

The Local Public Health Institute of Massachusetts
Progress Report
July 1, 2012 – June 30, 2013

Prepared by:
Hope Kenefick, MSW, PhD
Evaluator for the Local Public Health Institute of Massachusetts

Local Public Health Institute of Massachusetts
Progress Report
July 01, 2012 – June 30, 2013

Table of Contents

	Page:
Executive summary	3
Introduction	5
Methodology	5
Problem 1	5
Problem 2	7
Problem 3	9
Problem 4	10
Problem 5	11
Problem 6	12
Intermediate and longer-term outcomes	14
Conclusions and Next Steps	16
Appendix A: LPHI Logic Model	18
Appendix B: Competencies addressed by LPHI trainings	19

The Local Public Health Institute of Massachusetts

Progress Report

July 1, 2012 – June 30, 2013

Executive Summary

Introduction: Since January of 2010, the Boston University School of Public Health (BUSPH) has had the contract for and managed the Local Public Health Institute (LPHI) of Massachusetts. With support from the Massachusetts Department of Public Health, the LPHI staff work with the LPHI Advisory Committee to pursue the LPHI mission: *To provide and ensure a competent workforce by strengthening and sustaining the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth.* This report describes the LPHI's progress in addressing the problems and associated objectives identified on its logic model between July 1, 2012 through June 30, 2013. Below is a description of the LPHI evaluation methodology used to inform the progress report, as well as a summary of the major accomplishments of the LPHI in the 12-month timeframe and recommended next steps.

Methodology: The LPHI evaluator and LPHI management team devised several data collection and tracking mechanisms to measure progress toward LPHI objectives and desired outcomes, including: (1) standardized training evaluation forms in paper and web-based formats; (2) administrative tracking by the LPHI Program Manager; and (3) web-based tracking of on-line module utilization.

Accomplishments and Next Steps: It was a very productive 12 months with significant progress made toward all program objectives, including:

- The LPHI expanded its capacity for distance learning and added 14 new on-line modules during the reporting period covering Bathing Beaches, Body Art, Drinking Water, Emergency Preparedness at Home, Emergency Preparedness in MA, Food Protection, Hoarding, Housing, Nuisance Control, Public Health Law and Legal Issues in MA, Public Health Workforce Protection, Recreational Camps, Tanning Facilities, and Wastewater and Title 5
- The LPHI also ran a third iteration of the Foundations Course, offered Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2 in three locations across the Commonwealth, and held a new Integrated Pest Management course, a collaborative effort with the CDC. In all of these trainings, participants rated themselves as better prepared to perform learning objectives after training than before and nearly all trainees reported that the training content would be useful in their work. In the Foundations Course, only 14 of 30 participants showed improvement from their pre-test to post-test on the course quiz. Completion rates ranged from 66% to 81.1% with the highest level of attrition occurring in the two Legal Nuts and Bolts sessions.
- In all, 1,085 trainees received education in the LPHI's training sessions or by completing one or more on-line modules during the reporting period. Trainees represent all of the Public Health Emergency Preparedness Regions. Although the LPHI is reaching its intended target audience of local health directors/agents, public health nurses, sanitarians/inspectors, and BOH members/chairpersons, a large proportion of trainees were classified as having "other" positions (e.g., MDPH staff, health care personnel, students, other local health department staff, industry representatives). Within this final category, 150 private industry personnel completed one or more online modules. This interest from industry personnel demonstrates the relevance of LPHI training content in real life practice.

- The LPHI Fellows Program inducted 8 new fellows. Based on evaluation results, the program was very successful in meeting the program objective and in its marketing, application and selection criteria, and recognition event, which was attended by more than 100 people.
- The LPHI Advisory Committee met three times, including its March meeting with the LSAC. In January 2013, the existing Advisory Committee acknowledged that there is considerable overlap in their membership with LSAC. Recognizing that LSAC meets monthly, LPHI proposed to bring the advisory work to the local public health officials at LSAC. In March, LSAC agreed to act as the LPHI Advisory Committee moving forward. LPHI business will be part of the LSAC agenda approximately three times per year. LPHI will provide written monthly updates, attend other meetings if requested, and seek the formation of a sub-committee devoted to education and training. All 7 regions and 6 local public health associations are represented at LSAC. Additionally, John Felix (MA Department of Environmental Protection) and Steve Ward (Worcester) will be invited to join the LSAC Education sub-committee. LPHI will continue to collaborate with MDPH Bureaus, other training centers, and academic institutions through our existing quarterly meetings and projects.
- Collaborative planning with LPHI partners yielded the Emergency Risk Communications in Practice classroom training curriculum and the new management training series curriculum. The LPHI also extended support to several partners and underwrote five annual professional conferences.
- The number of registrations for trainings, utilization of the online modules, applicants for the Fellows Program, and attendance at the Fellows induction ceremony are all indicators that the LPHI marketing efforts were successful.
- Data were collected via training evaluations to supply the LPHI with an on-going assessment of training needs among LPHI users. The LPHI evaluation strategy also allowed for the tracking of progress toward LPHI objectives and the identification of next steps for the year ahead.

Recommended next steps:

The LPHI should continue to build on its successes in the coming year, including:

- Continuing to deliver and evaluate the blended and classroom sessions, as well as the online modules.
- Building on the success to date of the LPHI Fellows Program.
- Continuing collaborative planning with partners to deliver training and develop new offerings.
- Continuing to use of the communications and marketing plan and implement products to increase awareness of LPHI offerings and the Fellows Program.
- Continuing to evaluate LPHI progress toward objectives.

There are two recommended changes for next year.

- The first involves the poor results associated with the pre/post quiz in the Foundations Course. An incentive (i.e., a grade of 70 or better to pass the course) is recommended to help ensure participant investment in learning the Foundations Course content. Some modifications to quiz questions are also necessary to ensure better measurement of knowledge gains as a result of the course.
- Second, LPHI staff should explore the causes of attrition between registration and completion of trainings, particularly the Legal Nuts and Bolts sessions, to understand what can be done to increase trainee retention.

