and control of *Aedes aegypti* and other mosquito vectors of dengue; 5) conduct research on and provide consultation and assistance to local, state, national, and international health agencies on improved methods for surveillance, prevention, and control of epidemic dengue; 6) provide training in laboratory and clinical diagnosis, and on surveillance, prevention, and control of dengue; 7) develop, implement, and evaluate new community-based intervention strategies for prevention of epidemic dengue; 8) function as a WHO Collaborating Center for Reference and Research on Dengue and Dengue Hemorrhagic Fever. As of 28 March, 2008, the Brazilian health authorities have reported a national total of 120 570 cases of dengue including 647 Dengue Haemorrhagic Fever (DHF) cases, with 48 deaths.(WHO-GAR 2009). Also, recent reports of Dengue in Florida, calls for heightened awareness of the health effects of the disease.

After identifying multiple cases of dengue fever acquired in Key West, the Monroe County Health Department, Florida Department of Health, and Centers for Disease Control and Prevention collaborated on an investigation in order to determine the extent of the outbreak and identify risk factors for infection in Key West residents. Team members interviewed and collected blood samples from 240 residents in Old Town, Key West.

As of November 13, 2009, no new case had been reported with an onset of illness later than October 19, 2009. At that time, it was determined that the outbreak was evident at least during the first part of July, and that a total 20 persons were identified with dengue fever this summer in

Key West. All became infected locally and have fully recovered. 8 of the cases became known as a result of the investigation, 4 were identified after a review of medical records by the investigators, 1 was diagnosed by a New York physician, and 7 were diagnosed by the Key West medical community.

Chikungunya fever is a viral disease [transmitted](#) to humans by the bite of infected mosquitoes. Chikungunya virus is a member of the genus *Alphavirus*, in the family *Togaviridae*. Chikungunya fever is diagnosed based on [symptoms](#), physical findings (e.g., joint swelling), [laboratory testing](#), and the possibility of exposure to infected mosquitoes. There is no specific treatment for Chikungunya fever; care is based on symptoms. Chikungunya infection is not usually fatal. Steps to [prevent](#) infection with Chikungunya virus include use of insect repellent, protective clothing, and staying in areas with screens. Chikungunya virus was first isolated from the blood of a febrile patient in Tanzania in 1953, and has since been cited as the cause of numerous human epidemics in many areas of Africa and Asia and most recently in limited areas of Europe. Countries that have experienced recent outbreaks of Chikungunya fever include India, Indonesia, Malaysia, Singapore, and Sri Lanka in 2008. As of September, 29, 2009, a large outbreak of Chikungunya fever has affected Thailand, particularly the southern region including some tourist destinations, such as Phuket. According to the Ministry of Public Health in Thailand, over 42,300 cases have been documented this year in 50 provinces. Reports from Thailand show that Chikungunya virus continues to circulate throughout the country. In Italy, as of 13 September 2007, 254 cases of potential Chikungunya virus infection were identified in Emilia Romagna Region as a result of ongoing active surveillance activities. Chikungunya virus infection was confirmed by laboratory tests in samples obtained from 78 of the notified potential cases. Among confirmed cases, the most recent date of onset was on 4 September 2007. (www.euro.who.int/surveillance/outbreaks/20070904).

David Murrell, lecturer in ecology at University College London, said: "Since 1940, over 300 new diseases have been identified, 60 per cent of which crossed to humans from animals and 70 per cent of these came from contact with wildlife. I would expect the emergence of new diseases from contact with animals to continue in this century." Murrell also believes the emergence and re-emergence of diseases will continue into the next century at least. Habitat loss shows little signs of slowing, he adds, so we can expect to see more contact between humans and wild animals or animals kept in farms and households.

Murrell adds globalization, to the pressures behind disease emergence, and says it is here to stay. "Globalization is a big concern regarding the emergence of novel diseases," he explains. Before the world became so interconnected, deadly and newly emerged diseases were not capable of spreading widely. "Now it is very possible that they will spread across countries and continents within days, thereby sustaining the outbreak."

