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Eric W. Hayden

University of Massachusetts Boston, [eric.hayden@umb.edu](mailto:eric.hayden@umb.edu)

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# **Should Massachusetts Regionalize Public Health?**

**Eric W. Hayden**

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## Should Massachusetts Regionalize Public Health?

Eric W. Hayden

### **Abstract:**

Amidst rising global concerns about bioterrorism and pandemic flu preparedness, the delivery capacity and effectiveness of public health service assumes increased importance and relevance. In the United States, the lack of a centralized, national public health system has meant that “public health” is the primary responsibility of state and local governments. Many states have established various types of intrastate regional structures to deliver the range of on-going, occasional, and/or episodic services that characterize the world of public health. However, Massachusetts is not among them. Despite its global reputation as a pre-eminent medical center, the state of Massachusetts has a highly balkanized public health system, with a separate health department for each of its 351 cities and towns. This structure reflects the state’s long-standing tradition of weak county government and strong home rule. The result, however, is a state-wide public health system characterized by strong local autonomy, lack of accountability, no credentialing or licensure requirements, disparate delivery capabilities, increased funding problems, and the real potential for ineffectiveness in the event of a devastating disease or attack. This paper examines how public health is currently organized and delivered both nationally and within Massachusetts, and it concludes by identifying criteria and potential regionalization structures that could lead to a more efficient and comprehensive public health delivery capability for the state. The findings have relevance not only for Massachusetts but also any state looking to improve the delivery of its public health services.

### **Introduction:**

Massachusetts is a world renowned center of medical excellence, the home of world-class training, delivery and research systems like Harvard University Medical School, the Massachusetts General Hospital, and the Dana Farber Cancer Institute. However, the state’s reputation as a “Medical Mecca” stems more from its success in *treating and curing* disease rather than in *preventing* disease and *protecting* its populace from threats to health and safety. In the United States, 99% of healthcare dollars are spent on the former, and only 1% on the latter. It is the latter -the treatment of the broad community rather than the individual- which comprises what is traditionally known as “public health.”

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Eric W. Hayden is professor of finance in the College of Management, University of Massachusetts Boston, where one of his interests is healthcare. Email address: [eric.hayden@umb.edu](mailto:eric.hayden@umb.edu); tel:617-287-7707.

Amidst rising global concerns about preparedness for bioterrorism, pandemics, and natural disasters, the delivery capacity of public health services assumes increased importance world-wide. As demands and expectations rise, one can reasonably question whether Massachusetts's current public health mosaic -351 separate local health departments, one for each of its cities and towns -offers the best infrastructure for providing the range of on-going, occasional, and/or episodic services that characterize the world of public health. Each of these separate health departments is, at least in theory, responsible for delivering the same set of services whether to Boston (population approaching 600,000) or Monroe, a town of about 100 in the state's rural west. The reality is quite different, as the larger municipalities generally meet most of their responsibilities while scores of small towns throughout the rest of the state provide only minimal services.

Is there a better way?

In the wake of September 11, 2001 ("9/11"), most states -including Massachusetts- have established intrastate regional structures to manage and disperse federal emergency preparedness funds. Could Massachusetts use this (or a similar) model as the basis for re-structuring its public health delivery system into one that fosters the operating and financial synergies available through multi-community collaborations? Might the public health needs of the state's 6.5 million residents be more effectively and efficiently managed through, for example, a dozen or so regions rather than the current 351 separate local departments?

Public health is not the only sector in Massachusetts where some form of regionalization could facilitate synergies and cost savings. In its waning months, the Romney administration began to push incentives to get small school districts to consolidate rather than waste millions of tax payer dollars running their own separate, localized operations. In the early months of the successor Patrick administration, there is some dialogue about potential gains to be realized by a more regional approach to municipal services -for example, combining the health insurance and/or pension management of towns as a means of taking advantage of group discounts and/or efficiencies of scale. Including the delivery of public health in this discussion deserves serious consideration.

As a means of fostering such a dialogue, this paper examines how public health is currently organized and delivered both nationally and within Massachusetts, and it then identifies alternative regionalization options that might improve the ability of Massachusetts to respond to a major public health emergency. The implications could be

significant not only for Massachusetts but also other states with town-based public health structures.