The Local Public Health Institute of Massachusetts

Progress Report

July 01, 2012 – June 30, 2013

Introduction: Since January of 2010, the Boston University School of Public Health (BUSPH) has held the contract for and managed the Local Public Health Institute (LPHI) of Massachusetts. With support from the Massachusetts Department of Public Health, the LPHI staff work with the LPHI Advisory Committee to pursue the LPHI mission: *To provide and ensure a competent workforce by strengthening and sustaining the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth.* The LPHI Advisory Committee identified six potential problems that pose barriers to achieving the LPHI mission, including resources of which the LPHI has not taken full advantage. An objective was established to address each of the identified problems and advance the LPHI toward its mission. This report is organized around the six problems and provides a report of the progress made between July 1, 2012 and June 30, 2013. A logic model was drafted to depict the relationship of the mission, problems, objectives, outputs and outcomes (See Appendix A). For information about any of the educational offerings or documents referenced in this report, contact Jennifer Tsoi, LPHI Project Manager at lphi@bu.edu or (617)638-4825.

Methodology: The LPHI evaluator and LPHI management team devised several data collection and tracking mechanisms to measure progress toward LPHI objectives and desired outcomes. Below are descriptions of those utilized to inform this report.

- **Standardized training evaluation forms:** All LPHI-supported trainings must include an evaluation component. Whenever possible, such evaluations include pre/post quiz questions to assess the extent to which students acquired knowledge as a result of training. The evaluations also assess the extent to which trainees feel better prepared to perform session learning objectives as a result of training and their satisfaction with several aspects of training, including the instructors, materials, interactivity, etc. Evaluations are self-administered with trainees either completing them on paper or using Survey Monkey.
- **Administrative tracking:** The project manager routinely tracks data related to the size and composition of the Advisory Committee and its meetings, the number and types of trainings and demographics of training participants, the number and types of collaborating partners, the number of trainings with a distance education component, and the status of the communications and marketing plan, including the number of newsletters and training calendars disseminated.
- **Online module evaluations:** Google Analytics is used to track unique and returning hits to the modules' webpage. Trainees who wish to obtain a certificate of completion and contact hours for use of the online modules may do so online as well.

Typically, quantitative analyses for the LPHI are conducted using SPSS and qualitative analyses are analyzed for common and divergent themes using qualitative thematic analysis. For more detail on any of the data sources described above or related evaluation documents, contact Hope Kenefick, the LPHI evaluator at hopewk@comcast.net.

Problem #1: A group of individuals that understands the needs of local public health and that represents various segments of the workforce and geographic areas of the Commonwealth is needed to

advise MDPH and others (e.g., DEP, MEMA) about how to most effectively achieve the LPHI mission. To address the problem, the Institute will accomplish the following objective: *To rebuild and convene a highly functioning Advisory Committee*. The figure below shows progress made toward the objective during the reporting period.

# of associations represented	6 public health associations are represented, including: MA Association of Health Boards, MA Health Officers Association, Western MA Public Health Association, MA Environmental Health Association, MA Public Health Association, MA Association of Public Health Nurses
# of regions represented	All emergency preparedness regions are represented on the LPHI Advisory Committee, including Regions 1, 2, 3, 4a, 4b, 4c , and 5
# of academic partners represented	5 academic partners are on the Committee: Harvard and Boston Universities and University of MA Amherst, UMass Medical School and UMass Lowell.
# of meetings	3 in person meetings of the LPHI Advisory Committee between October and January, including with the LSAC in March. Additionally, 1 meeting took place with the Bureau Directors at MDPH (May 2013). 4 meetings with EPB Director and Project Officer (November, February, March and April). Another 5 took place with training partners from the DelValle Institute of Emergency Preparedness, the Center for Excellence for Emergency Preparedness Education and Training (CEEPET) at UMass Medical School, and the Preparedness and Emergency Response Learning Center (PERLC) at the Harvard School of Public Health (HSPH).

The desired short-term outcome of our work to address problem #1 is: *Strengthened partnerships among public health and academic partners to ensure that LPHI trainings and programs are aligned with the learning priorities of the LPH workforce and are of high quality*. Over the course of the reporting period, active collaboration led to high quality training programs that meet the needs of the LPH workforce. Examples of such efforts include:

- **Integrated Pest Management:** LPHI staff worked with the CDC to develop and deliver a three day, hands-on Integrated Pest Management (IPM) training to prepare public health professionals to effectively reduce or eliminate disease threats and other health concerns from vectors and pests. The IPM grew out of last year's successful collaboration with the CDC on Environmental Health Training in Emergency Response or EHTER.
- **The 2013 Foundations Course:** This year, the course covered 18 topics via two days of in-person classroom training, including a half day Real World Environmental Health session, seven 2 to 2.5 hour interactive webinars, and nine online modules, seven of which had an accompanying half hour "mini webinar" for further discussion of the topic. The success of the course depends upon strong partnerships among the LPHI staff and LPH practice partners.
- **Online module development:** Also during the reporting period, 14 new online awareness level modules were added to the already existing modules. These modules are the result of strong partnership between the LPHI staff, faculty at the Boston University School of Public Health, MDPH staff and practitioners in the field.
- **Legal Nuts and Bolts of Isolation and Quarantine:** This two-part training took place in three locations during the reporting period. Continued collaboration between staff at MDPH and the LPHI resulted in another round of successful training on the legal aspects of isolation and quarantine.

- **Emergency Risk Communication in Practice classroom training:** The LPHI also worked closely with the DelValle Institute of Emergency Preparedness, the Center for Excellence for Emergency Preparedness Education and Training (CEEPET) at UMass Medical School, and the Preparedness and Emergency Response Learning Center (PERLC) at the Harvard School of Public Health (HSPH) to finalize the Emergency Risk Communication in Practice classroom training curriculum.
- **Managing Effectively in Today's Public Health Environment :** This multi-part webinar and performance-level training series for public health managers is the result of coordination and collaboration between the LPHI and the New England Alliance for Public Health Workforce Development and involved numerous practice partners in course development.
- **Support for MA Public Health Professional Association training efforts:** LPHI leadership served on the MEHA and MHOA Education Committees, served on the Executive Committees of MAHB, MEHA, and MHOA, and supported five annual conferences organized by public health partners.