Lyme disease has been recognized by the Centers for Disease Control (CDC) and the Lyme Disease Association (LDA), (www.LymeDiseaseAssociation.org) and reported in the Wall Street Journal (WSJ) and LDA publications as a debilitating disease of humans that is spread by the Black-legged or Deer Tick (*Ixodes spp.*). The LDA describes Lyme disease as tick borne disease that calls for a proactive approach dedicated to Lyme disease education, prevention, and raising research dollars. To coordinate the effort against Lyme disease, the LDA became affiliated with

several other organizations, including: Time for Lyme, Inc. (CT), California Lyme Disease Association, Inc. (CA) among others.

States that have sponsored and adopted measures to deal with the emerging threat of Lyme disease include New Jersey, Massachusetts, Connecticut, California, Pennsylvania and New York.

The foregoing reports underscore the need for a proactive approach to enacting or making amendments to existing legislation that would ensure that statutes and ordinances provide for adequate and timely control responses and regulations are enacted ahead of a potential epidemic.

A review of about twenty North Carolina local county ordinances reveals several gray areas in county regulations directed at the control of public health pests. Most ordinances only address the subject of vector infestations, leaving non vectors and other public health pests, causing a range of health effects, to fall under the radar.

Mecklenburg County, one of the largest counties in NC, cites the following provisions for mosquito control in the County Health Ordinance Rules, section 3 (General Provisions-1999):

All premises within Mecklenburg County shall be maintained in such a manner as to prevent the breeding of mosquitoes on the premises. Artificial containers, ditches, streams, flooded areas, and all other such sources of standing water or other liquid where mosquitoes are breeding, must be removed, drained, treated, altered, maintained, or otherwise eliminated by the person occupying the premises or, in the absence of an occupant, by the owner, in such a manner as to prevent the breeding of mosquitoes. Where there is evidence of mosquito breeding, effective methods of eliminating and treating mosquito breeding sources shall be instigated by the person occupying the premises, or in the absence of an occupant, by the owner, within 48 hours after discovering or being informed of the evidence of mosquito breeding on the premises.

No other provisions for vector or non vector public health pests are stipulated in this section of the ordinance rules. Under the current environment of renewed public health threats, amendments to this rule to include bed bugs, emerging and other nuisance pests would go a long way towards addressing the health effects and control regulations of public health pests other than mosquitoes.

National Goals Supported by project

This project supports two of the National Public Health Performance Standards (NPHPS) goals established by the CDC.

- Provide performance standards for public health systems and encouraging their widespread use;
- Encourage and leverage national, state, and local partnerships to build a stronger foundation for public health preparedness

North Carolina Goals Supported

Supports the mission of the NC Department of Environment and Natural Resources (NCDENR) to conserve and protect North Carolina's natural resources and to maintain an environment of high quality by providing valuable services that consistently support and benefit the health and economic well-being of the citizens of our state.

North Carolina School Children's Health Act 2006

The school children's Health Act passed in the North Carolina state legislature on 6/29/06 and it requires all public schools in North Carolina to notify parents, guardians and staff of nonscheduled and nonexempt pesticide applications on school property as of October 1, 2006 and to implement Integrated Pest Management (IPM) programs by October 1, 2011.

Key Stakeholders

- a. County/Municipal Environmental Health Agencies**
- b. Property developers and managers**
- c. Housing Authorities and Housing Advocacy groups**
- d. Boards of Education/School Districts**
- e. Tenants and Landlords**
- f. County and City Managers**
- g. Homeowners**
- h. North Carolina Justice Center/Legal Aid and Community Action groups**
- i. Professional Exterminators**
- j. North Carolina Restaurant and Lodging Association**
- k. State Epidemiologist and State/local Institutions (e.g. Groups Homes, Mental Health facilities)**