### **The U.S. Public Health Structure:**

Through the Tenth Amendment, the U.S. Constitution reserves to the individual states all powers not otherwise either specifically given to the federal government (e.g., defense, foreign diplomacy) or specifically denied the states (e.g., coining money, taxing imports and exports). Retained by every state is the sovereign power to promote and protect the health, safety, and welfare of its people. From the nation's very beginning, the individual states have used this power to develop necessary structures and organizations to prevent epidemics and communicable diseases, to protect citizens from environmental hazards and personal injury, to respond to health emergencies and disasters, and to promote healthy behaviors. While the federal public health presence has grown considerably over the years -for example, through the creation of the Centers for Disease Control and Prevention in 1946, Medicare and Medicaid in 1965, and most recently the Department of Homeland Security- each state remains the primary bastion for protecting its citizens from both acute and chronic threats to the public health. State laws, local ordinances and regulations, licenses, and inspections are the legal means of implementation.

States carry out their range of public health functions through a wide variety of different organizational structures, programs and services, staffing levels, and reporting relationships. Ultimately, however, each state has an identifiable lead agency (e.g., Department of Public Health) with overall public health responsibility. In about two-thirds of the states, that lead agency is free-standing and reports to the governor; in the rest, it is part of a multipurpose health and/or human services agency.<sup>1</sup>

The front line of public health delivery is the local health department, or LHD. Most people know their LHD as the local entity that, among other things, provides both preventative health interventions (e.g., immunizations, screenings for such maladies as tuberculosis or high blood pressure, tobacco use prevention programs, school health programs, and mental health services) and environmental protection services (e.g., restaurant inspections and regulation, septic inspections, water and milk safety, and/or air pollution, insect, and rodent controls).

Nation-wide, there are some 3,000 LHDs. These are often -but certainly not always- staffed by individuals with formal training in public health or medicine. LHDs operate in every state but Rhode Island. They typically report to a local board of health, whose members are usually appointed; less frequently, board members are elected by the public, either to serve in this specific capacity or by virtue of having been elected to some other position, such as a town selectman or member of the county council. In those instances where the local board of health functions in more of an advisory (as opposed to supervisory) capacity, the LHD reports to other parts of local or state government (for example, the state health director, a country commissioner or executive, the city council, or a town manager).<sup>2</sup>

Absent specific and consistent standards to guide their performance, the delivery capacity of LHDs varies widely among communities. Reflecting the geopolitical and socio-economic diversity of the areas they serve, LHDs run the gamut from comprehensive, well-funded metropolitan operations dealing with hundreds of thousands (or even millions) of citizens to barely functioning rural units serving a few hundred people. Those that are unable to perform all public health functions on their own find other means of accomplishing their tasks -for example, by turning to their state for help in carrying out some functions and/or by partnering with local community organizations (e.g., public or private health care providers, schools, businesses, media, and law enforcement or public safety entities) or neighboring LHDs. At times, other government entities provide certain public health functions (e.g., environmental health, emergency medical, mental health, and/or substance abuse services) in close association with the LHD. Ultimately, however, it is the LHD that is responsible -whether as leader, supervisor, convener, partner, collaborator, enabler, or evaluator- for delivery of a cohesive local public health system.

There are basically three general structures by which states manage public health delivery:

- Decentralized (31 states) -where all LHDs are run by the local municipal government
- Centralized (7 states) -where either all LHDs are run by the state or there are no local entities (Rhode Island), where the state provides all local services
- Mixed (12 states) -where some LHDs are run by the state and some by the local government

Nearly 80% of LHDs are units of local government (i.e., county, city, town), while the rest are units of the state health agency.<sup>3</sup>

Because of the predominance of county government in America and its role as a convenient vehicle for down-streaming responsibilities to the local level, some 83 percent of the nation's LHDs serve county, multi-county, or city-county jurisdictions; the rest serve towns and cities.<sup>4</sup> Because of their relatively large budgets, city health departments often have a wider array of programs and services than their county equivalents.