The alignment of the LPHI priorities and resources with those of the New England Alliance for Public Health Workforce Development maximized resources for training, prevented duplication of effort, and resulted in more public health training initiatives than would have been possible under either funding stream alone.

Problem #2: The LPH workforce may not possess the capabilities needed to prepare for and respond to emerging public health issues and emergencies. Training is needed to ensure the LPH workforce has the competencies necessary to protect the health of MA residents. To address problem #2, the LPHI will accomplish the following objective: *Provide training courses and education programs on Public Health and Emergency Preparedness competencies.* The figure below shows progress made toward the objective during the reporting period.

# of trainings and programs	<p>The 18 session Foundations Course ran from January – April in 2013. 14 new online modules (Bathing Beaches, Body Art, Drinking Water, Emergency Preparedness at Home, Emergency Preparedness in MA, Food Protection, Hoarding, Housing, Nuisance Control, Public Health Law and Legal Issues in MA, Public Health Workforce Protection, Recreational Camps, Tanning Facilities, and Wastewater and Title 5) were added to address dozens of cross-cutting competencies at the awareness level. Classroom trainings covered Legal Nuts and Bolts of Isolation and Quarantine, Parts I and 2. A third iteration of the Foundations Course was held. And Integrated Pest Management (IPM), a collaborative effort with the CDC, was held.</p> <p>Additionally, LPHI support was extended to training partners to help underwrite the following conferences/trainings: MAPHN Annual Conference; MEHA Yankee Environmental Conference; MHOA Annual Conference; MAHB BOH Certificate Program; and WMPHA Annual Conference.</p> <p>From 2012-2013, LPHI collaborated with DelValle, HSPH and CEEPET to develop the Emergency Risk Communication in Practice classroom training. This curriculum was finalized in May 2013.</p> <p>Coordination and Collaboration between the LPHI and the New England</p>
-----------------------------	---

	<p>Alliance led to the creation of the webinar series "Managing Effectively in Today's Public Health Environment," which covers performance-level competencies and targets public health managers.</p> <p>The LPHI website also promoted additional training resources, updates, and 29 partner events/trainings.</p>
# of competencies covered in trainings/programs	The constellation of trainings offered address 12 of the 17 program area and 8 of the 10 cross cutting competencies at the awareness level. All four EP competencies were addressed.
# of registrants and # of participants (total, by region and role)	<ul style="list-style-type: none"> For Legal Nuts and Bolts, Part (LNAB1), 50 registered and 33 completed, a 66% completion rate. For LNAB2, 40 registered and 27 completed, a 67.5% completion rate. For the 2013 Foundations Course, 37 registered and 30 completed, an 81.1% completion rate. For the Integrated Pest Management course, 65 registered and 51 (78.5%) completed the program. For the online modules, 2,686 viewed the modules (e.g., using them as a reference) whereas 944 (35.1%) completed an entire module, including the pre/post test and evaluation. <p>The roles and regions of those who completed training are provided in the tables below. Most trainees work in local public health. LPHI trainees come from all five regions although regional utilization varies by training.</p>

Table 1. Percent of types of professional completing LPHI training

Professional roles	LNAB 1 (n=33)	LNAB 2 (n=27)	Foundations (n=30)	IPM (n=51)	Modules (n=944)
Local public health nurse	39.4	22.2	26.7	0	14.3
Local health director/agent	0	0	23.3	32.8	13.9
Local sanitarian/health inspector/environmental health worker	24.2	25.9	26.6	23.4	27.8
Board of Health member/chairman	3.0	3.0	0	3.1	2.3
Other*	33.4	49.9	23.3	20.3	41.7

*Other=MDPH staff, health care personnel, students, other local health department staff, private industry

Table 2. Percent of regions represented among those completing LPHI training

MDPH Preparedness Regions	LNAB 1 (n=33)	LNAB 2 (n=27)	Foundations (n=30)	IPM (n=51)	Modules (n=944)
Region 1: Western MA	12.1	14.8	6.7	11.8	9.4
Region 2: Central MA	21.2	22.2	6.7	11.6	15.4
Region 3: Northeastern MA	21.2	18.5	10.0	13.2	17.5
Region 4: Boston, Greater Boston, Metrowest area	12.1	7.4	46.7	17.9	19.4
Region 5: Southeastern MA and Cape Cod	21.2	18.5	16.7	12.6	17.2
State staff	4	18.5	13.3	3.4	3.5
Other (more than one region/outside MA)	8.2	0	0	29.4	17.6

The desired short-term outcome of our work to address problem #2 is: *Increased numbers of Local Public Health workforce members trained on cross-cutting, program area and emergency preparedness competencies.*

Table 3. Number* exposed to program area competencies during the reporting period

Program Areas	Total trained:		Total trained:
1. Air Quality	0	10. Housing	91
2. Animal Control	0	11. Nuisance Control and Noisome Trades	29
3. Body Art	58	12. Recreational Camps for Children	69
4. Disease Case Management	0	13. Recreational Waters: Swimming Pools & Bathing Beaches	178
5. Disease Surveillance, Investigation & Follow-up	30	14. Solid Waste	0
6. Drinking Water	62	15. Tanning Establishments	52
7. Food Protection	127	16. Vaccine Management	77
8. Hazardous and Infectious (Medical and Biologic) Waste	0	17. Wastewater Treatment	332
9. Health Promotion and Disease Prevention	123		

*includes those who used modules for reference, not just completers

Table 4. Number exposed* to cross-cutting competencies during the reporting period