Table 1.0 Summary of Stakeholder Concerns and Roles

Key Stakeholders	Assumptions	Concerns	Collaborative Role
EPH Agencies	Will lead Change; important partner	Legislative support, Funding, Public Health, Safety of citizens	Design of project, Education and Training of Citizens and Pest Control Operators
Property Managers	Challenging stakeholder may resist change	Regulatory, Remediation Cost, Legal	Design of project, Survey of stakeholders
Housing Authorities/Advocacy Groups	May be slow at collaborating, some challenge	Funding, Legislative support, Safety, Client Health	Design of project, Training of staff, Craft Legislation
Boards of Education	Proactive change agents	Wellness, School IPM	Design, Training, Development of educational material
Tenants	May not be forthcoming	Remediation Cost, Legal support	Survey of project activities, Legislative support, creating awareness
Landlords	Challenging stakeholder, may resist change if concerns not addressed	Litigation, Remediation Cost, Legal support	Education, Survey, Legislation
County/City Mgrs	May lead change	Budget, Legal support; Legislative support, Safety	Legislative support, Training of staff
Homeowners	Seek self interest	Remediation Cost, Safety, Hygiene	Design of project, Creating awareness
North Carolina Justice Center	Proactive to change; important partner	Legal, Legislative support, Safety	Design, Survey, Education, Training
Professional Exterminators	May resist change if concerns not addressed	Remediation Cost, Public Awareness	Training of staff, Design of project, Education & training of staff

Key Variables

- **Quality of statutes and ordinances**
- **Funding of Environmental public health programs**
- **Increasing public health pest population**
- **The effects of public health pests**
- **Effectiveness of the local EH Programs on the ground ****
- **Public awareness and Education**
- **Costs of remediation in the event of pest infestation**
- **Stakeholder collaboration ****

**** Linkages exist through current funding and the level of funding required in sustaining effective control programs.**

Table 2.0 Cost Benefit Analysis of Change-No Change

	Changing	Not Changing
Benefits	<ol style="list-style-type: none"> 1. Enact Legislation in Support of Enforcing Regulations at state and local level 2. Enabling Environment for enhanced capacity and Public Health Pest Control at local level and better enforcement 3. Greater awareness of public health pest problem 	<ol style="list-style-type: none"> 1. Staus quo stays in place at all levels 2. Some stakeholders may benefit from current status as they do nothing 3. Local EH programs continue to do business as usual 4. Authority of PH leaders not challenged. Complacency may set in.
Costs	<ol style="list-style-type: none"> 1. Increased resources for remediation of public health pest infestations 2. Some stakeholders will not want change on account of what they see as the adverse effect on returns to investments 3. Changes necessary to bring about the support for new legislation from stakeholders and state legislators 4. Enhanced public health capacity creates new demands 	<ol style="list-style-type: none"> 1. Difficulty in enforcing regulations 2. Local/County EH agencies not empowered to implement controls 3. Decreased effort on the part of state agencies 4. Increase in incidences of public health pest infestations and vector borne diseases 5. Strain on local EH program budgets due to rising operational expenses

Table 2.0 Cost Benefit Analysis of Change-NO Change

The graph on Change Over time reveals gaps that exist between the effects of public health pests that register a rising trend and the control responses that show a declining trend. The enforceable actions also follow a similar downward trend that is not keeping pace with the rising pest populations and the threats posed by the increases. The inadequacy of both the control responses and enforceable actions is largely due to the low level of resources being allocated to public health pest management. Training for building capacity in the regulatory agencies is at the lowest level since the early eighties.

Remediation costs for pest infestations are steadily rising on account of pesticide resistance of emerging pests and the level of effort involved in pest extermination. The issue of the strength of regulatory authority of Public Health agencies also impacts the effectiveness of control regulations on the ground, making pest infestations harder to eradicate. The longer the wait on extermination efforts, the more the problem snowballs.

