Competencies required from public health professionals by health based organisations and the role of academia

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Syed Muslim Abbas (Department of Community Health Sciences, Fatima Memorial Hospital, College of Medicine and Dentistry, Lahore.)
Andrew Lee (School of Health and Related Research, University of Sheffield, UK.)
Hafsa Mubashir (Department of Gynaecology, Fatima Memorial Hospital, College of Medicine and Dentistry, Lahore.)

Abstract

Objective: To examine the complementarity between what is taught in Masters of Public Health courses and real world expectations of practitioner organisations.
Methods: The online survey of academic institutions and health-related organisations from high- and low-/middle-income countries was conducted between May 16 and August 1, 2011. A combination of snowballing and purposive sampling was used to recruit the respondents. The survey questionnaire was devised using a validated competencies framework.
Results: A total of 45 organisations responded to the survey. They were evenly distributed between academic institutions and practitioner organisations, high-income countries and low/middle income ones. There was marked disparity in rating for 14 (22%) of the 63 competencies examined. Practitioner organisations valued practical competencies such as contracting and negotiation skills, whereas academic institutions favoured research-based elements such as critical thinking and data-collection skills. Practitioner organisations also rated less highly course modules such as the dissertation component and research methods.
Conclusions: The lack of congruence between what is taught and what is required could result in public health practitioners being ill-prepared for the demands of the real world. Greater engagement between academic institutions and practitioner organisations is necessary to ensure that Masters of Public Health courses are appropriate and up-to-date.
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Introduction

Public Health practitioners today face a growing range of population health challenges worldwide.[1] These range from the health consequences of demographic change such as the obesity epidemic and aging populations in developed countries, to the colossal burden of ill health resulting from poverty in resource-constrained developing countries. A competent public health workforce and infrastructure is therefore crucial to address these often complex issues.[2] However, not enough is known about how Public Health practitioners are trained globally or whether the training received prepares them adequately.[3,4] In addition, Public Health incidents such as disasters and outbreaks, as well as political changes, means that the challenges faced are not static, but can change considerably in a short time. Professional education and training, therefore, needs to be ready to change to meet new priorities and challenges as they arise.[5]
In an ideal situation, the training and education of public health practitioners should address the requirements of the role to be undertaken. One approach to this is to adopt a competency-based approach to education and training.[6] The American Association of Schools of Public Health (AASPH) has described competencies as 'a unique set of applied knowledge, skills, and other attributes, grounded in theory and evidence, for the broad practice of Public Health.'[7] Different competency frameworks

have been developed for both generic competencies and specific competencies such as for emergency response or public health leadership.[8-11] Such an approach is not new, but has been an integral part of outcome-based education for other health professions such as physical therapy, nursing, dentistry and medical education.[12,13]

This then leads to the question about how do public health practitioners acquire the knowledge and skill competencies required to carry out their job. In many countries, ranging from the United States, United Kingdom to Nigeria, with prescribed post-graduate training schemes for Public Health. In other settings, however, no such training schemes exist and practitioners learn 'on the job'. Increasingly, the Masters in Public Health (MPH) diploma is seen as the pre-requisite qualification for such jobs. However, the MPH is delivered by academic institutions and not Public Health agencies. The MPH curricula of the various academic institutions are likely to differ to some degree. What is less clear is whether what is taught on an MPH matches the competency requirements of 'real-world' conditions.[4] The current study was planned to investigate this very point.

Subjects and Methods:

An online descriptive cross-sectional survey was devised to capture the current views of key stakeholders from academic institutions and practitioner organisations. We defined academic institutions as only those schools that deliver post-graduate Public Health masters-level courses (e.g. MPH or MSc in Public Health). Practitioner organisations were defined as those health and community-based organisations involved in the actual delivery of Public Health advice, interventions and programmes. The survey was conducted between May 16 and August 1, 2011.