Cross Cutting Competencies	
1. Advocacy	30
2. Analysis, Problem Solving, and Risk Management	783
3. Communication	783
4. Community/Public Health Assessment	373
5. Cultural Competence**	0
6. Emergency Preparedness	453
7. Health Education	612
8. Leadership	30
9. Legal Issues	265
10. Project Development, Planning, and Management**	0

* includes those who used modules for reference, not just completers

**Will be addressed by the new EP Risk Communication and Management trainings next year

Table 5. Number exposed* to EP competencies during the reporting period

EP Competencies	
1. Model Leadership	245
2. Communicate and Manage Information	86
3. Plan for and Improve Practice	86
4. Protect Worker Health and Safety	277

* includes those who used modules for reference, not just completers

Problem #3: In order to use the available resources effectively and provide the Local Public Health workforce with needed training, we must understand their training needs, assess which trainings are available to meet their needs, and develop training to address the gaps. To address problem #3, the LPHI will accomplish the following objective: *Assess workforce competencies and training needs.* The figure below shows progress made toward the objective during the reporting period.

Completed first draft of competency report	The first full draft of the competency report was completed in February of 2010. Since then, trainees have been asked to provide data about desired training topics for future trainings on session evaluation forms. In this way, the LPHI is able to track the needs and interests of those engaged in training.
Completed gap analysis and inventory of available trainings	The inventory of trainings and gap analysis were completed in July of 2010. Since then, LPHI staff have been cross-walking LPHI offerings with the program area and cross-cutting competencies to ensure that LPHI resources are being used to address the competencies needed by the LPH workforce. The table in Appendices B shows the cross-cutting, program area and emergency preparedness competencies addressed by current LPHI trainings and those in development.
Assure awareness level training across 17 Program Areas and 10 Cross-Cutting Competencies.	LPHI is committed to providing awareness level training covering the 17 Program Areas and 10 cross cutting competencies through the Foundations Course and online modules (asynchronous learning or in small classroom settings with a Facilitator's Guide), as well as additional courses related to the federal capabilities. As a result of the gap analysis, and using support from the HRSA-funded New England Alliance for Public Health Workforce Development (Alliance), LPHI is offering performance level training using the MA Public Health Inspector Training (MA PHIT) model which includes prerequisites, classroom training, field training, and final assessment of competence related to housing and food inspections, and is developing a comprehensive public health management training series.

The desired short-term outcome of our work to address problem #3 is: *Improved understanding of the training needs of Local Public Health and the trainings that exist and those that are needed.* The tables in Appendix B shows the current trainings and those in development and the program area, cross-cutting, and emergency preparedness competencies addressed by each. Including the new management and risk communications trainings developed this year, the LPHI is able to address all 10 cross-cutting competencies and all of the 17 program area competencies except air quality, animal control, disease case management, hazardous and infectious waste and solid waste.

Problem #4: To maximize resources, we should collaborate with others who have a vested interest in strengthening the Local Public Health workforce. To address problem #4, the LPHI will accomplish the following objective: *To build partnerships.* The figure below shows progress made toward the objective during the reporting period.

# of partners and collaborative projects	<p>In addition to partnerships with the six public health associations, the LPHI has a number of other partnerships and is working on several collaborative projects, including:</p> <ol style="list-style-type: none"> (1) The DelValle Institute, Harvard School of Public Health PERLC, UMass Medical Center CEEPET, and the LPHI are collaborating on the development of Risk Communication in Practice training. (2) BUSPH students worked under the guidance of faculty and state or local content experts to develop the new online modules released during the reporting period.
--	--

	<p>(3) The LPHI and MDPH collaborated on the Legal Nuts and Bolts training sessions and content for the new online modules.</p> <p>(4) In conjunction with the Centers for Disease Control and Prevention, the LPHI delivered the Integrated Pest Management training.</p> <p>(5) The resources of the HRSA-funded New England Alliance for Public Health Workforce Development enable the LPHI to address public health training topics outside the scope of LPHI funding, which is emergency preparedness focused. The new management course is an example of the benefits of this relationship.</p>
--	--

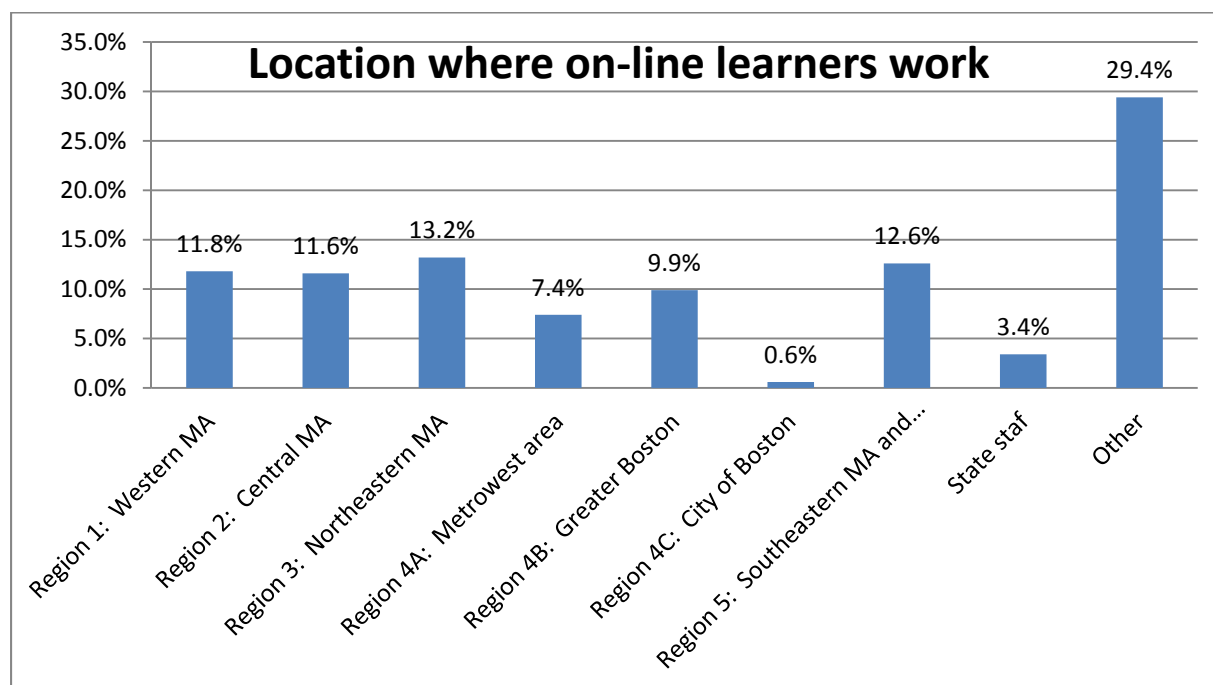
The desired short-term outcome of our work to address problem #4 is: *Increased educational offerings and collaborative projects*. In addition, the collaborative efforts to create and deliver training to 1,030 trainees in the reporting period and planning for the risk communications and management training courses, the LPHI also inducted eight new fellows to the LPHI Fellows Program, bringing the total number of fellows to 14. The evaluation showed that the program was successful in meeting its objective and its marketing, application process and selection criteria, and recognition event.

