Traveling down the pathway of competency-based online trainings: Helping learners navigate to meet targeted training needs

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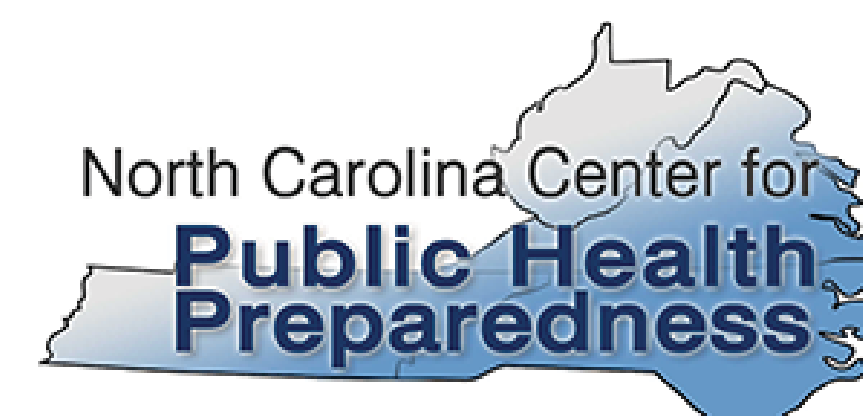
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Introduction

The North Carolina Center for Public Health Preparedness (NCCPHP) Training Web Site (TWS) offers immediate access to more than 175 short high-quality trainings in public health preparedness topics developed by NCCPHP. Since the TWS was launched in February 2003, more than 70,800 trainings have been completed by more than 18,000 individuals.

Since 2004, TWS trainings have been linked to adapted forms of core public health[1] and bioterrorism and emergency readiness[2] competencies. In 2008, we began an extensive review of the site's competency assignments for several reasons:

1. Demand for online competency-based trainings has increased with new accreditation requirements and decreased budgets for training.

2. Recent feedback indicated that the adapted language of the TWS competencies was causing confusion for participants seeking trainings to meet a specific competency.

3. A new set of applied epidemiology competencies[3] was issued in 2008, and the core public health competencies were anticipated to be updated in 2009[4].

4. A review of competency assignments revealed a wide range of interpretations, indicating a need to revise the assignment process.

North Carolina Center for **Public Health Preparedness**

The North Carolina Center for Public Health Preparedness (NCCPHP) is a program of the North Carolina Institute for Public Health at the University of North Carolina Gillings School of Global Public Health. NCCPHP offers a variety of training activities and technical support to local and state public health agencies.

Methods

NCCPHP developed a methodology for assigning competencies to all TWS trainings, reassigned core public health and emergency readiness competencies, and added the new applied epidemiology competencies.

Competencies used on the Training Web Site

Competency sets used 2004-2008	Competency sets assigned in 2009
Core Competencies for Public Health Professionals [1] [adapted]	Core Competencies for Public Health Professionals, 2009 [4]
Bioterrorism and Emergency Readiness Competencies [2] [adapted]	Bioterrorism and Emergency Readiness Competencies [2]
	Applied Epidemiology Competencies, Tier I and Tier II [3]

Competency Assignment

Competencies were assigned using 2 methods. In the first, competencies were assigned by an individual with appropriate subject matter expertise, then forwarded to a succession of reviewers as shown below. In the second, a committee of at least 3 individuals with subject matter expertise assigned the competencies. For both methods, learning objectives and training content were used to guide assignment.