Shifting the Burden

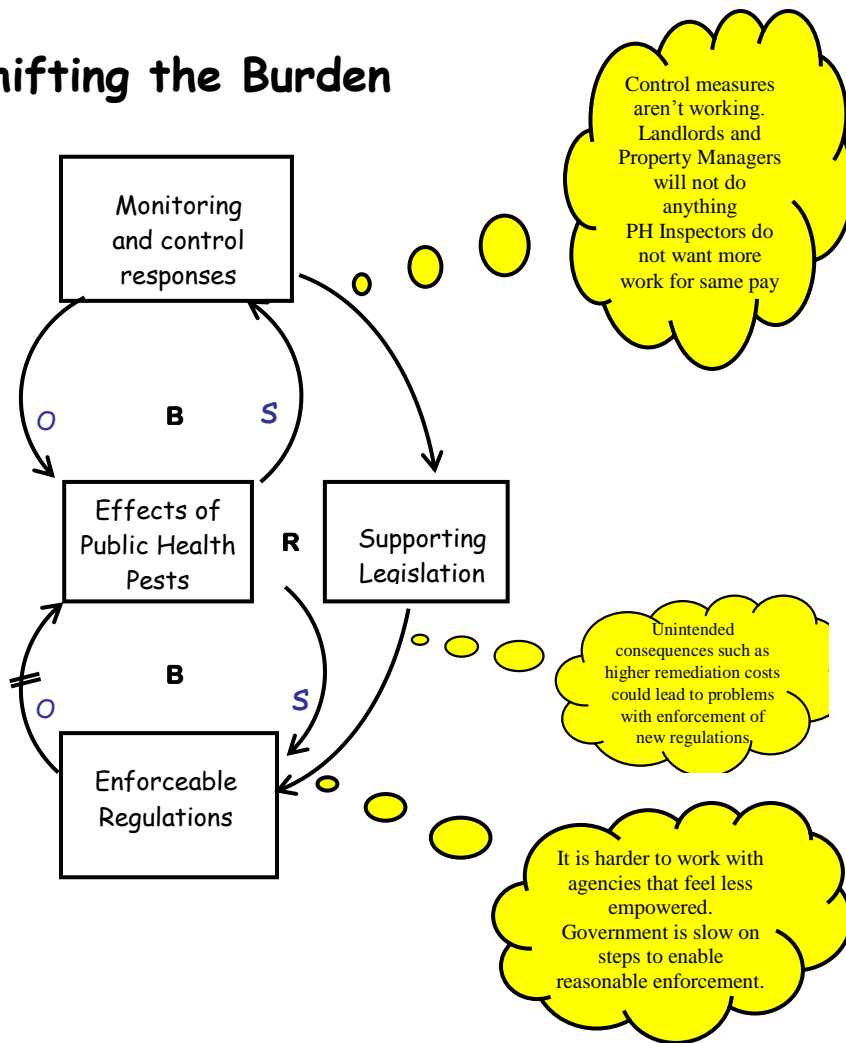
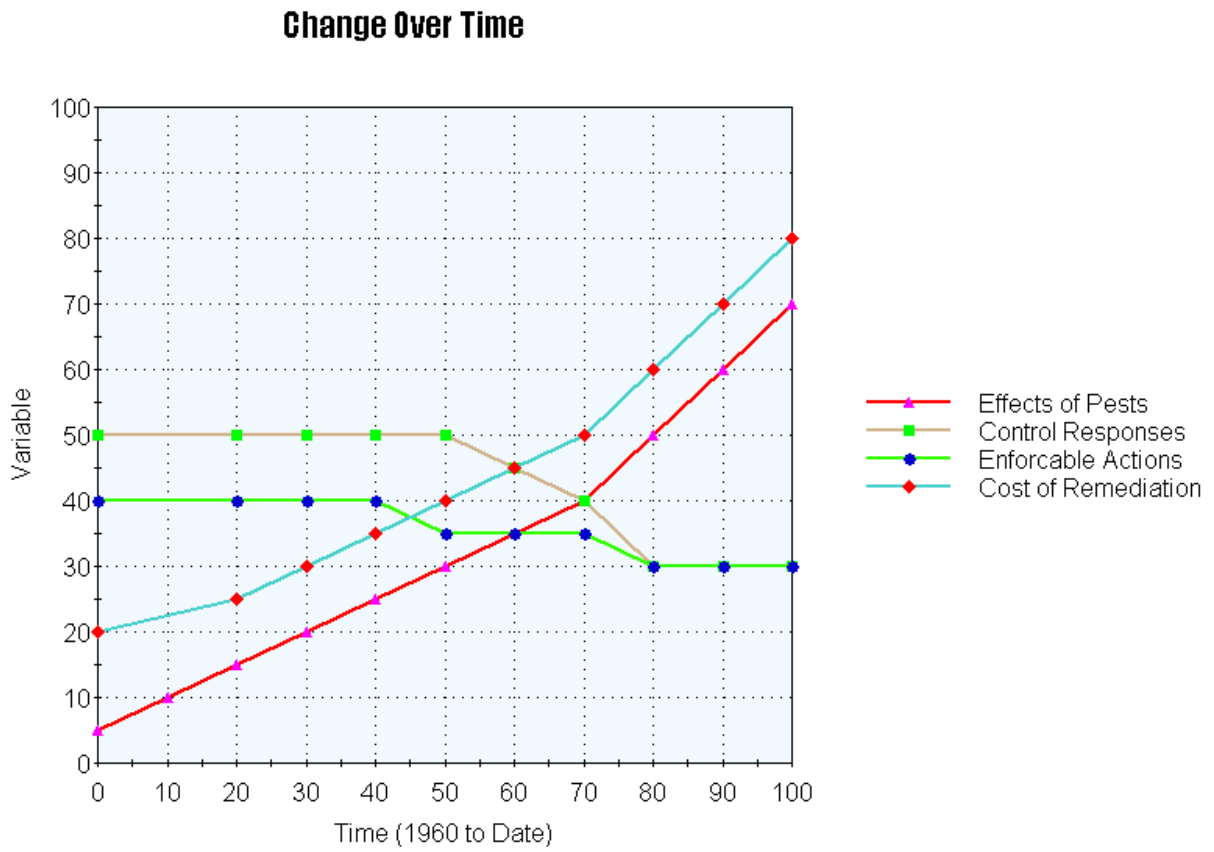