Problem #5: Geographic distances, staffing shortages at the local level, and scheduling challenges present significant obstacles when it comes to accessing classroom training. Tremendous technological resources exist that will enable the LPHI to address these obstacles by offering a more convenient avenue for training using web-based technology. The LPHI should determine appropriate uses for distance education and increase its use accordingly. To address problem #5, the LPHI will accomplish the following objective: *Increase capacity for distance education*. The figure below shows progress made toward the objective during the reporting period.

# of trainings or programs with a distance education component	<p>During the reporting period, the Foundations Course utilized seven 2-2.5 hour interactive webinars and nine online modules, seven of which had an accompanying half-hour mini webinar for further discussion on the topics.</p> <p>14 new online modules were launched this year. In all, 2,686 trainees accessed LPHI educational offerings via the internet, including online module completers, and those who utilized the modules as reference materials. To facilitate use of the modules by groups, Institute staff created facilitator's guide for the modules (available as a PDF within the module). The Facilitator's guide provides suggestions and guidelines for how to conduct the training. Each facilitator can adapt the guidelines and/or incorporate his/her own training methods to best meet the needs of any given group of trainees. Throughout the guide, there are additional points of discussion to better illustrate the information on each webpage.</p>
--	--

The desired short-term outcome of our work to address problem #5 is: *Increased participation in LPHI offerings across all regions*. Table 2 above shows the regions in which trainees who utilized any of the LPHI's offerings over the reporting period work. LPHI classroom trainings are purposely conducted in different regions of the Commonwealth, rotating locations each time they are offered. The LPHI's online offerings enable trainees to participate in LPHI educational offerings regardless of location. Further, the asynchronous options enable trainees to access training anytime, anywhere. This year, 30 students total benefited from the webinar and online portions of the Foundations Course and 944 benefited by

completing the LPHI's modules and 2,686 from using the modules for other purposes. The bar graph below shows the regions in which those trainees who used LPHI online offerings work. Among the public health emergency preparedness regions, Region 3 had the highest utilization of the LPHI online modules at 13.2% followed by Region 5 (12.6%), Region 1 (11.8%), and Region 2 (11.6%). Together, regions 4A, 4B and 4C total 17.9%. In all, the greatest portion of online users are "others" (e.g., outside MA, students, private industry, consultants).



Problem #6: Although the LPHI offers tremendous opportunities for improving the skills and knowledge of the LPH workforce, too few people know about the LPHI or its offerings. The LPHI needs an effective communications and marketing plan to address this problem. To address problem #6, the LPHI will accomplish the following objective: *Have an effective communications and marketing plan.* The figure below shows progress made toward the objective.

A developed plan for marketing the LPHI and its offerings	<p>The LPHI is included in the integrated communications plan for the Office of Public Health Practice at BUSPH, which was completed in early 2011. The plan contains target audiences, tactics for branding and messaging, and metrics for measuring reach.</p> <p>The LPHI website was revised and re-launched in 2011 with a new learning management system (LMS) that tracks course registration and course completion. The LMS integrates pre/post tests and evaluations for the online modules. The LPHI website also promotes LPHI trainings, updates, and partner events/trainings.</p> <p>All educational offerings and the Fellows Program were publicized on</p>
---	---

	the LPHI website, using the BUSPH Constant Contact List, in the LPHI newsletter and through information forwarded to the public health associations who disseminate the material to their members.
Explore incentives for training	<p>All graduates of the Foundations Course received a certificate of completion and nurses, sanitarians and health officers who completed all pre/post-tests were awarded contact hours that are applicable toward their continuing education credits. In all, 944 certificates of completion and contact hours were awarded to those completing the pre/post test and evaluations connected to the online modules. As further modules are developed, the LPHI staff are considering 'bundling' and issuing certificates for completion in sets (e.g., an environmental health certificate or a public health nursing certificate).</p> <p>The Fellows Program, launched in 2011, recognizes significant contributions to public health practice and creates an incentive among prospective fellows to attain more training and to provide more service. The program evaluation showed that all of the fellows who completed the evaluation survey (6 of 8) felt the fellows program motivated them to get more training.</p>
# of newsletters, flyers and calendars	Monthly updates, three Community Engagement Newsletters and five promotional flyers were sent to the MA public health workforce to promote the work of the Institute. Additionally, a training calendar was utilized to coordinate training efforts with MDPH and the six public health associations.

The desired short-term outcomes of our work to address problem #6 are described below.

Increased awareness of the LPHI and its programs: During the reporting period, 192 people showed interest in LPHI classroom, webinar and blended format trainings by registering for them. Nine individuals began and eight successfully completed the LPHI Fellows application process. The interest in training and the Fellows program demonstrate an awareness of the LPHI offerings. Additionally, more than 100 people attended the induction ceremony for the LPHI fellows thanks to the marketing efforts associated with the event. During the reporting period, there were 34,535 hits to the LPHI website. Of those, 2,686 utilized the online modules as references and 944 completed the modules.

