

Building Skills for a More Strategic Public Health Workforce: A Call to Action

National Consortium for Public Health
Workforce Development



Executive Summary

State and local governmental public health agencies have long played a critical role in improving our nation's health by saving lives and making communities healthier. In the 20th century, public health innovations in workplace safety, injury prevention, and other community-level improvements led to a 25-year increase in life expectancy (Centers for Disease Control and Prevention (CDC), 2011).

New economic forces, a changing policy environment, and increasing demands to address chronic diseases coupled with significant transitions in the governmental public health workforce—cumulative job losses, significant impending turnover, and a rapidly advancing technological environment—are reshaping the role of governmental public health. To achieve continued and expanded impact on community health, the public health workforce must respond by “boldly expand[ing] the scope and reach of public health to address all factors that promote health and well-being including those related to economic development, education, transportation, food, environment, and housing” (DeSalvo et al. 2016).

THE NEED FOR STRATEGIC SKILLS

The public health workforce includes many highly specialized and knowledgeable experts in distinct scientific disciplines (such as, epidemiology, laboratory sciences, chronic disease prevention, maternal and child health, environmental health, and injury and violence prevention) serving as the foundation for many disease response efforts. However, while continued excellence in core scientific disciplines is a priority, the governmental public health workforce increasingly requires strategic skills (Figure 1) that allow them to transcend traditional public health disciplines to meet the evolving needs of the public. The governmental public health workforce will need to bolster its programmatic and scientific capacities with a broader set of skills and knowledge that support the multi-sector vision setting and leadership needed to address the social, community-based, and economic determinants of health. A more integrative approach is needed to effectively manage initiatives, engage across sectors, and influence key factors that affect health in communities. The governmental public health workforce needs to develop strategic skills that complement its existing discipline-specific expertise with an ability to gain and apply knowledge from experts in other disciplines such as transportation, agriculture, and housing. While many of these skills are not unique to public health, they are critical to the sustainability of governmental public health at all levels.

FIGURE 1.

Strategic Skills for the Governmental Public Health Workforce

SYSTEMS THINKING

CHANGE MANAGEMENT

PERSUASIVE COMMUNICATION

DATA ANALYTICS

PROBLEM SOLVING

DIVERSITY AND INCLUSION

RESOURCE MANAGEMENT

POLICY ENGAGEMENT

NEW STRATEGIES AND COMMITMENTS

The National Consortium for Public Health Workforce Development, established by the de Beaumont Foundation, convened public health leaders from more than 30 national public health membership associations, federal agencies, and public health workforce peer networks to identify areas of alignment among their priorities.

Based on a strong consensus among Consortium members, this Call to Action urges prioritization of the development of these strategic skills that complement the specialized skills and knowledge present in the governmental public health workforce.

Public health leaders—state, local, tribal, and territorial health officials; philanthropic and federal funders; academic institutions, and others—must work together to identify, incentivize, and implement new workforce development strategies that move beyond our core scientific disciplines. To facilitate achieving this Call to Action, the Consortium developed five recommendations that are essential to prioritizing strategic skills among the public health workforce:

- 1. Elevate strategic skills to equal status with specialized skills.** Since these skills are just as important to public health success as discipline-specific skills, workplace policies and practices and academic programs must treat them with parity.
- 2. Invest in strategic skill development.** Federal and other funders must actively recognize the importance of strategic skills and support grant recipients' efforts to develop them.
- 3. Build systems, not silos.** Strategic skills are vital to effective public health performance across sectors. To have an impact on population health, officials at all levels must seek to cultivate the skills that enable better communication, management, and collaboration.
- 4. Develop effective and engaging training.** New training programs and expertise must fill the current gaps. Public health agencies and funders must work with academic programs and other partners to develop and deliver high-quality training in strategic skills.
- 5. Create a coordinating mechanism.** We need an ongoing mechanism for developing strategy and coordinating specific steps to make strategic skills a reality across the country. This cannot be a "set-and-forget" initiative.