Fig. 2.0: Change Over Time



PROJECT OBJECTIVES/METHODOLOGY AND OUTCOMES

Program Goal

Improved health status of North Carolina population and better health outcomes

Outcome Objective

By 2011, propose amendments to North Carolina General Statutes Chapter 130A: Public Health.

Determinant

Success will depend on sufficient public awareness of the effects of public health pests and zoonotic diseases, by the residents of North Carolina.

Impact Objective

Enhance collaboration between the local environmental health agencies and the key stakeholders.

Contributing Factors

1. The low level of awareness of public health pests and their effects on human health.
2. Local environmental health agencies believe that they are not sufficiently empowered.
3. Low level of funding for local environmental health agencies.

Process Objectives

By August, 2010, training sessions will be conducted and review panel Sessions/evaluation sessions undertaken to solicit legislative proposals.

By December, 2010, Stakeholder proposals will be reviewed by team panels and proposals adopted to sensitize legislators.

By July 2011, propose amendments to North Carolina General Statutes Chapter 130A: Public Health.

Event: Public awareness campaign employing diverse media tools.

Activities: Develop online tools for education.

Training Sessions conducted; evaluation sessions and joint legislative proposals

2. By December, 2010, collaborative projects with partners will be launched.

Event: Training and education.

Activities: Develop Online Resources with NCSU Extension Entomology, Public Health Pest Management & NCMVCA.

Review Team Questionnaires and gauge extent of legislative support.

3. By July 2011, propose amendments to North Carolina General Statutes Chapter 130A: Public Health. July 2011.

Event: Review of existing legislation and sensitize NC legislature.

Activities: Review specific provisions under Ch 130A.

Address the effects of non vectors.

Seek to empower Public Health Agencies to enforce control regulations on nuisance pests, vectors and non vector pests such as Bed Bugs.

Propose model legislation or amendments to current legislation.

CONCLUSIONS

The need for model or amended legislation is prompted by the desire on the part of stakeholders and collaborators to see specific legislation to allow concrete and enforceable statutes and ordinances in the area of public health pest management. What is currently on the books, in the form of public health law, as stipulated under Chapter 130A of the NC Public Health Act, targets vectors and is deemed inadequate to enable sufficient enforcement of regulations and control measures by public health pest control professionals seeking to control severe pest infestations. In the event of a statewide epidemic of a vector borne disease or a non-vector public health pest that can render human dwellings uninhabitable or of substandard sanitation, it is conceivable that the stipulations under Chapter 130A may not suffice to provide expedient remediation at both the state and county levels.

In the field of Environmental Public Health Pest Management, proven interventions often cannot be implemented and therefore do not always take hold on account of the absence of specific legislation that empowers public health regulators to enforce statutes and ordinances under Chapter 130A of the NC Public Health Laws in the effort to address the rising tide of public health pests and vector borne diseases in the state of North Carolina.