### **The Massachusetts Public Health Structure:**

In much of New England, county government is notoriously weak and, for all intents and purposes, non-existent. This is certainly true in Massachusetts, where the main function of its 12 counties is managing corrections facilities, courts, and registries of deeds, and, in some instances, public hospitals and/or golf courses. In contrast, the state's town and city government organization is particularly strong. This "home rule" bias reflects a long-standing belief that local matters should be handled at the lowest common political denominator by officials familiar with local conditions. Accordingly, state statute mandates that every city and town have its own health department responsible for enforcing state sanitary and environmental codes, adopting reasonable local health

ordinances, and carrying out preventive programs.<sup>5</sup> Backing statute is a significant body of case law plus a host of local regulations. Meanwhile, the primary functions of the state department of public health are dispersing emergency preparedness funds, promulgating health-related regulations, and, when necessary, declaring a state of emergency.

As a result, this single state with little more than 2 percent of the nation's total population accounts for nearly 12 percent of its LHDs. Expressed geographically, the average Massachusetts LHD covers an area of 30 square miles, compared to the 1,250 square miles covered by each of the nation's 3,000 LHDs. In terms of population served, each of Massachusetts's 351 LHDs serves an average of 18,500 people, compared to the approximately 100,000 people served by each of the nation's local health departments.

The development of public health policy, the delivery of related services, and the quality of those services vary widely throughout Massachusetts. As one might expect, LHDs anchored by major cities benefit from economies of scale and larger resources. By contrast, the outliers suffer staff and funding constraints that restrict their main activities to the most basic sanitation and housing services. The result is a fragmented state-wide public health system where, as one state report has noted:

...there is no single view of the appropriate roles and responsibilities of local...health [organizations]....[E]ach...has its own particular set of responsibilities and ways of doing business, responding to widely variable perceptions about public health priorities among local officials, health professionals, and community residents who appear selectively aware of public health issues depending principally on how these issues affect the directly...[Likewise, the] data...show wide variability statewide in the governance, composition, responsibilities, staffing, and financing of local...health [organizations]...<sup>6</sup>

Illustratively, boards may be elected or appointed, while some communities appoint a commissioner of health who is then advised by an appointed committee of residents; other municipalities ask their selectmen to fill the duties of a board of health. Board members are typically volunteer citizens with their own full-time jobs; some of them are healthcare professionals, but many are not; membership turnover is high. For towns large enough to have a health department, staff may be voluntary (typically board of health members) or paid; full- or part-time; with or without formal training in public health. The state's largest cities are able to support complex city health departments with hundreds (even thousands) of employees, many with highly specialized skills. Further complicating the consistency of state-wide public health delivery, Massachusetts is one of the few states with no state-wide credentialing requirement for its local health officials.

Most public health funding comes from local tax revenues and fees. However, as newly mandated obligations and responsibilities have been assigned (e.g., septic system regulations, and tobacco education and enforcement programs) without any commensurate increases in funding, budgets have become increasingly tight. LHDs compete with local school, fire, and police departments for limited and frequently diminished resources. Further constricting the ability of local government is the 1980 law that limits to 2 ½ percent the annual increase in a community's tax levy (absent a

voter override). Since so many municipalities are too small to provide a full range of public health services, the Massachusetts Department of Public Health purchases many such services from some 700 “vendors” -private contractors, community-based organizations (e.g., visiting nurse associations), and agencies (e.g., local department or public works) -that competitively bid for contracts. The contracts range from substance abuse programs to routine sanitation inspections, immunizations, school health services, nursing services, health education programs, well-being clinics, and home hazardous waste disposal.