Competency assignment methods
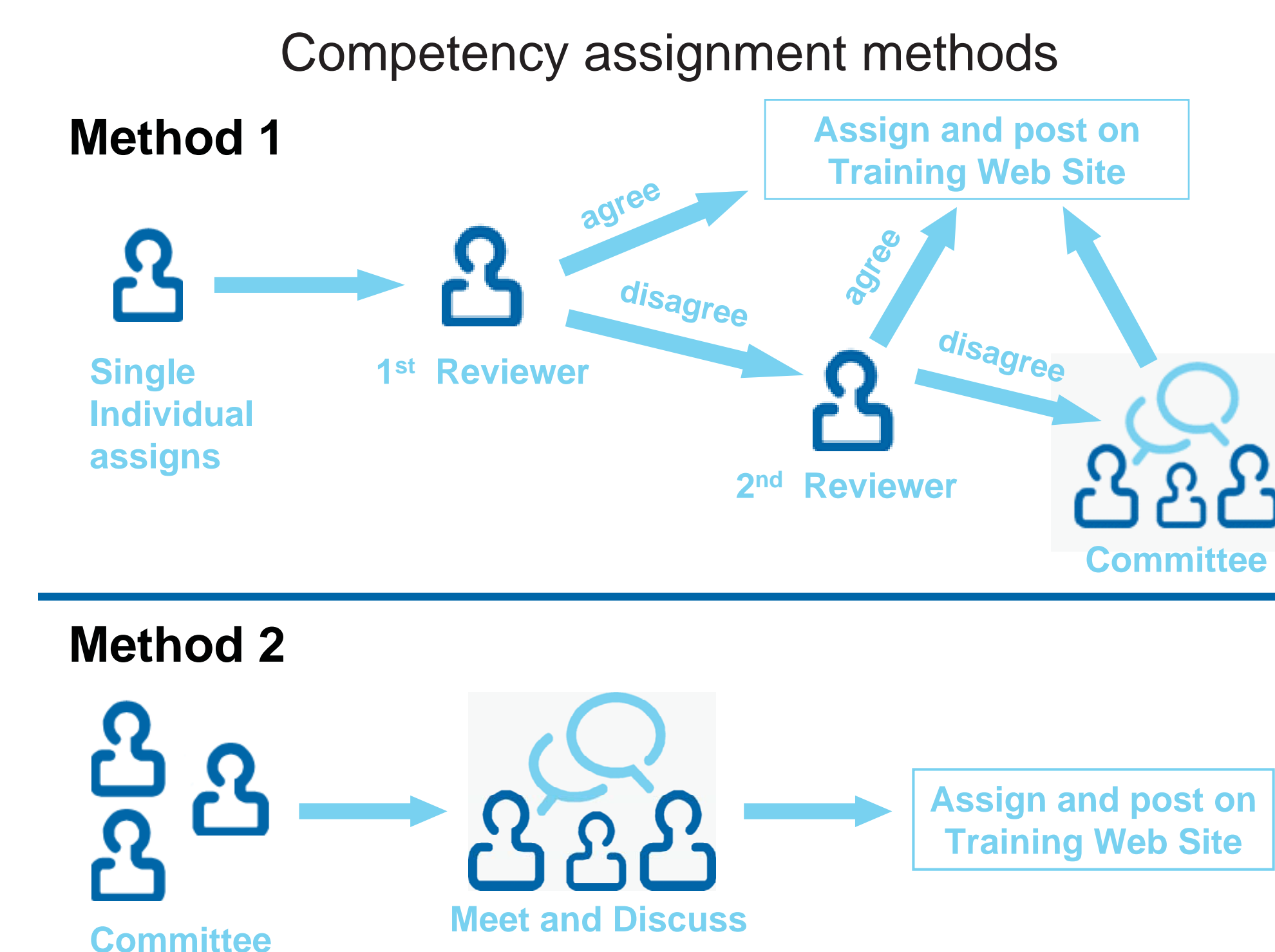
Competency Display

Because the structure of each competency set was so different, the format used to display competencies had to be revised.

For example, there are 9 emergency readiness competencies, while the applied epidemiology competencies have a multi-layered complexity that includes skill domains, high level competencies, and sub-competency categories containing a varied number of competencies.

Competencies assigned to each training are dynamically displayed to users. Each competency includes any specific category, subcategory, or numbering from the original competency set.