It is important that the State of North Carolina Division of Environmental Health in collaboration with all the key stakeholders with environmental health concerns work to propose new legislation or amendments to current legislation, to achieve the goal of reducing the incidences of public health pest infestations and vector borne diseases.

The case for change should be made in tandem with educational and public awareness campaigns on public health pests and diseases in order to muster adequate support, as this will bring about changes in current legislation, greater awareness of public health pest problems and effective control programs. The benefits of change far outweigh the attendant costs of not changing the status quo.

Not changing the status quo is not an option as this will add to the current difficulty in enforcing public health laws and also lead to a strain on the meager resources currently employed in the fight against vector borne diseases and public health pests. The steady rise in reported cases of pest infestations, zoonotic diseases and the need for intervention will continue to dog environmental health agencies.

Public health leaders and stakeholders such as housing groups tend to believe that the current level of services offered are fairly effective and represent the best-case scenario at current funding levels. However, there's the need to challenge this viewpoint as program reviews are few and far between and not all proposed recommendations can be implemented on account of numerous constraints that include external pressures such as the lack of political will in support of change.

A key constraint in vector control is the definition of the term "Vector" in the state statutes and local ordinances and what constitutes a vector. The commonly held belief is that if a public health pest is not a vector, there's nothing one can legally do enforce the public health law. The question this stance raises is whether other pests that can trigger asthma and other allergic reactions should not be considered a threat to public health. Do we necessarily have to wait for a pest epidemic in North Carolina to consider enacting supporting new legislation or amendments to current state legislation? The need to be proactive and not reactive to public health pest problems and zoonotic diseases is imperative at this point.

LEADERSHIP DEVELOPMENT OPPORTUNITIES

Amadou M. Jallow

The EPHLI program offered me the opportunity for self discovery that enabled the fine tuning of the MBTI self assessment so one can better fit these traits into the Individual Development Plan (IDP) areas of focus. The EPHLI program also allowed for a better understanding of the diverse modern workplace environment, the challenges there-in, the need to remove self imposed artificial boundaries and looking further beyond these boundaries for answers to the daunting environmental public health challenges that we face today. The program essentially engenders creative thinking in participants on top of the diversity offered in approaches to problem solving. In the quest to seek changes to environmental health policy through legislation, this program has armed me with the tools to be proactive, not reactive, and not lose sight of the fact that legislation may bring about needed change or it may add to existing problems through unintended consequences. The program also enabled me to choose my allies, stakeholders and public health issues carefully as legislation frequently depends on relationships developed over time. Even when one does not have a strictly legislative agenda, taking the time to educate legislators with one-on-one meetings and taking part in state events help to set the groundwork for the future. Legislation is one of the most powerful advocacy tools available to the public health community in the effort to bring about change albeit that the educational learning curve in emerging public health issues is steep.

This program has enabled me to better understand the reality that even in the presence of proven approaches to solving environmental public health problems, the vehicle to carry these concepts forward may not be available in the absence of the proper legislative framework.

Challenging the status quo is easier said than done as it can easily put well-meaning Environmental Public Health Specialists in the line of fire. However it is an important asset when it comes to filling a leadership role in environmental public health.

The year-long session has offered invaluable skills gained from trainers and insights offered by national leaders in environmental public health, instructors, speakers and fellows.

ABOUT THE EPHLI FELLOW

Amadou M. Jallow currently works as a Senior Environmental Health Specialist with the North Carolina Division of Environmental Health, Public Health Pest Management (PHPM) Section. He is responsible for the Southeastern/Coastal Region of North Carolina and oversees vector control programs and vector borne diseases within the region. He takes particular interest in bed bugs and bed bug control and tracks the pest in North Carolina. Prior to joining the state agency, Amadou worked in agricultural development overseas in West Africa.

Amadou M. Jallow holds a Bachelor of Science degree in Animal Science and a Bachelor of Science Degree in Agronomy (Plant Science) from the California State Polytechnic University. He also holds a Diploma in Agricultural Technology from the Nova Scotia Agricultural College, Truro, NS, Canada.

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