Identify and utilize incentives when feasible: As noted above, the certificates of completion and contact hours for courses serve as incentives for training. Additionally, the new LPHI Fellows indicated that the program motivated them to consider additional training in order to become a fellow.

Increased registrations for LPHI trainings: During the reporting period, 192 people registered for classroom, webinar and blended format session. Additionally, 2,686 utilized the online modules for reference purposes and 944 completed one or more modules and received certificates of completion.

Intermediate outcomes:

As the LPHI progresses toward its objectives over time, we expect to achieve one intermediate and one longer-term outcome. The intermediate outcome is: *Improved cross-cutting, program area and emergency preparedness competencies among the local public health workforce who have received training from the LPHI.* It is a “primary level outcome,” which means that we should see improved competencies among our primary target (i.e., members of the local public health workforce who participate in LPHI trainings). In the reporting period, the data related to this outcome comes from several trainings:

The Foundations Course: The course covers 12 of 17 program area and 7 of 10 cross cutting competencies at the awareness level. Most of the 2013 cohort liked the mix of classroom, webinar and module components and were highly satisfied with various aspects of the training. They gave consistently high ratings for the Day 1 Classroom training and its instructors. Most felt the Real World EH Day was useful, but the majority would like to have been able to attend all three workshops. Roughly half felt the time allotted for the day was adequate. The webinars were consistently rated as useful, easy to understand and as having clear learning objectives. Although roughly 70% felt the time allotted for the webinars was adequate and the interactivity kept them engaged, the comments suggest that changes may be needed to improve the interactivity and the amount of time dedicated to each. Instructors received high ratings for both classroom and webinar sessions.

All trainees perceived they were better prepared to perform the course learning objectives after training than they were before and 96.8% said they feel better prepared for their work because of the course. All trainees said their knowledge increased as a result of the Day 1 Classroom training, EH Day, and the course overall. Despite their perceived gains in knowledge and skills, only 14 out of 30 trainees performed better on the post-test than the pre-test quiz.

All (100%) trainees indicated that the content covered in Day 1 would be useful in their work, 81.8% indicated that the workshops that were part of the Real World Environmental Health Day would be help them to do their jobs, and 92% reported that the course's webinar content would be useful in their work. All intend to use at least one thing learned in the sessions and the course overall in their work.

Legal Nuts and Bolts: The participants in part I and part II rated their perceived ability to perform the learning objectives associated with their respective training session prior to and after training. Participants in both Parts I and II felt better prepared to perform their session learning objectives as a result of training. Using a Likert Scale (5=strongly agree to 1=strongly disagree), participants were asked to indicate their level of agreement with statements about the training. Ratings also show a high degree of satisfaction with all aspects of the training (range: 4.65 to 5.0). Among the statements rated by trainees was “The content will be useful to me in my work.” For Part I participants, the mean was 4.79 out of 5. For Part II, the mean was 4.77 out of 5.

Integrated Pest Management: Participants in the IPM course also rated themselves as better prepared to perform all of the course's 12 learning objectives after training than before. Using a Likert Scale (5=strongly agree to 1=strongly disagree), participants were asked to indicate their level of agreement with statements about the training. The average ratings show a high degree of satisfaction with all aspects of the training (range: 4.46 to 5.0). Most (96%) agreed or strongly agreed that the content of the IPM course will be useful in their work. All (100%) indicated that their knowledge increased as a

result of training and 98% reported the intention to use at least one thing learned in the training in their work. Additionally, 66% said they would apply the training to a state or national certification.

Online modules:

Completion of pre-/post-tests and evaluations are required to receive a certificate with contact hours for 18 of the 26 online modules. Trainees were asked to use a Likert scale (1=very low to 5=very high) to rate their ability to perform the module related learning objectives before and after completing the trainings. For all 18 modules, trainees consistently rated their perceived ability as higher after training than before training. The available pre and post-test findings demonstrated knowledge gains among trainees for all 18 modules. Table 6 shows the average pre-test and post-test quiz scores for all of the online modules since their launch. The average quiz scores at post-test are higher than the average at pre-test for all modules with the greatest changes seen among completers of in Recreational Waters: Beaching, Drinking Water, Public Health Law, Nuisance Control and Abatement and Housing.

Table 6. Average pre and post-test scores for online modules since their launch

Online Module Title (# of post-test completers since module launch)	Average Score at Pre-test	Average Score at Post-test
Bedbugs (n=81)	7.39	13.07
Body art (n=26)	9.14	14.38
Dealing with Stress in Disasters (n=84)	6.75	12.42
Drinking Water (n=14)	4.93	11.3
Emergency Preparedness in MA (n=47)	3.72	8.49
Food Protection (n=84)	8.61	13.37
Hoarding (n=40)	8.59	12.7
Housing (n=71)	6.55	12.72
Lyme Disease (n=45)	9.4	13.69
Nuisance Control and Abatement (n=37)	6.92	13.19
Orientation to Local Public Health (n=378)	10.12	13.31
Public Health Law (n=61)	6.88	13.18
Public Health Work Force Protection (n=18)	4.1	9.94
Recreational Camps (n=57)	7.31	12.63
Recreational Waters: Beaches (n=52)	5.1	12.19
Recreational Waters: Swimming Pools (n=67)	8.51	13.69
Tanning (n=65)	10.52	14.77
Wastewater and Title 5 (n=211)	10.37	14.24

Longer-term outcome:

The longer-term outcome is: *Improved agency performance in areas related to competencies in which agency personnel have been trained by the LPHI.* It is a “secondary level outcome,” which means that an expected result of LPHI training is that agencies will benefit from the increased competencies of their staff that have been trained by the LPHI and that, consequently, agency performance related to those competencies should improve.

