CSTE
Council of State and Territorial Epidemiologists

COUNCIL OF STATE AND TERRITORIAL EPIDEMIOLOGISTS

2009 ECA RESULTS IN BRIEF: ENVIRONMENTAL HEALTH

BACKGROUND

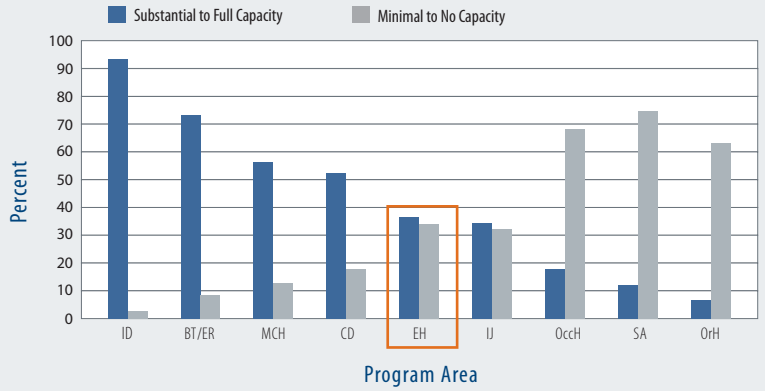
The 2009 CSTE Epidemiology Capacity Assessment (ECA) aimed to complete the periodic enumeration and description of epidemiologists nationwide and to measure the current status of core epidemiology capacity. Measures of capacity included total number of epidemiologists and self-assessment of the state's ability to carry out four essential services of public health (ESPH):

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and hazards in the community.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

Estimates of capacity were categorized as follows:

- Full capacity = 100% of the activity, knowledge, or resources described within the ESPH are met
- Almost full = 75%-99%
- Substantial = 50%-74%
- Partial = 25%-49%
- Minimal = some, but <25%
- None = 0

Figure 1. Epidemiology and surveillance capacity, by program area—2009 Epidemiology Capacity Assessment, 50 states and District of Columbia



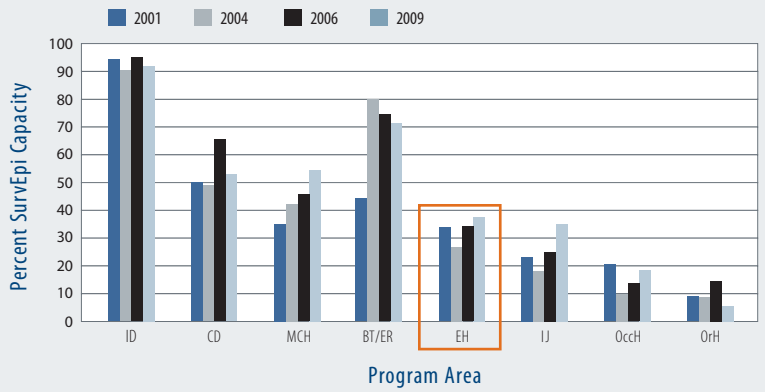
PROGRAM-LEVEL EPIDEMIOLOGY AND SURVEILLANCE CAPACITY

Epidemiology and surveillance capacity varied by program area within health departments. More than 30% of states reported minimal to no epidemiology and surveillance capacity for five program areas including **environmental health**, injury, occupational health, oral health, and substance abuse. For four program areas—infectious diseases, BT/ER, MCH, and chronic diseases—most respondents indicated substantial to full capacity. For **environmental health**, 63% of respondents indicated none to partial capacity while 37% of respondents indicated substantial to full capacity (Figure 1).

Surveillance and epidemiology capacity has fluctuated in most program areas during the past 9 years – including **environmental health,** in which the number of respondents reporting substantial to full capacity has increased slightly (Figure 2).

After a reduction in the total number of epidemiologists by 2.5% from 2004 to 2006, the number further decreased 10% from 2006 to 2009, and the number per 100,000 population decreased by 12%.

Figure 2. Surveillance and epidemiology capacity, by program area—2001, 2004, 2006, and 2009 Epidemiology Capacity Assessments†



†N = 40 agencies in 2001; 54 agencies in 2004; 54 agencies in 2006; and 51 agencies in 2009

LEAD EPIDEMIOLOGIST

The 2009 ECA asked whether states had a formal lead epidemiologist for each program area, which could include the State Epidemiologist. Program areas in which at least 50% of states reported a lead epidemiologist were infectious diseases, chronic diseases, maternal and child health, bioterrorism/emergency response, **environmental health** and injury (Figure 3). States that had a designated lead program area epidemiologist were more likely than states without one to have substantial to full epidemiology/surveillance capacity in that area, including **environmental health**.

EPIDEMIOLOGY TRAINING

A total of 1,544 responding epidemiologists described their level of academic training in epidemiology by program area. The most common epidemiology training was an MPH, MSPH, or other master's degree (38.0%). Approximately 87% of all epidemiologists had received some formal epidemiology training. Similarly, 86.8% of all epidemiologists in **environmental health** had some formal epidemiology training (Table 1).