The Changing Landscape

Throughout the 20th century the major causes of morbidity and mortality in the United States changed significantly. Noncommunicable diseases accounted for one fifth of all US deaths at the start of the 20th century (Frieden, 2004). However, by the end of the century, chronic disease accounted for 80% of all US deaths (Frieden, 2004). The increase in chronic disease prevalence, coupled with an aging population, contributed to a substantial increase in healthcare costs for the US: since 1960, these expenditures have grown five times faster than the nation's GDP (Graham, 2016). The increasing burden of chronic disease is not the result of a new virus or bacteria, but rather a confluence of social and community factors that include:

- the distribution of social and economic opportunities;
- the availability of resources and supports in our homes, neighborhoods, and communities;
- the quality of our schooling;
- the safety of our workplaces;
- the cleanliness of our water, food, and air.

If the nation's health is to continue to improve, governmental public health agencies must continue to be effective at what they currently do well, but they must also find strategies and opportunities to influence other sectors to regard population health as a mutually beneficial goal. This will require new skills that complement the traditional skills found among the governmental public health workforce and enable them to link perspectives and learn from other specialties to tackle

today's pressing community health challenges. However, these skills are not currently prioritized in the workforce or represented in most curricula in schools and programs of public health.

NEW SKILLS FOR CHANGING NEEDS

The de Beaumont Foundation has focused attention and resources on the governmental public health workforce. The Foundation responded to a call from the field to develop a consortium that brings together key public health partners and holds them accountable for developing and achieving workforce development goals. The National Consortium for Public Health Workforce Development, which includes 34 national partner organizations, was created to communicate the needs of the front line public health worker to national partners and funders (Appendix I). Through a consensus building process, the Consortium identified eight indispensable, high-performance workplace skills applicable to the entire public health workforce regardless of specialty or discipline (Appendix II):

- **Systems thinking:** Grasp patterns and relationships to understand systems contributing to public health problems and identify high-impact interventions.
- **Change management:** Scale programs in response to the changing environments and shape core elements that sustain programs in challenge and crisis.
- **Persuasive communication:** Convey resonant, compelling public health messages to broad audiences—the public, partners, and policymakers.

FIGURE 2.

The Public Health T—Complementing Specialized with Strategic Skills



- **Data analytics:** Leverage, synthesize, and analyze multiple sources of electronic data, and use informatics to identify and act on health priorities, population impacts, evidence-based approaches, and health and cost-related outcomes.
- **Problem solving:** Determine the nature of a problem, identify potential solutions, implement an effective solution, and monitor and evaluate results.
- **Diversity and inclusion:** Understand and respond to the changing demographics of the US population and the public health workforce itself. Seek out, listen to, include, and promote under-represented populations in reaching effective health solutions.
- **Resource management:** Manage recruitment and career paths of the workforce as well as acquisition, retention, and management of fiscal resources.
- **Policy engagement:** Address and engage with public health concerns and needs of local, state, and federal policymakers and partners.

◀Note: In the metaphor of a T-shaped employee, the horizontal bar represents breadth of related skills while the vertical bar represents expertise in a single field (Boynton, 2011).

BUILDING SOLUTIONS

The 1988 Institute of Medicine report, *The Future of Public Health*, called for broad, cross-cutting skills and competencies for public health practitioners. In response, core competencies were developed for public health generally and for specific disciplines within the field of public health (e.g., epidemiology, public health nursing, or preparedness) or specific degree types (e.g., the master of public health). While these competencies have been used, for example, to develop training, job descriptions, and workforce needs assessments, their proliferation has created expansive lists of needed skills, from which discerning priorities have proven difficult.

Public health workforce development efforts have remained mired in traditional, disjointed training solutions heavily loaded toward discipline-based content and outmoded approaches. While maintaining excellence in core scientific disciplines continues to be a priority, developers and deliverers of public health education and training need to act in new and different ways if the governmental public health workforce is to gain competency in the strategic skills needed throughout the entire public health workforce.

For the past decade, scholars, practitioners, and policy makers alike have called for a continued focus on system-wide workforce development. A concerted, coordinated effort to build foundational, high-performance skills that enable success for science-driven solutions for all public health workers and their agencies has been absent. To fill this gap and provide the vision and leadership needed to evolve the skills of the governmental public health workforce, the Consortium membership identified five broad recommendations (along with their implications for public health practice) followed by actions across governmental health agencies, funders, employees, training and development programs, and membership organizations. When implemented, these recommendations could unlock the full potential of the governmental public health workforce in this changing landscape to continue to improve the public's health and contribute to healthier communities.