As its inaugural effort to evaluate the longer-term impact of LPHI training, online surveys were administered with 18 Foundations course graduates from the 2010 and 2011 cohorts and with supervisors (n=5) who sent more than one of their staff to the Foundations Course. All supervisors reported that their staff members' knowledge about all 18 topics increased as a result of the course. The majority (75%) said that their staff learned a great deal in the course, staff use what they learned on the job, staff members are more effective as a result of what they learned in training, and that their office and organization are both better positioned to achieve their goals as a result of what the staff learned in the course. Half of the supervisors reported that the staff's participation in the course was partially responsible for raises, increased autonomy, and promotions granted to the staff. All supervisors indicated that the staff, once trained, had been given more responsibility on the job. All supervisors indicated that the training was at least partially responsible for the improved quality of programs in the workplace and increased productivity and efficiency of staff and programs. The ratings of overall value of the course among supervisors were extremely high. All said they would recommend that their colleagues send staff to the course.

Foundations Course graduates who responded to the survey came from local health departments (88.9%), the state health department (5.6%), and health care organizations (5.6%). The majority agreed that they learned a great deal in the course (94.5%), found course materials useful in their jobs (88.9%), are using the course content in their job (94.5%), are more effective in their job as a result of the course (83.3%), that the trainees program/office (72.2%) and organization (61.4%) are better able to achieve their goals as a result of the trainee's participation in the course. The majority also said they have received positive feedback from their supervisors about their participation in the course (66.7%). One-third of trainees reported they had received a raise and promotion since participating in the course and believe both were, at least in part, related to their participation in the course. Further, 77.8% feel that positive feedback received from their supervisors regarding their job performance can be at least partially attributed to their participation in the course. Most (94.4%) said they would recommend the course to a colleague.

The findings from the follow-up surveys indicate that the LPHI was effective at both improving trainee competencies (our intermediate outcome) and the effectiveness of the trainees and the organizations in which they work (our longer-term outcome). To assess the longer-term impact of LPHI trainings on worker and organizational performance, we must allow sufficient time to pass after training to enable workers and supervisors to observe changes in performance. Therefore, we expect to evaluate the longer-term impact of additional LPHI trainings as individual trainings are offered for two or more years after their initial pilot phase.

Conclusions and Next Steps: The reporting period was very productive with significant progress made toward all six program objectives. Below, the major accomplishments are summarized and are followed by a list of recommended next steps.

- The LPHI expanded its capacity for distance learning and added 14 new online modules during the reporting period covering Bathing Beaches, Body Art, Drinking Water, Emergency Preparedness at Home, Emergency Preparedness in MA, Food Protection, Hoarding, Housing, Nuisance Control, Public Health Law and Legal Issues in MA, Public Health Workforce Protection, Recreational Camps, Tanning Facilities, and Wastewater and Title 5
- The LPHI also ran a third iteration of the Foundations Course, offered Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2 in three locations across the Commonwealth, and held a new Integrated Pest Management course, a collaborative effort with the CDC. In all of these

trainings, participants rated themselves as better prepared to perform learning objectives after training than before and nearly all trainees reported that the training content would be useful in their work. In the Foundations Course, only 14 of 30 participants showed improvement from their pre-test to post-test on the course quiz. Completion rates ranged from 66% to 81.1% with the highest level of attrition occurring in the two Legal Nuts and Bolts sessions.

- In all, 1085 trainees received education in the LPHI's training sessions or by completing one or more online modules during the reporting period. Trainees represent all of the Public Health Emergency Preparedness Regions. Although the LPHI is reaching its intended target audience of local health directors/agents, public health nurses, sanitarians/inspectors, and BOH members/chairpersons, a large proportion of trainees were classified as having "other" positions (e.g., MDPH staff, health care personnel, students, other local health department staff, industry representatives).
- The LPHI Fellows Program inducted 8 new fellows. Based on evaluation results, the program was very successful in meeting the program objective and in its marketing, application and selection criteria, and recognition event, which was attended by more than 100 people.
- The LPHI Advisory Committee met three times, including its March meeting with the LSAC (which will serve as the LPHI's Advisory Committee into the future). Representatives from all MDPH EP regions, six public health associations, and five academic institutions sit on the advisory committee.
- Collaborative planning with LPHI partners yielded the Emergency Risk Communications in Practice classroom training curriculum and the new management training series curriculum. The LPHI also extended support to several partners and underwrote five annual professional conferences.
- The number of registrations for trainings, utilization of the online modules, applicants for the Fellows Program, and attendance at the Fellows induction ceremony are all indicators that the LPHI marketing efforts were successful.
- Data were collected via training evaluations to supply the LPHI with an on-going assessment of training needs among LPHI users. The LPHI evaluation strategy also allowed for the tracking of progress toward LPHI objectives and the identification of next steps for the year ahead.

Recommended next steps:

The LPHI should continue to build on its successes in the coming year, including:

- Continuing to deliver and evaluate the blended and classroom sessions, as well as the online modules.
- Building on the success to date of the LPHI Fellows Program.
- Continuing collaborative planning with partners to deliver training and develop new offerings.
- Continuing to use of the communications and marketing plan and implement products to increase awareness of LPHI offerings and the Fellows Program.
- Continuing to evaluate LPHI progress toward objectives.

There are two recommended changes for next year.

- The first involves the poor results associated with the pre/post quiz in the Foundations Course. An incentive(i.e., a grade of 70 or better to pass the course) is recommended to help ensure participant investment in learning the Foundations Course content. Some modifications to quiz questions are also necessary to ensure better measurement of knowledge gains as a result of the course.

- Second, LPHI staff should explore the causes of attrition between registration and completion of trainings, particularly the Legal Nuts and Bolts sessions, to understand what can be done to increase trainee retention.

Appendix A: Local Public Health Institute (LPHI) of Massachusetts Logic Model

Mission: To provide and ensure a competent workforce by strengthening and sustaining the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth.