One of the most basic yet important public health functions is inspecting and licensing restaurants and other food service establishments. A just released and highly critical report by the state auditor finds that Massachusetts’s balkanized approach has put its residents at serious risk of:

evolving disease pathogens and potential bio-terrorism activity [because] inspection and other food protection activities...are not conducted with adequate frequency, quality, standardization, coordination, or oversight... The Commonwealth’s highly decentralized system, operated by generally small town...health authorities with minimal oversight, coordination, or technical assistance from state government has been characterized by the FDA [Food & Drug Administration] as “unique” in the nation and has presented concerns to federal food protection officials at least as far back as 1982...[F]ood protection and other local health authority activities should be restructured using a regionalization approach.<sup>7</sup>

Based on a series of off-the-record discussions and interviews with public health representatives from across the state, the most critical issues facing the state’s fragmented public health system may be summarized as follows:

- staffing -i.e., no minimal staff credentialing, training, or size requirements;
- standards -i.e., no “best practices” model to be shared at local, regional, or state levels
- size -i.e., too many small, under-staffed, under-funded LHDs unable to ensure minimal public health services in their particular serving area
- growing expectations (e.g., emergency preparedness, pandemics, natural disasters) but no increases in funding
- leadership -i.e., no state-wide vision (with public health delivery largely an ad hoc response to individual crises rather than a proactive, systematized undertaking)

### **Benefits of Consolidation:**

The National Association of County & City Health Officials (“NACCHO”) has analyzed the effectiveness of public health infrastructures. The following table, based on NACCHO’s survey data, differentiates, on a percentage basis, a broad sampling of services provided by county, city, city-county, and town-based health agencies. The conclusion is quite overwhelming: LHDs serving larger population bases provide more robust and comprehensive services than those serving small populations.



**Table 1: Percent of Services Provided by Local Public Health Departments:**

Service:	County:	City:	City-County	Town:	Multi-County
Childhood Immunizations	98%	88%	99%	45%	93%
Cancer Screenings	65	41	69	22	74
Cardiovascular Screenings	53	53	39	28	68
Diabetes Screenings	63	44	59	33	66
Blood Pressure Screenings	86	82	85	55	81
Community Assessment	86	75	85	52	87
Community Outreach & Education	94	89	95	62	95
Communicable Disease Control	99	89	98	68	100
Epidemiology & Surveillance	88	80	85	56	92
Family Planning	72	36	56	9	70
Maternal Health	80	60	71	24	88
Prenatal Care	45	34	54	18	59
HIV/AIDS Testing & Counsel	80	43	73	11	72
STD Testing & Counsel	80	60	76	6	69
Tuberculosis Testing	96	87	99	45	90
Tuberculosis Treatment	85	48	90	17	71

Source: National Association of County & City Health Officials, *Local Public Health Agency Infrastructure: A Chartbook* (October 2001): 26-35. <http://archive.naccho.org/documents/chartbook.html>. (accessed March 18, 2007)

The study also examines LHD workforce trends and finds, not surprisingly, that town LHDs have significantly smaller staffs, have more difficulty in attracting and retaining qualified staff, are less able to provide regular staff training, and have more budget constraints than their larger counterparts.<sup>8</sup>

NACCHO is not alone in concluding that the performance of relatively small public health delivery units suffers vis-à-vis that of their larger counterparts. Turnock notes that, “Several reports going back more than 50 years have proposed extensive consolidation of small LHDs because of perceived lack of efficiency and coordination of services, inconsistent administration of public health laws, and inability of small LHDs to raise adequate resources to carry out their prime functions effectively.”<sup>9</sup> In their study of public health performance, Mays et al stress that:

Large public health systems may be able to realize economies of scale...by spreading the fixed costs over larger populations of beneficiaries and taxpayers. Large public health systems may also benefit from larger pools of organizations in the community that may be enlisted to participate in public health activities...

Several previous studies have found evidence that larger public health systems perform better than their counterparts in carrying out activities considered to be important elements of public health practice.<sup>10</sup>

In view of the role of size in the delivery of public health, the issue for Massachusetts is how it might best restructure its heavily fragmented public health system into a more regionalized system. In contrast to the formal administrative or political structure of a town or county, a “region” would be a geographic entity comprising multiple towns that come together to facilitate the provision of services to the combined populations. Such a regional system would allow the fixed costs of public health infrastructure to be spread over a larger population and tax base than possible with a single town. The benefits would presumably be economies of scale, an expanded range of health services, and more timely and efficient delivery.