Recommendations for Workforce Development



Members of The National Consortium for Public Health Workforce Development (See Appendix I for more about the Consortium, the participating organizations, and participating staff) coalesced around a public health-wide need for strategic skills to complement its existing depth of specialized skills. Uptake will require a concerted effort from leaders in the fields of public health, academic training, membership organizations, and funders. To guide this effort, the Consortium developed five recommendations, each of which is essential to achieving this necessary change in the public health workforce.

Elevate the importance of strategic skills.

Since strategic skills are just as important to public health success as specialized, discipline-specific skills, workplace policies and practices must treat them with parity.

FUTURE IMPACT:

- Strategic skills figure prominently in job descriptions, hiring procedures, and succession plans.
- Job performance measures and incentives take strategic skills into account.
- Strategic skills training is a necessary part of accreditation, certification, and continuing education requirements.



Invest in strategic skill development.

Federal and other funders must actively recognize the importance of strategic skills and support grant recipients' efforts to develop them.

FUTURE IMPACT:

- Funding for training to develop strategic skills is a standard part of program design and grant requirements.
- Funders actively look for gaps where these skills are needed and partner to develop programs and grants to fill those gaps.
- Grant applicants include strategic skills development in their requests for funding.
- Policy advocates communicate the importance of strategic skills to governments and agencies.



Build systems, not silos.

Strategic skills are vital to effective public health performance across sectors. To have an impact on population health, officials at all levels must seek to cultivate the skills that enable better communication, management, and collaboration.

FUTURE IMPACT:

- Policies, practices, and cultures that encourage collaboration and partnership replace those that obstruct them.
- Strategic skills are integrated into training-in-place activities, so agencies and employees can put them to work and experience their value.
- Organizations collaborate to create joint training in strategic skills and opportunities to practice them.



Develop effective and engaging training.

New training programs and expertise must fill the current gaps. Public health agencies and funders must work with academic programs and other partners to develop and deliver high-quality training in strategic skills.

FUTURE IMPACT:

- Training is engaging, measurably effective, and useful to working professionals.
- Public health workers at all levels seek out training in strategic skills. These skills help to maximize the workforce's impact on community health improvement and facilitate their professional growth and development.
- Associations and academia prioritize development, measurement, and promotion of new training in strategic skills.
- The new training comes in diverse packages: web-based classes, one-on-one mentoring, just-in-time training, long-term leadership programs, and more.



Create a coordinating mechanism.

We need an ongoing mechanism for developing strategy and coordinating specific steps to make strategic skills a reality across the country. This cannot be a “set-and-forget” initiative.

FUTURE IMPACT:

- Communication about effectiveness and new developments in training is routine—you know what's happening and what's working.
- Training in strategic skills is regularly featured in communications targeting the public health community—such as association newsletters and conference agendas.

Actions

Ensuring the adoption of strategic skills and training necessary to support their development throughout the public health workforce will require a collective effort across the entire training enterprise and governmental public health workforce. The following are a list of potential actions that can be implemented by state, territorial, tribal, and local public health agencies; funders; employees; and training and development programs. These actions are a starting point and represent only a partial list of what could be done to implement the Consortium's recommendations and achieve a workforce well-versed in strategic skills.

STATE, TERRITORIAL, TRIBAL, AND LOCAL PUBLIC HEALTH AGENCIES

1. Include strategic skills in all relevant job descriptions.
2. Include knowledge, skills, and abilities in strategic skills as a preference in hiring.
3. Establish reward systems and incentives for current employees to improve strategic skills.
4. Include strategic skills in performance standards and evaluation metrics for all relevant employees.
5. Ensure that strategic skills are reflected in needs assessments of public health workforce development skills across disciplines and job positions.
6. Establish policies and practices to ensure that employees are provided with time and other support to take advantage of available training.
7. Recognize that the development of strategic skills is needed to prepare staff for public health agency accreditation and is a by-product of successful accreditation.
8. Establish workforce policies and practices that encourage training and development, retention of key staff, and succession/transition planning to ensure continuity.