ESTIMATED NEED FOR ADDITIONAL EPIDEMIOLOGISTS

Based on responses from 36 state epidemiologists, 1,490 additional epidemiologists (a 68% increase) are needed to achieve ideal epidemiology capacity (Figure 4).

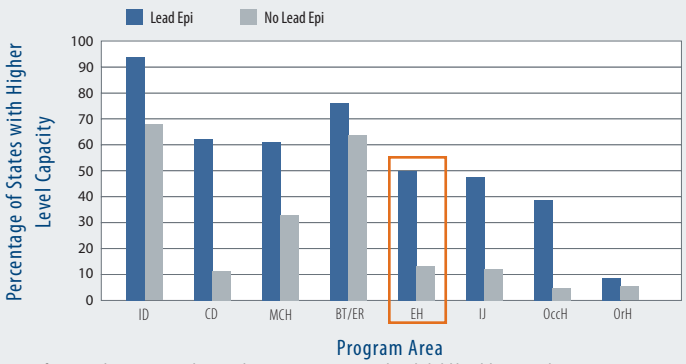
Each program area was deemed to need >60 additional epidemiologists to achieve full capacity to carry out the four epidemiology-related ESPH. **Environmental health** needs were estimated to be almost 200 additional epidemiologists while the other four of five program areas in which <50% of states had even substantial capacity (i.e., injury, occupational health, substance abuse, and oral health) needed relatively small numbers of additional epidemiologists (60–100 each) to reach full capacity, compared with other, more established program areas (Figure 4).

Table 1. Epidemiology training of persons* working as epidemiologists in state health departments, by program area† and level of epidemiology training—2009 Epidemiology Capacity Assessment (N = 1544)

LEVEL OF EPIDEMIOLOGY TRAINING	PROGRAM AREA									
	ID		CD		BT/ER		MCH		EH	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. PhD, DrPH, other doctoral degree in epidemiology	39.3	5.1	20.8	11.8	7.8	6.3	24.5	17.0	12.0	10.2
2. Professional background (e.g., MD, DO, DVM, DDS) with a dual degree in epidemiology	95.3	12.4	10.0	5.6	21.3	17.2	11.3	7.8	6.0	5.1
3. MPH, MSPH, other master's degree in epidemiology	317.2	41.2	66.1	37.3	45.8	37.0	42.8	29.7	46.5	39.6
4. BA, BS, other bachelor's degree in epidemiology	7.5	1.0	1	0.6	0.5	0.4	1	0.7	2.0	1.7
5. Completed formal training program in epidemiology (e.g., EIS)	56.3	7.3	8.5	4.8	14.3	11.6	8.3	5.8	5.8	5.0
6. Completed some coursework in epidemiology	163.8	14	43.6	24.6	21.3	17.2	35.3	24.5	29.5	25.2
7. Received on-the-job training in epidemiology	81.5	21.3	24	13.6	12	9.7	18	12.5	13.5	11.5
8. No formal training in epidemiology (i.e., epidemiologist does not fit in any of the above categories)	9	1.2	3.0	1.7	1	0.8	3	2.1	2	1.7
TOTAL	769.8	100	177.0	100	123.8	100	144.2	100	117.3	100

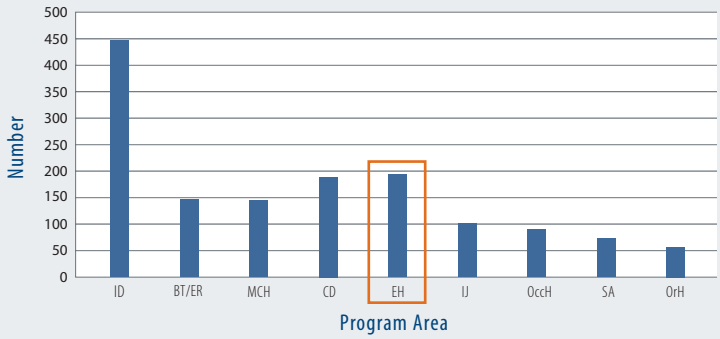
* Persons are expressed as full-time equivalent positions, resulting in fractions of persons whose positions are split between 2 or more program areas.
† Includes 141 "Other" that are not shown. ID: infectious diseases; CD: chronic disease; BT/ER: bioterrorism/emergency response; MCH: maternal and child health; EH: environmental health; IJ: injury; OccH: occupational health; SA: substance abuse; OrH: oral health.

Figure 3. Percentage of states with substantial to full epidemiology and surveillance capacity, by program area* and presence of a lead program area epidemiologist—2009 Epidemiology Capacity Assessment, 50 states and District of Columbia



* ID: infectious diseases; CD: chronic disease; MCH: maternal and child health; BT/ER: bioterrorism/emergency response; EH: environmental health; IJ: injury; OccH: occupational health; SA: substance abuse; OrH: oral health.

Figure 4. Additional number of epidemiologists needed, by program area*—2009 Epidemiology Capacity Assessment, 36 jurisdictions



*ID: infectious diseases; BT/ER: bioterrorism/emergency response; MCH: maternal and child health; CD: chronic diseases; EH: environmental health; IJ: injury; OccH: occupational health; SA: substance abuse; OrH: oral health.

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