Example of a training competency display
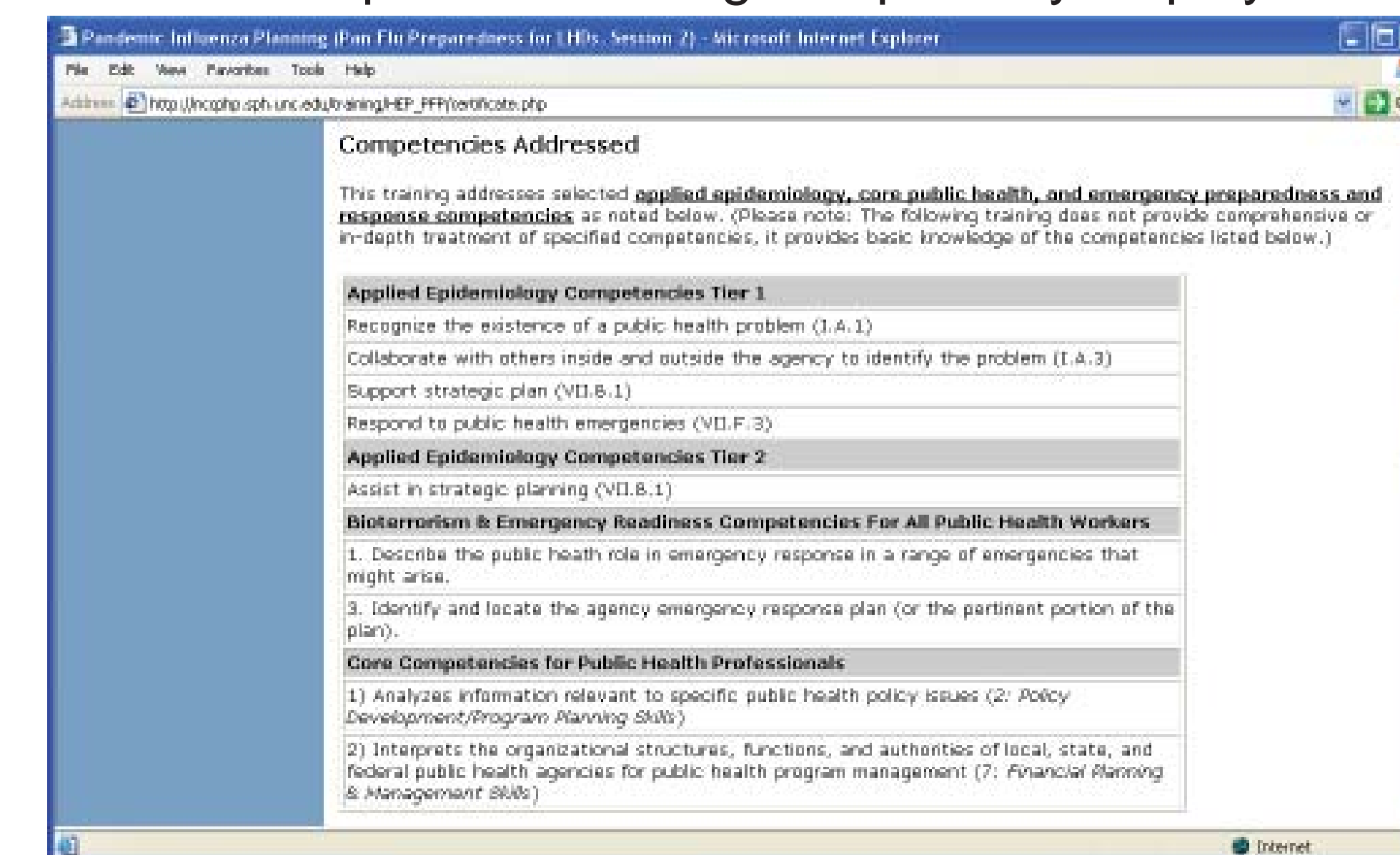
Site Navigation

A new search feature was added to the TWS navigation to clearly identify individual competencies and competency sets so that TWS users can quickly identify whether a training will address their specific training needs.

This search tool offers clickable lists of competencies that present trainings linked to each selected competency.

**Visit the Training Web Site at
http://nccphp.sph.unc.edu/training/**

Results

All TWS trainings were assigned at least one applicable competency: 78 trainings (44.6%) were linked to a single competency set, 85 trainings (48.6%) were linked to 2 competency sets, and 12 trainings (6.9%) were linked to all 3 competency sets used by the TWS.

Figure 4 shows the breakdown of competencies assigned across trainings. Core public health competencies were assigned to 90% of trainings (n=158), while competencies from the other 2 sets were each assigned to nearly one-third of trainings.