FUNDERS

1. Support the development and demonstration of strategic workforce development skills by highlighting and leveraging expectations within national standards (e.g. Public Health Accreditation Board), programmatic requirements, and grant requirements.
2. Maintain and continue to build training in strategic skills into programs like the CDC's Public Health Associate Program and Epidemic Intelligence Service, the Public Health Foundation's TRAIN learning management system, and others, in order to reinforce the importance of these skills and to build future leadership in public health.
3. Include strategic skills training as an allowable expense in all federal grants.
4. Support the development of high quality training, including strategic skills training, and identify programs and locations where such training is still needed.
5. Develop a joint approach for coordinating federal support for strategic training.
6. Dedicate specific resources to allow public health training centers and state and local governmental public health agencies to develop and deploy training programs that focus on strategic skills.

EMPLOYEES

1. Access available training resources to find and complete training on strategic skills.
2. Prioritize training on strategic skills and experience in performance reviews and promote broad agency support.
3. Advocate for support of strategic skills as a component of all grant applications.
4. Encourage peer learning and cross-training.

TRAINING AND DEVELOPMENT PROGRAMS

1. Develop and organize academic curricular offerings within academic public health programs for public health worker preparation in strategic skills.
2. Focus on the development of strategic skills in training-in-place activities and programs (e.g., academic and public health agency partnerships) for existing staff, especially people moving up the supervisory ladder.
3. Follow quality learning standards that are designed to engage adult learners.
4. Align vetted training plans across learning management systems that include strategic skills to enable governmental public health agencies and individuals to identify high-quality training (both content and method of delivery).
5. Build continuous education and skills-building options available in the workplace through mentoring, just-in-time training, web-based training, etc.
6. Include strategic skills as a key component of all leadership training programs.

MEMBERSHIP ASSOCIATIONS

1. Actively coordinate and promote the development of specific strategic skills development training.
2. Include strategic skills as a key component of association programs, such as new member orientations, annual conferences, and workforce development activities.
3. Advance the expectation that members of discipline-based organizations should develop skills in these strategic areas and participate in efforts to advance such training among peers.
4. Ensure that all member surveys and training needs assessments include an evaluation of strategic skills.

BUILDING MOMENTUM—WHAT'S NEXT?

The call to prioritize the development of strategic skills builds on existing momentum. Some examples of this momentum include:

- The Public Health Accreditation Board, through national voluntary public health accreditation standards, requires training and job descriptions that address strategic skills.
- The Council on Linkages Between Academia and Public Health Practice's Core Competencies for Public Health Professionals reflect many of the strategic skills identified here.
- The Association of Schools and Programs of Public Health's Framing the Future Initiative convened experts from practice and academia to explore issues related to education in public health. The influence of this work is seen in the updated (2016) standards from the Council for Education in Public Health that require accredited schools and programs of public health to integrate strategic skills into their curricula.

Consortium members possess the capacity and tools needed to add to this momentum and heed this call to action. Others, particularly funders and developers of training, are encouraged to support projects underway that contribute to the development of strategic skills throughout the public health workforce.

National Consortium Members

Organizational Members of the National Consortium for Public Health Workforce Development

NATIONAL MEMBERSHIP ORGANIZATIONS

American Public Health Association
Association of Health Facility Survey Agencies
Association of Maternal and Child Health Programs
Association of Public Health Laboratories
Association of Public Health Nurses
Association of Schools and Programs of Public Health
Association of State and Territorial Dental Directors
Association of State and Territorial Health Liaison Officials
Association of State and Territorial Health Officials
Association of State and Territorial Public Health
Nutrition Directors
Council of State and Territorial Epidemiologists
Directors of Health Promotion and Education
National Association of Chronic Disease Directors
National Association of County and City Health Officials
National Association for Public Health Statistics and
Information Systems
National Association of State EMS Officials
National Association of State and Territorial AIDS Directors
National Leadership Network
National Leadership Academy for the Public's Health
National Network of Public Health Institutes
National Public Health Information Coalition
Public Health Foundation
Safe States Alliance

FEDERAL PARTNERS

Centers for Disease Control and Prevention
Health Resources and Services Administration

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS PEER NETWORKS

Accreditation Coordinators
Chief Financial Officers
Environmental Health Directors
Human Resources Directors
Informatics Directors
Preparedness Directors
Primary Care Directors
Senior Deputies
State Legislative Directors/Legal Counsel

About the Consortium

The National Consortium for Workforce Development

includes 34 national public health membership associations, federal agencies, and public health workforce peer networks. These organizations represent current and future governmental public health workers and workforce development interests across the federal, state, and local public health enterprise.