Problems/resources	LPHI objectives	Outputs	Short-term outcomes
A group of individuals that understands the needs of local public health and that represents various segments of the workforce and geographic areas of the Commonwealth is needed to advise MDPH and others (e.g., DEP, MEMA) about how to most effectively achieve the LPHI mission.	Rebuild and convene a highly functioning Advisory Committee	<ul style="list-style-type: none"> ✓ # of associations represented ✓ # of regions represented ✓ # of academic partners represented ✓ # of meetings ✓ Production/adoption of operating principles 	Strengthened partnerships among public health and academic partners to ensure that LPHI trainings and programs are aligned with the learning priorities of the LPH workforce and are of high quality.
The LPH workforce may not possess the capabilities needed to prepare for and respond to emerging public health issues and emergencies. Training is needed to ensure the LPH workforce has the competencies necessary to protect the health of MA residents.	Provide training courses and education programs on PH and EP competencies	<ul style="list-style-type: none"> ✓ # of trainings and programs ✓ # of competencies covered in trainings/programs ✓ # of registrants and # of participants (total, by region, role) 	Increased numbers of LPH workforce members trained on cross-cutting, program area and emergency preparedness competencies
In order to use the available resources effectively and provide the LPH workforce with needed training, we must understand their training needs, assess which trainings are available to meet their needs, and develop training to address the gaps.	Assess workforce competencies and training needs	<ul style="list-style-type: none"> ✓ Completed first draft of competency report ✓ Completed gap analysis and inventory of available trainings 	Improved understanding of the trainings needs of LPH and the trainings that exist and those that are needed.
To maximize resources we should collaborate with others who have a vested interest in strengthening the LPH workforce	Build partnerships	<ul style="list-style-type: none"> ✓ # of partners and collaborative projects 	Increased educational offerings and collaborative projects
Geographic distances, staffing shortages at the local level, and scheduling challenges present significant obstacles when it comes to accessing classroom training. Tremendous technological resources exist that will enable the LPHI to address these obstacles by offering a more convenient avenue for training using web-based technology. The LPHI should determine appropriate uses for distance education and increase its use accordingly.	Increase capacity for distance education	<ul style="list-style-type: none"> ✓ # of trainings or programs with a distance education component 	Increased participation in LPHI offerings across all regions
Although the LPHI offers tremendous opportunities for improving the skills and knowledge of the LPH workforce, too few people know about the LPHI or its offerings. The LPHI needs an effective communications and marketing plan to address this problem.	Have an effective communications and marketing plan	<ul style="list-style-type: none"> ✓ A developed plan for marketing the LPHI and its offerings ✓ Explore incentives for training ✓ # of newsletters and calendars 	<p>Increased awareness of the LPHI and its programs</p> <p>Identify and utilize incentives when feasible</p> <p>Increased registrations for LPHI trainings</p>

Primary level Outcome:

Improved cross-cutting, program area and emergency preparedness competencies among the local public health workforce who have received training from the LPHI.

Secondary Level Outcome:

Improved agency performance in areas related to competencies in which agency personnel have been trained by the LPHI.

Appendix B. Competencies addressed by LPHI Trainings

Program Area Competencies	Modules/trainings in which competencies are addressed
Air Quality	None at this time
Animal Control	None at this time
Body Art	Body art module
Disease Case Management	None at this time
Disease Surveillance, Investigation and Follow-up	Foundations Course
Drinking Water	Drinking water and Food Protection Modules; Foundations Course
Food Protection	Food Protection Module and Foundations Course
Hazardous Waste	None at this time
Health Promotion and Disease Prevention	Lyme Disease Module and Foundations Course
Housing	Hoarding and Housing modules
Nuisance Control and Noisome Trades	Foundations Course
Recreational Camps for Children	Recreation Camps module and Foundations Course
Recreational Waters: Swimming Pools and Bathing Beaches	Bathing Beaching and Pools modules; Foundations Course
Solid Waste	None at this time
Tanning Establishments	Tanning Facilities module
Vaccine Management	Foundations Course
Wastewater Treatment	Wastewater & Title 5 module; Foundations Course
Cross-Cutting Competencies	Modules/trainings in which competencies are addressed
Advocacy	Foundations Course
Analysis, Problem Solving and Risk Management	Dealing with Stress in Disasters, Bed Bugs, Lyme Disease, and Pools modules; Foundations Course; Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2; Integrated Pest Management; Managing Effectively*; Emergency Risk Communication in Practice*
Communication	Dealing with Stress in Disasters, Bed Bugs, Lyme Disease, and Pools modules; Foundations Course; Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2; Integrated Pest Management; Managing Effectively*; Emergency Risk Communication in Practice*
Community/Public Health Assessment	Lyme Disease module; Foundations Course
Cultural Competence	Emergency Risk Communication in Practice*
Emergency Preparedness	Dealing with Stress in Disasters, EP at Home, EP in MA, and PH Workforce Protection modules; Foundations Course; Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2; Integrated Pest Management; Emergency Risk Communication in Practice*
Health Education	Dealing with Stress in Disasters, Bed Bugs, and Pools modules; Foundations Course; ; Legal Nuts and Bolts of Isolation and Quarantine Part 1; Integrated Pest Management; Emergency Risk Communication in Practice*
Leadership	Foundations Course; Management Effectively*; Emergency Risk Communication in Practice*
Legal Issues	Public Health Law in MA and Pools modules; Foundations Course; Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2; Managing Effectively*

Project Development, Planning and Management	Managing Effectively*
EP Competencies	Modules/trainings in which competencies are addressed
Model Leadership	Dealing with Stress in Disasters, EP at Home, and EP in MA modules; Legal Nuts and Bolts of Isolation and Quarantine Parts 1 and 2; Managing Effectively*; and *; Emergency Risk Communication in Practice*
Communicate and Manage information	EP in MA module; Integrated Pest Management; Managing Effectively*; Emergency Risk Communication in Practice*
Plan for and Improve Practice	EP in MA module; Integrated Pest Management; Managing Effectively*
Protect Worker Health and Safety	EP at Home; Dealing with Stress in Disasters; Managing Effectively*; and Public Health Workforce Protection

*Training not yet launched