Purposive sampling was adopted with the objective of achieving a balance of views from practitioner organisations and academic institutions, and from both high-income and low- and middle-income country (LMIC) settings. The initial sample was identified through existing institutional links with the University of Sheffield and Shifa College of Medicine, Pakistan. Subsequently, further respondents were recruited through snowball sampling, in which the initial participants were asked to voluntarily invite further relevant contacts to participate in this study. Information on the study was sent electronically to potential participants in advance. Consent was obtained from participants in advance as well.

Approval was also obtained in advance from the School of Health and Related Research Ethics.

Two cross-sectional survey questionnaires were developed in advance to examine the various competencies. The questionnaires were devised using a validated competencies list developed by the Council on Linkages Between Academia and Public Health Practice.[14] The questionnaires were essentially identical and consisted of closed questions with multiple answers pertaining to specific competencies. They differed in the sense that the questionnaire for the academic institutions queried the competencies taught, whereas the questionnaire for the practitioner organisations looked at the competencies sought in a Public Health professional. The questionnaires also asked the respondents to rank the value of the various modules taught by various academic institutions. The questionnaires were piloted and modified accordingly before use.

We set out to look for differences in ratings of competencies by the different respondent groups of greater than 10%. This threshold figure was an arbitrary level that we had agreed on a priori. Based on this, for a study precision of ± 15%, the sample size required was 42 (21 responses each from academia and health agencies). Ratings were considered not different if the difference in ratings were less than 10%; marginally different for rating differences between 10-19%; and markedly different if greater than 20%.

Participation was obtained from respondents from academic institutions and practitioner organisations based in India, Pakistan, Saudi Arabia, United Kingdom, United States of America, Nepal and Canada.

Attempts at recruiting respondents from Africa as well as Central and South America proved unsuccessful.

Quantitative data was collected using the online survey tool Survey Monkey.[15] The responses were anonymously collected with no identifiable parameters that would reveal the identities of individual respondents or their institutional origins. The data collected was subsequently transferred into SPSS version 19.0 and analysed descriptively. We were interested in looking for both items with concordant views held by both academic institutions and practitioner organisations, as well as discordant views where one sector valued a particular item more than the other. For the rankings, we worked out the average scores for each item ranked to assist comparisons.

Results

Of the 45 responses, 24 (53%) were from academic institutions and 21 (47%) from practitioner organisations from different countries. There was about an even split between the number of respondents from high as LMICs for both academic institutions and practitioner organisations (Table-1).

Table-1: Respondents by country of origin.

Country	Academic institutions Number (N=24)	Proportion (%)	Practitioner organisations Number (N=21)	Proportion (%)
Canada	1	4.2%	1	4.8%
India	3	12.5%	1	4.8%
Nepal	2	8.3%	0	0.0%
Pakistan	5	20.8%	9	43%
Saudi Arabia	1	4.2%	2	9.5%
United Kingdom	6	25.0%	5	24%
United States	6	25.0%	3	14%

Of the 63 competencies listed (Table-2), Table-2: Rating of competencies by respondents.