The de Beaumont Foundation convened these organizations to:

- Review and evaluate national assets on public health workforce development
- Issue this call to action for a renewed commitment to public health workforce development at the federal, state, and local levels

The recommendations presented in this report were informed by a consensus building meeting in 2013 (Kaufman et al., 2014) and a national survey of the public health workforce conducted in 2014 (Sellers et al., 2015). Using these resources, the Consortium met virtually and in-person throughout 2015 to review and discuss the importance of an emerging set of strategic skills for the public health workforce and how, if implemented, these skills could impact the public health workforce.

MEMBERS OF NATIONAL ORGANIZATIONS WHO HAVE PARTICIPATED IN NATIONAL CONSORTIUM MEETINGS INCLUDE THE FOLLOWING PUBLIC HEALTH PROFESSIONALS:

American Public Health Association

Wendy Braund
Annette Ferebee
Mighty Fine
Susan Polan

Association of Health Facility Survey Agencies

Darleen Bartz

Association of Maternal and Child Health Programs

Sharron Corle

Association of Public Health Laboratories

Christine Bean
Scott Becker
Eva Perlman

Association of Public Health Nurses

Shirley Orr
Sharon Stanley

Association of Schools and Programs of Public Health

Allison Foster
Rita Kelliher
Harrison Spencer

Association of State Public Health Nutritionists

Karen Probert

Association of State and Territorial Dental Directors

Don Marianos

Association of State and Territorial Health Liaison Officials

Debra Burns

Association of State and Territorial Health Officials

Gerrit Bakker
Joya Coffman
Karl Ensign
Andrea Garcia
Elizabeth Harper
Donna Marshall
Anita Samuel
Katie Sellers
Monica Valdes Lupi
Kerry Wyss

Council of State and Territorial Epidemiologists

Jeff Engel

Centers for Disease Control and Prevention

Gabrielle Benenson
Fatima Coronado
Liza Corso
Eric Kasowski
Judy Monroe
Pattie Simone
Craig Thomas

Directors of Health Promotion and Education

Susan Goekler
Danielle Kenneweg

Health Resources and Services Administration

Mary Beth Bigley
Laura Kavanaugh
Sarah Linde
Deborah Parham Hopson
Lauren Raskin Ramos
Julia Sheen-Aaron

National Association of Chronic Disease Directors

Frank Bright
John Robitscher

National Association of County and City Health Officials

Ashley Edmiston

National Association for Public Health Statistics and Information Systems

Shawna Webster

National Association of State EMS Officers

Paul Patrick

National Leadership Academy for the Public's Health

Karya Lustig
Carmen Rita Nevarez

National Leadership Network

Kate Wright

National Network of Public Health Institutes

Chris Kinabrew
Vincent Lafronza
Jennifer McKeever
Christina Welter

National Public Health Information Coalition

Monique Davis
John Silcox

Public Health Foundation

Kathleen Amos
Ron Bialek

Safe States Alliance

Carolyn Fowler
Amber Williams

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS PEER NETWORKS

Accreditation Coordinators

Joy Harris

Informatics Directors

Jamie Howgate

Chief Financial Officers

Brenda Weisz

Preparedness Directors

Cheryl Petersen-Kroeber

Environmental Health Directors

Cliff Mitchen

Senior Deputies

Joan Duwve

Human Resources/ Workforce Development Directors

Barbara Wills

State Legislative Liaisons/Legal Counsel

Darryl Klein
Karla Ruest

ACKNOWLEDGEMENTS:

The de Beaumont Foundation would like to thank all of the Consortium members for their participation and comments on earlier drafts of this document. The Foundation would also like to thank Jim Pearsol of Pearsol Consulting, LLC, who served as the lead facilitator for the Consortium and developed the early drafts of this Call to Action.

de Beaumont Foundation staff contributing to this report included Edward L. Hunter, President and CEO, and Brian C. Castrucci, Chief Program and Strategy Officer.