Trainings assigned to each competency set
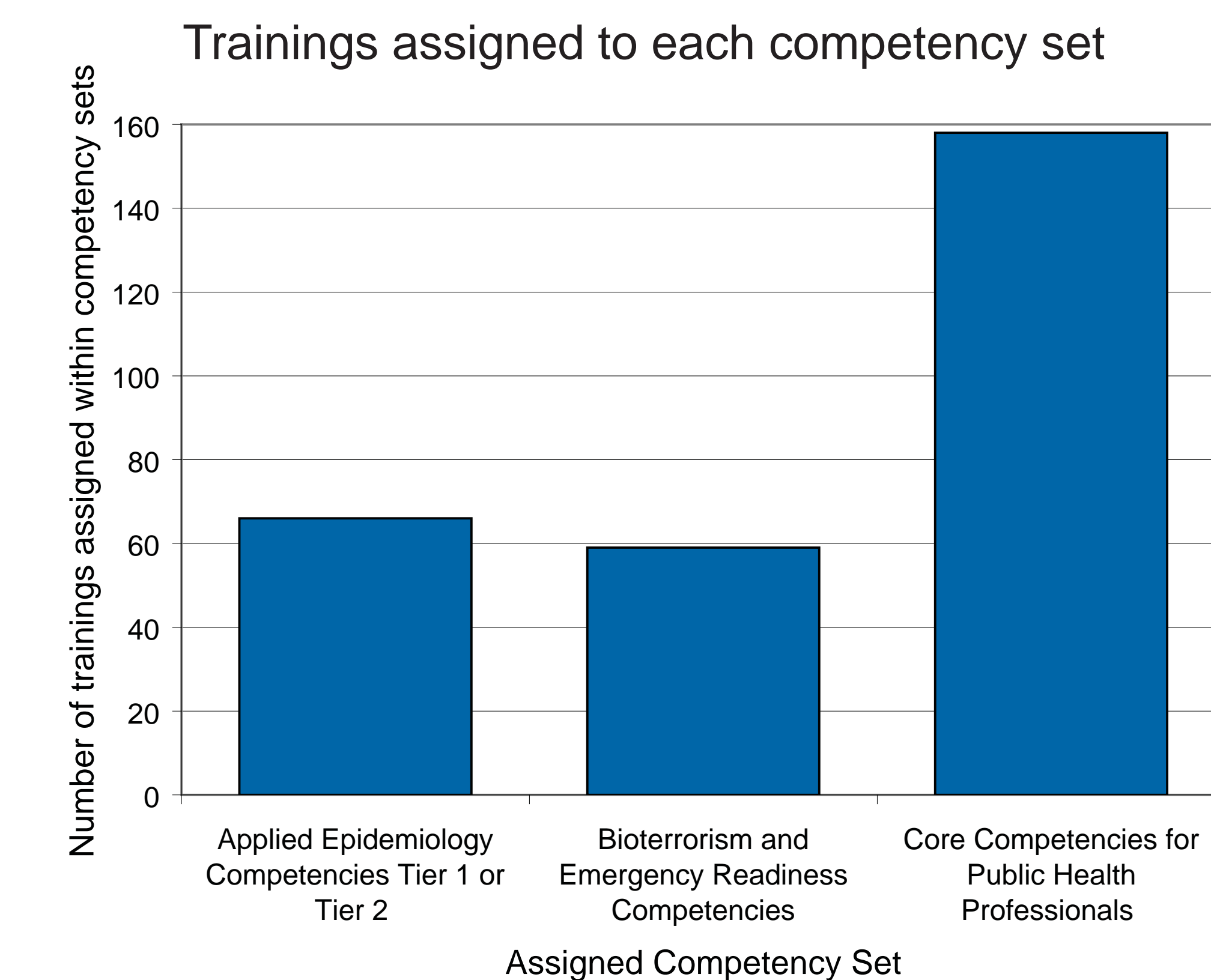
References

1. Council on Linkages Between Academia and Practice. Core competencies for public health professionals: a practical tool to strengthen the public health workforce. *The Link* 2001;15(2):1-3.
2. Gebbie K, Merrill J. Public health worker competencies for emergency response. *J Public Health Manage Practice*, 2002;8(3):73-81.
3. Council of State and Territorial Epidemiologists. CDC/CSTE development of applied competencies. Available at: http://www.cste.org/competencyetencies.asp. Accessed May 6, 2009.
4. Council on Linkages. Core competencies for public health professionals adopted June 11, 2009. Available at: http://www.phf.org/link/Core-Competencyetencies-for-Public-Health-Professionals-ADOPTED-061109.pdf. Accessed July 20, 2009.
5. Anderson LW, Krathwohl DR, Airasian PW. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy for Educational Objectives*. New York, NY: Longman; 2001.

Lessons Learned

Applying Competencies to Trainings – Wording of competencies often reflects skills to be acquired or demonstrated. Applying competencies to trainings requires thinking about how/whether a training will help a user acquire a particular skill as described in the competency under review—"Will this training help a user apply this knowledge as worded in the competency?"

Assigning Competencies – Competency assignment by individuals leads to both broad and narrow interpretation of competencies, as well as considerable time to resolve discrepancies among reviewers. Competency assignment by committee allows for a more efficient and balanced competency assignment. Development of an "assignment tool" was necessary to save time. The flexibility of this tool allows new competency sets to be added easily in the future.

Value of Training Learning Objectives – While it was initially conceived that competencies would be assigned based primarily on review of training learning objectives, these proved to be of limited value. Learning objectives, while accurate, did not contain sufficient detail to enable competency assignment. [N.B. As part of the competency assignment process, learning objectives for each training were reviewed to make sure that they were written with suitable verbs associated with the appropriate learning level.[5]]

Presenting Competencies – Due to differences between competency sets, considerable time was devoted to developing appropriate simultaneous display of multiple competencies from more than one competency set.

Identifying Gaps – Assignment of competency sets revealed "gaps" in the TWS training catalog for our areas of expertise. These competency gaps will be examined as we consider which trainings to develop in the future.