Competencies	Academic		Practitioner	
	n	%	n	%
Analytic/Assessment Skills				
Defines a problem	18	75%	17	81%
Determines data uses and limitations	17	71%	15	71%
Selects and defines variables	19	79%	12	57%
Identifies data sources	16	67%	13	62%
Evaluates data and identifies gaps	18	75%	13	62%
Applies ethical principles to data	15	63%	12	57%
Community partnering about data collected	17	71%	12	57%
Makes inferences from data	17	71%	12	57%
Devises interventions and identifies risks/benefits	17	71%	12	57%
Able to collect appropriate data	16	67%	8	38%
Recognizes the role of data for program planning	19	79%	8	38%
Policy Development/Programme Planning Skills				
Collects and interprets information	16	70%	16	80%
Devises clear policy options or statements	16	70%	12	60%
Aware of relevant public health laws and regulations	17	74%	15	75%
Articulates implications of policy	12	52%	10	50%
States expected outcomes of policy	16	70%	10	50%
Utilizescurrentdecisionanalysis techniques	13	57%	14	70%
Decides appropriate actions	16	70%	11	55%
Develops a plan to implement policy	18	78%	13	65%
Translates policy into organization plans and programs	18	78%	9	45%
Prepares and implements emergency response plans	17	74%	7	35%
Develops evaluation programs	18	78%	5	25%
Communication Skills				
Communicates effectively	19	83%	18	88%
Solicits input from relevant partners	18	78%	14	67%
Advocates for public health and resources	15	65%	13	69%
Leads and participates in groups	16	70%	17	81%
Communicates through the media, technology, and networks	16	70%	9	43%
Presents information accurately	17	74%	14	67%
Listens, respects and promotes other perspectives	18	78%	13	62%
Cultural Competency Skills				
Interacts appropriately towards all persons	15	71%	17	81%
Identifies social and cultural factors that determine public health delivery	17	81%	19	91%
Develops and adapts approaches so that they are inclusive of culture	17	81%	13	62%
Understands cultural diversity	15	71%	19	91%
Understands the importance of a diverse workforce	15	71%	12	57%
Community Dimensions of Practice Skills				
Maintains links with key stakeholders	17	74%	17	81%
Utilizes leadership skills to build partnerships	16	70%	15	71%
Collaborates to promote public health	22	96%	18	86%
Understands the role and functions of public and private organizations	17	74%	10	48%
Basic Public Health Sciences Skills				
Understands the role and responsibilities of public health services locally	17	74%	14	67%
Defines health status, determinants and factors influencing prevention and use of health services	19	83%	15	71%
Understands the development of health systems	14	61%	12	57%
Has knowledge and ability to apply public health research methods	19	83%	17	81%
Able to identify and retrieve relevant scientific evidence	18	78%	15	71%
Develops critical thinking	17	74%	10	48%
Financial Planning and Management Skillls				
Develops and presents a budget	14	61%	15	71%
Manages programs within budget constraints	16	70%	17	81%
Applies budgetary processes	12	52%	15	71%
Develops strategies for budget priorities	15	65%	13	62%
Monitors program performance	20	87%	16	76%
Prepares proposals for external funding	17	74%	17	81%
Applies human relation skills to program management	12	52%	13	62%
Manages information systems	16	70%	17	81%
Negotiates and develops contracts for services	7	30%	14	67%
Conducts cost analyses for effectiveness, benefit and utility	10	44%	16	76%
Leadership and Systems Thinking Skills				
Creates a culture of ethical standards	15	65%	16	76%
Helps create key values and shared vision to guide action of the organisation	16	70%	18	86%
Identifies internal and external issues that impact the organisation	17	74%	15	71%
Delivery of essential public health services	16	70%	15	71%
Facilities collaboration with groups and key stakeholders	16	70%	18	86%
Promotes team and organizational learning	20	87%	19	91%
Contributes to organizational performance standards	17	74%	19	91%
Uses legal and political systems to effect change	11	48%	16	76%
Applies organizational theory to professional practice	14	61%	18	86%

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both academic institutions and practitioner organisations agreed on about a third of them (Table-3).

Table-3. Differences in competency ratings by respondents.

Difference in ratings Proportion	Number	
<10%	20	32%
10-19%	29	46%
>20%	14	22%

These included analytical skills such as problem definition and identification of data sources; communication skills; generic public health skills such as public health research methods and the ability to retrieve relevant scientific evidence; the ability to put together funding proposals; and community engagement skills.

There were marginal differences in ratings for 29 (46%) competencies. Some competencies with 'marginal differences' were perceived positively by both sectors to be of value. These included cultural competency skills, defined as the skill to identify social and cultural factors that influence Public Health delivery, programme monitoring skills, and collaborative working with high response rates.

There were notable discrepancies in the value attributed by either the academic institution or practitioner organisation for 14 (22%) competencies. Academic institutions valued more the ability to identify and devise appropriate variables for data collection, as well as an understanding of the utility of data. Conversely, practitioner organisations appeared to rate less critical thinking which is a competency often highly valued by higher education institutions. They were also more interested in more practical competencies such as 'negotiation skills and contracting for services' as well as the ability to conduct cost effectiveness analyses. Similarly, the competency of 'using legal and political systems to effect change 'was more highly regarded by practitioner organisations.