Strategic Skills Definitions

Universal strategic skills are essential to all public health workers. These skills are integral to meeting the transformation, technology, partnership, and gap-filling demands of the rapidly-changing world of health improvement and health care. These strategic skills are consistent with the consensus set of Core Competencies for Public Health Professionals and identify training priorities within these competencies where training is needed.

Systems thinking emphasizes looking at patterns and relationships to understand the systems contributing to public health problems and identifying high-impact intervention options. Currently, this is not a common skill set nor are systems approaches incentivized in funding methods. Systems thinking would enable the workforce to focus on meaningful, outcome-based relationships and networks to achieve shared goals, reduce duplication, leverage new resources and utilize existing resources more effectively, and optimize impact via shared risk and other means.

As described in one article, “a systems approach ...is a paradigm or perspective that considers connections among different components, plans for the implications of their interaction, and requires transdisciplinary thinking as well as active engagement of those who have a stake in the outcome to govern the course of change” (Leischow & Milstein, 2006).

Change management means scaling programs up and down or changing them entirely in response to the environment, and identifying core elements to help sustain programs in challenging times. A framework for guiding public health managers in the change management process is crucial to this process (Thompson, 2010). Some of the knowledge, skills, and attitudes needed are:

- Understanding the change process and components of change
- Strong analytics using multiple sources
- Flexibility in working around roadblocks and through evolving priorities
- Recognizing and assessing (disruptive) circumstances
- Finding supportive networks
- Adaptive leadership skills: vision, understanding of change as constant, and effective communication skills

Communicating persuasively is the ability to convey a public health message that resonates with audiences outside of public health. Public health initiatives are fully effective when they engage partners, the general public, the media, and policy makers. Stronger, more persuasive communication is needed at all levels (Regidor et al., 2007).

Data analytics are the skills to leverage, synthesize, and analyze multiple sources of electronic data and use informatics to identify health priorities, select appropriate evidence-based approaches to address those priorities, and determine the effectiveness in reducing costs or improving health outcomes. Leveraging existing public health data systems to meet current and future needs around the upcoming consumer health data explosion and integration and use of “electronic health records” will be essential to accurately forecast emerging public health issues. The push towards “big data” will drive the need for a more highly-trained workforce (Ola & Sedig, 2014).

Problem solving is a key component of the 10 essential public health services, continuous quality improvement, and performance management. It includes the ability to determine the nature of a problem, identify potential solutions, implement an effective solution, and monitor and evaluate results. It is also critical to identify different intervention and prevention strategies or policies to address and set priorities.

Successful problem solving includes understanding barriers to implementation and developing an effective communication strategy. Key considerations include social context and values, cultural perspectives, laws and regulations, politics of public health, and the roles of different interest groups and stakeholders.

Diversity and inclusion go hand-in-hand. Diversity reflects the changing demographics of the US population and the public health workforce itself. Inclusion is the effort to fully incorporate workers representing diverse populations into health solutions. Together, they enable agencies to better relate to the populations they serve (including ones at higher risk of adverse health outcomes), provide a larger recruitment pool, and improve employee retention. A recent report outlines the research needed in support of these skills (Research Center for Leadership in Action, 2011).

Resource management skills are for the acquisition, retention, and management of people and fiscal resources. All levels of the public health workforce would benefit from additional training in financial and resource management skills, including ethics. Financial skills relating to the administration of grants and management of budgets are vital, and there is a continued need for leadership skills, communications skills, and management of teams. The movement towards accreditation of governmental public health agencies means an increased expectation for workforce development in this area.

As described in one article, “a comprehensive set of public health financial management competencies ...can be used to define job descriptions, assess job performance, identify critical gaps in financial analysis, create career paths, and design educational programs” (Honore & Costich, 2009).

Policy engagement refers to the spectrum of skills needed to address public health concerns and needs of local, state, and federal policymakers and partners. Successful public health agencies raise the visibility of public health issues by making legislative work a top priority and building strong relationships with policy makers and partners before crises emerge. As a result, public health leadership is viewed as an important and highly respected resource for policy makers.