### **Some Relevant Local Experience with Regionalization:**

Notwithstanding its strong tradition of local autonomy and its highly fragmented approach to public health, Massachusetts has had some experience with “regional” approaches to healthcare. These include several multi-community collaborations established (but no longer funded) to implement state-wide tobacco control initiatives. More recent has been the creation of five emergency preparedness districts to manage the distribution of federal funds made available post-9/11. There are also three other prototypes, potentially more relevant, at least in terms of their broader-based public health functionality.

The longest standing is the Nashoba Associated Boards of Health (“NABH”), created in 1931 under provisions of state statute permitting two or more towns to formally join together into regional health districts to provide health services.<sup>11</sup> Fourteen municipalities located in the central part of the state, cutting across two counties, and accounting for some 90,000 people collectively use NABH as “agent” to assist their elected boards of health in performing their respective functions. The individual health boards retain autonomy, while Nashoba provides a wide range of public health services. The agency and its 175 employees are funded by a combination of member town assessments and user fees.

A different form of collaboration is the state’s only county-wide health department, created in 1926 in Barnstable County, comprising the 15 towns located on Cape Cod, representing some 200,000 year-round residents (and three-times more in the summer). Like every other municipality in the state, each of Barnstable’s towns has its own LHD. But in an arrangement that is unique in the state, the towns also share a county health commissioner and staff, which provide supplemental, *ad hoc* advisory and support services to the local communities on an as-needed basis. Overall funding is provided through a 1 percent county sales tax.

A third type of collaboration is the Franklin Regional Council of Governments (“FRCOG”), a voluntary association of 26 municipalities in the western part of the state

covering approximately 10% of the state's land mass and some 70,000 people. To help the LHDs of member towns perform their normal range of public health functions, the towns hire FRCOG's regional health agent on an hourly basis. Expenses are covered by a combination of user fees and town assessments.

Encouraging as they are, these collaborations collectively involve only about 5 percent of the state's 6.5 million residents living in fewer than one-fifth of its towns. Obviously these prototypes need significant enlargement if they are to form the basis of any meaningful state-wide regionalization scheme.

### **Potential Regionalization Models for Massachusetts:**

There are at least four factors any effort to regionalize will need to keep in mind. First is the matter of size. Despite their advocacy of large health systems, Mays et al also found, "the performance improvements to be gained from consolidation...diminish with size, with further gains appearing unlikely beyond a threshold of approximately 500,000 residents."<sup>12</sup> Second, creating regional structures will be threatening to the many hundreds of dedicated and hard-working public health employees who serve the state's 351 LHDs. Most recognize the obvious short-comings of the current fragmented system, but they are also fearful for their jobs; their buy-in will be vital to any successful transition to regionalization.

Third, convincing towns to integrate public health delivery structures will be far easier if long-standing traditions of local autonomy are respected. Otherwise, staunch grass roots resistance is likely to thwart the effort. Finally, it will be necessary to avoid a "one model fits all" mindset. Different types of mini-regions are already at work, and there is no reason to adopt one model and discard the others. Indeed, it would probably be wise to keep all of the functioning mini-regions in tact and either duplicate them elsewhere and/or create other types of regions.

As noted earlier, LHDs are most typically county-based. Besides Massachusetts, however, there are some notable exceptions, including Connecticut, New Hampshire, and New Jersey. Like Massachusetts, each has a long tradition of home rule and, thus, a highly decentralized public health system. All have similar socio-economic and geopolitical structures: a few large, relatively more prosperous metropolitan areas, with the rest of the population residing in smaller, usually rural, often widely scattered and often much poorer towns. For many of the same reasons that make regionalization a logical next step for Massachusetts, each of these states has begun in recent years to move toward regionalized public health structures. Their experiences are worth noting.

***New Hampshire:*** The impetus for a more regional approach to public health in New Hampshire was a grant provided by The Robert Wood Johnson and the W.K. Kellogg Foundations. Its aim was to integrate local and state government with that of non-governmental organizations like community health centers, hospitals, and social service

organizations. Funding and technical assistance was initially provided to four groups, or “coalitions,” covering 37 of the state’s towns. By combining the diverse expertise of members, the focus of these coalitions has been to overcome local parochialism and foster collaborations.