Most of the modules that are usually taught on the Public Health masters courses were rated as important by both the academic institutions and practitioner organisations (Table-4). Research methods, epidemiology, statistics, systematic review and evaluation modules were highly rated by academic institutions in particular. Practitioner organisations favoured modules on communicable disease control, emergency planning and response; health needs assessments, as well as organisational leadership and management.

The modules given lower ratings by the academic institutions were sociology, health economics and geographical information systems. Practitioner organisations similarly also gave lower ratings for those modules, as well as modules in environmental health, Public Health nutrition as well as the dissertation component in particular. The modules where there were more marked differences in ratings were research methods and the dissertation component. These were favoured much more by academic institutions than practitioner organisations.

Discussion

The relationship between what academic institutions deliver, what practitioner organisations require and what Public Health students want and need are not disparate, but are interconnected (Figure).

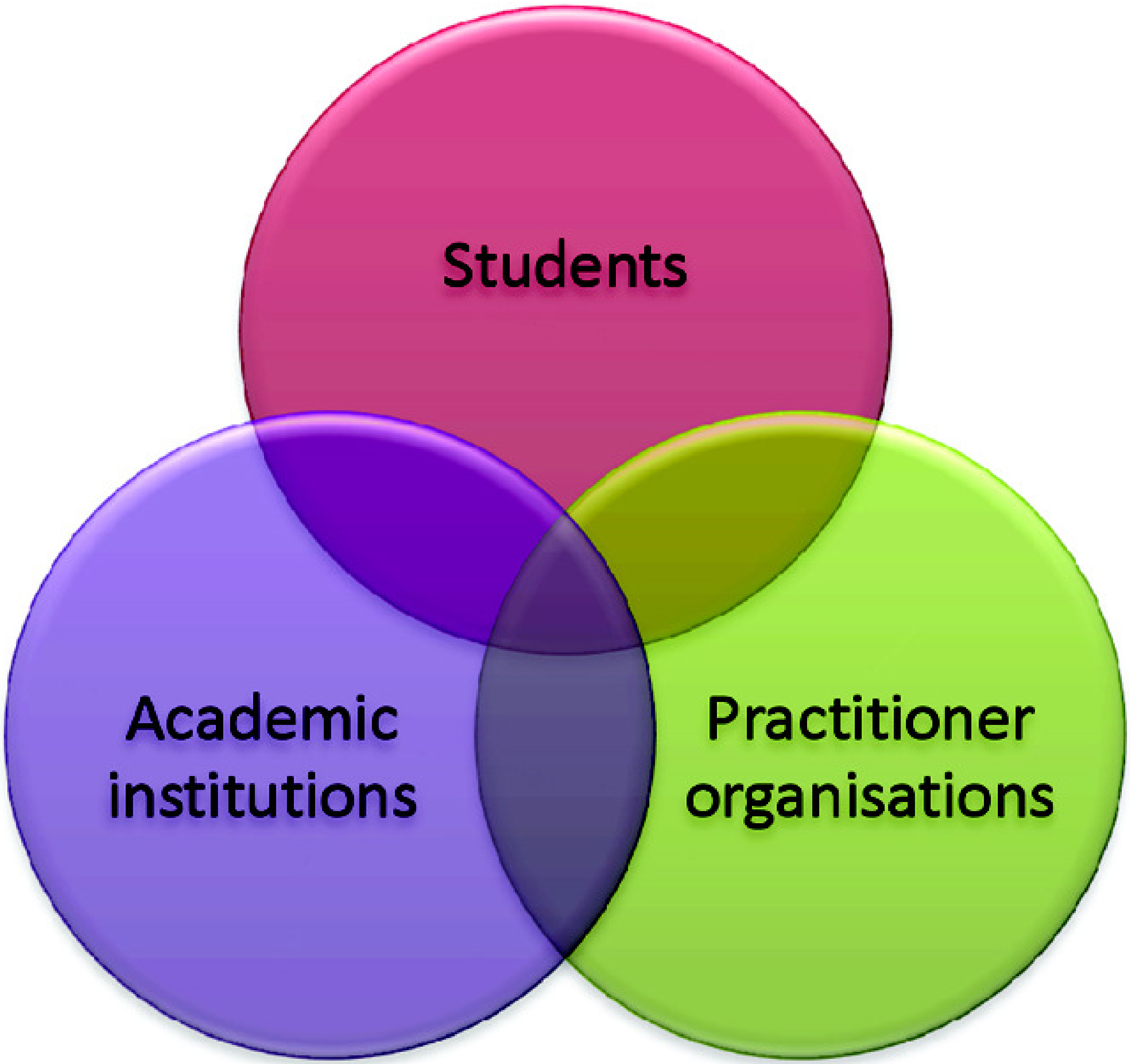

Figure: Venn diagram showing the triad relationship between Academia, Health agencies and Public Health professionals.

It was, therefore, not surprising to find that there was both considerable overlap between what academic institutions and practitioner organisations valued. However, there were also differences which suggested that the three stakeholder may not fully understand their separate requirements and priorities. Academic institutions tended to favour elements that were more akin to research competencies such as critical appraisal, research methodologies and the dissertation component. This could reflect the institutional research priorities and strengths. Practitioner organisations on the other hand favoured applied topics such as communicable disease control and programme management. These may mirror the organisational realities of their responsibilities and functions. This study did not cover the third group, i.e. Public Health students, for whom there is likely to be separate priorities and values that are determined by their individual learning needs. The lack of congruence between what is delivered and what is needed in Public Health education is of concern as it ill-prepares students for the real world. Conversely, greater collaboration between academic institutions and practitioner organisations in training and education has the potential to significantly improve the skills and competence of students.[16]