By combining this skill with communicating persuasively (a skill listed above), agencies explain complex policy initiatives in a way that is understandable and relevant to the general public.

References

Boynton, A. Are you an “I” or a “T”? *Forbes*. October 18, 2011. Accessed on May 22, 2017 from <https://www.forbes.com/sites/andyboynton/2011/10/18/are-you-an-i-or-a-t/#6e8889346e88>.

Centers for Disease Control and Prevention (CDC). (2011). Ten great public health achievements—united states, 2001-2010. *MMWR.Morbidity and Mortality Weekly Report*, 60(19), 619-623. doi:mm6019a5 [pii]

DeSalvo, K. B., O’Carroll, P. W., Koo, D., Auerbach, J. M., & Monroe, J. A. (2016). Public health 3.0: Time for an upgrade. *American Journal of Public Health*, 106(4), 621-622. doi:10.2105/AJPH.2016.303063 [doi]

Frieden, T. R. (2004). Asleep at the switch: Local public health and chronic disease. *American Journal of Public Health*, 94(12), 2059-2061. doi:94/12/2059 [pii]

Graham, J. (2016). GDP: Health services grow Over five times faster than “sluggish” non-health GDP. Retrieved from <http://healthblog.ncpa.org/gdp-health-services-grow-over-five-times-faster-than-sluggish-non-health-gdp/#sthash.ipGCzF04.dpbs>

Honore, P. A., & Costich, J. F. (2009). Public health financial management competencies. *Journal of Public Health Management and Practice : JPHMP*, 15(4), 311-318. doi:10.1097/PHH.0b013e31819c1308 [doi]

Kaufman, N. J., Castrucci, B. C., Pearsol, J., Leider, J. P., Sellers, K., Kaufman, I. R., Sprague, J. B. (2014). Thinking beyond the silos: Emerging priorities in workforce development for state and local government public health agencies. *Journal of Public Health Management and Practice : JPHMP*, 20(6), 557-565. doi:10.1097/PHH.000000000000076 [doi]

Leischow, S. J., & Milstein, B. (2006). Systems thinking and modeling for public health practice. *American Journal of Public Health*, 96(3), 403-405. doi:AJPH.2005.082842 [pii]

Ola, O., & Sedig, K. (2014). The challenge of big data in public health: An opportunity for visual analytics. *Online Journal of Public Health Informatics*, 5(3), 223. doi:10.5210/ojphi.v5i3.4933 [doi]

Public Health Leadership Forum. (2014). The high achieving governmental health department in 2020 as the community chief health strategist. Retrieved from <http://www.resolv.org/site-healthleadershipforum/files/2014/05/The-High-Achieving-Governmental-Health-Department-as-the-Chief-Health-Strategist-by-2020-Final1.pdf>

Regidor, E., de la Fuente, L., Gutierrez-Fisac, J. L., de Mateo, S., Pascual, C., Sanchez-Paya, J., & Ronda, E. (2007). The role of the public health official in communicating public health information. *American Journal of Public Health*, 97 Suppl 1, S93-7. doi:AJPH.2006.094623 [pii]

Research Center for Leadership in Action. (2011). Leadership, diversity, and inclusion: Insights from scholarship. Retrieved from <http://wagner.nyu.edu/files/leadership/LeadershipDiversityInclusionScholarship.pdf>

Sellers, K., Leider, J. P., Harper, E., Castrucci, B. C., Bharthapudi, K., Liss-Levinson, R., . . . Hunter, E. L. (2015). The public health workforce interests and needs survey: The first national survey of state health agency employees. *Journal of Public Health Management and Practice : JPHMP*, 21 Suppl 6, S13-27. doi:10.1097/PHH.0000000000000331 [doi]

Thompson, J. M. (2010). Understanding and managing organizational change: Implications for public health management. *Journal of Public Health Management and Practice : JPHMP*, 16(2), 167-173. doi:10.1097/PHH.0b013e3181c8cb51 [doi]



de Beaumont
FOUNDATION

7501 Wisconsin Avenue | Suite 1310E | Bethesda, MD 20814

P: 301.961.5800 | **F:** 301.961.5802

deBeaumont.org  @debeaumontfndtn