Although the grant funding has ended, the process and importance of partnering among towns as well as other entities has gained increased state-wide acceptance, thanks to the reality of limited local budgets, a growing appreciation of the efficiencies to be realized through working together, and a state statute (similar to that in Massachusetts) allowing local governments to form multi-town, or “district,” health departments. An additional impetus has been the need to comply with federal emergency preparedness requirements. Mainly by trial and error -trying to integrate school overlay districts, vaccination distribution districts, and emergency preparedness districts -10 quasi-health districts have been created, each focusing on prevention planning. Although still nascent, state health officials are optimistic about the prospects for state-wide regionalization.

***New Jersey:*** A task force funded a few years ago by The Robert Wood Johnson Foundation (“RWJF”) called New Jersey’s public health system -comprising 566 cities and towns as well as some 250 LHDs -“antiquated, outdated and ill-equipped to respond to 21<sup>st</sup> century imperative,” criticizing it as one that “compromises efforts to provide responsive and effective outreach, education and health services.” It went on to recommend the town-based system be restructured into “coherent geographic entities” able to provide more effective “reporting and responsiveness, consumer information resources, training, and...services” able to meet both unanticipated emergencies as well as ongoing health matters. <sup>13</sup>

Prompted by the RWJF and then propelled by the events of 9/11, the state has actively pursued policies aimed at consolidating LHDs and establishing state-wide practice standards. The cornerstone has been the creation by the state health department of agencies, or “links,” in each county to coordinate public health preparedness and planning. An important part of this effort has been the recognition of the key role played by LHDs in the delivery of the more traditional public health services, for example, inspections and blood pressure screenings. Meanwhile, “health partnerships” have been established within each county to provide a formal mechanism for convening local health officers, the major purpose being to encourage collaborations in compliance with newly established practice standards that emphasize the central role of *integrated* LHDs. <sup>14</sup>

***Connecticut:*** Like both Massachusetts and New Hampshire, Connecticut statute allows formation of multi-town, or district, health districts. For the past four decades, as a means of enhancing the quality and delivery consistency of its public health services through standardization and economies of scale, the state has actively encouraged the creation of these health districts. Post 9/11 concerns about the threat of bioterrorism have added a new urgency to the effort. A key tool has been the use of financial incentives, namely the annual allocation in state funds of approximately \$2 per capita to towns joining with others into health districts. To-date, some three-quarters of all municipalities have joined into 19 separate health districts, ranging in size from two to 19 towns. The

process continues, and officials anticipate there being a total of some 30 districts within the next two decades.

**Conclusion:**

The paradigm has clearly shifted in New Hampshire, New Jersey, and Connecticut, where concerted efforts are being made to marry the autonomy of local public health delivery capacities with the advantages of greater coordination and synergy among combined local agencies. Financial incentives have played a key role. Notwithstanding the progress that has been made in all three, the path in each has been complicated and delayed by the inevitable realities of funding shortages, personal political agendas, “not invented here” reactions, and a host of other bureaucratic hindrances. But the positive progress in these three traditional home rule states provides positive example to Massachusetts that a meaningful transition to a less balkanized, more holistic approach to public health is possible.

Any viable Massachusetts-wide regional structure will need to be multi-faceted and eclectic, reflecting geopolitical and socio-economic divisions as well as the various regional schemes already in existence. The Nashoba, Barnstable, and Franklin collaborations are each providing a useful range of public health services throughout their respective serving areas; other towns might be added to each as a means of further leveraging economies of scale. The public health system of Boston (population 600,000) is an already existing and viable operation, and several other urban centers could form the anchor around which other regional clusters might be structured. Examples include such geopolitical centers as Cambridge, Lowell, Springfield, and Worcester (populations in the 100,000 – 200,000 range), most or all of which have strong public health departments of their own as well as broad networks of public and private health care providers, law enforcement and public safety communities, and educational institutions. Finally, the emergency preparedness regions could provide an overlay for a few additional public health region regions.

Ultimately, making public health delivery more effective and efficient in Massachusetts will entail more than negotiating and setting up regions across the state. Empowering each region with the wherewithal to deliver a full range of public health services will require addressing some fundamentally basic and still unresolved operating issues, including:

- Staffing and training: how does the state move from a heavily volunteer structure to one with a greater degree of professional training and accreditation, especially in the more rural and less prosperous towns of the central and western state?
- Funding: what combination of local assessment, fee-based revenue, state funding, Connecticut-type incentives, and federal grants is appropriate and sufficient to ensure the broadest possible delivery capability?
- Services: should each region have the capacity to provide all of the same core services, or will some inter-regional sharing be appropriate?

The process of regionalization will be neither easy nor quick. But there can be little doubt that Massachusetts is long overdue in providing its citizens a first-rate public health system. And the timing may be opportune -rising concerns about global bio-terrorism, potential pandemic outbreaks, and/or fears of a Katrina-type natural disaster now have the added momentum of a newly elected governor, a newly appointed state public health commissioner, and the prospect of other potential regionalization efforts.

### End Notes:

<sup>1</sup> Bernard J. Turnock, *Public Health: What It Is and How It Works* (Gaithersburg, Maryland: Aspen Publishers, Inc., 2001), 142-3.

<sup>2</sup> National Association of County & City Health Officials, *Local Public Health Agency Infrastructure: A Chartbook* (October 2001): 10.

<http://archive.naccho.org/documents/chartbook.html>. (accessed March 15, 2007)

<sup>3</sup> \_\_\_\_\_, *2005 National Profile of Local Health Departments* (2005): 12.

[http://www.naccho.org/topics/infrastructure/documents/NACCHO\\_report\\_final\\_000.pdf](http://www.naccho.org/topics/infrastructure/documents/NACCHO_report_final_000.pdf) (accessed March 19,2007)

<sup>4</sup> \_\_\_\_\_, *2005 National Profile*, 11.

[http://www.naccho.org/topics/infrastructure/documents/NACCHO\\_report\\_final\\_000.pdf](http://www.naccho.org/topics/infrastructure/documents/NACCHO_report_final_000.pdf) (accessed March 21,2007)

<sup>5</sup> Massachusetts General Law, Chapter 111, Sections 26-32.

<http://www.mass.gov/legis/laws/mgl/111-26.htm>. (accessed March 1, 2007)

<sup>6</sup> Massachusetts Department of Public Health, *Report of the Local Health 2000 Commission*, Boston, MA: EOHHS, Commonwealth of Massachusetts (1996): 10-11.

<sup>7</sup> The Commonwealth of Massachusetts, "Independent State Auditor's Report on Certain Activities of the Department of Public Health Food Protection Program: July 1, 2003 Through December 31, 2005, No. 2005-0290-3S, March 26, 2007, pp. ii and 86

<sup>8</sup> National Association of County & City Health Officials, *Local Public Health Agency*, 49-50.

<http://archive.naccho.org/documents/chartbook.html>. (accessed March 15, 2007)

<sup>9</sup> Turnock, *Public Health*, 151.

<sup>10</sup> Glen P. Mays, Megan C. McHugh, Kyumin Shim, Natalie Perry, Dennis Lenaway, Paul K. Halverson, and Ramal Moonesinghe, "Institutional and Economic Determinants of Public Health System Performance," *American Journal of Public Health*, Vol 96, No 3 (March 2006): 523-4.

<sup>11</sup> Massachusetts General Law, Chapter 111, Section 27B.

<http://www.mass.gov/legis/laws/mgl/111-26.htm>. (accessed March 1, 2007)

<sup>12</sup> Mays et al, "Institutional and Economic Determinants," 529.

<sup>13</sup> The Robert Wood Johnson Foundation, "Crafting a Restructured Environment" (undated): 1-3, 10.

<http://www.msnj.org/pdfs/PublicHealthCAREReport.pdf> (accessed March 23, 2007)

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<sup>14</sup> State of New Jersey, “Public Health Practice Standards of Performance for Local Boards of Health in New Jersey” (effective February 18, 2003): 52-2.  
[http://www.state.nj.us/health/lh/chapter\\_52.pdf](http://www.state.nj.us/health/lh/chapter_52.pdf) (accessed March 25, 2007)