There is currently a lack of clarity as to whose role it is to deliver Public Health education and training. In some countries, academic institutions providing MPH-type courses serve that purpose. In other countries, such as the UK, professional educational requirements are often merged with practice needs of individual practitioners. This form of education has led to preference for professional credentials rather than for academic achievements.[17] As such, greater value is given to acquired competencies through graduate training and experience. Such competencies provide more transparent and objective parametres for assessing the knowledge and skills of a practitioner.[18] They can also be used by professional organisations, government institutions, employers and stakeholders to design job descriptions and categorisation, to highlight areas for further practitioner development, and report workforce advancements and evolution.[19] However, variation exists between the different training schemes and competency frameworks even within a country.[20] This in turn predicts considerable differences that are likely to be found at international level.[9]

There is, therefore, a need to establish standards in terms of the formulation, development and evaluation of development of the public health workforce, both at the national and international levels.[3,21] Attempts have been made to try and formalise the various competencies expected of a Public Health professional by agencies such as the UK Faculty of Public Health (FPH).[22] There are also existing models used for MPH accreditation such as that used by the Council on Education in Public Health (CEPH)[23] and there is ongoing work on developing Public Health education accreditation in Europe.[24] Whilst they are broadly similar, there is still a lack of an internationally agreed universal set of defined competencies or approaches to Public Health training and education.[1]

This study highlights differences between what academic institutions deliver with what practitioners and their organisations require. If the MPH serves as a foundation course of generic Public Health skills and knowledge, then it should be geared towards Public Health in practice rather than reflect the interests and research biases of academic institutions. On the other hand, if the task of competency training is the sole remit of training schemes, then that calls into question the value and role of academic qualifications such as the MPH. The existing disconnection between academic institutions, practitioner organisations and students serves the needs of all three poorly. The formulation of the MPH syllabus and determination of core modules, therefore, must be sensitive to the requirements of Public Health practice so as to ensure that what is delivered is fit for purpose.[5,7]

This study was not an exhaustive survey of academic institutions and practitioner organisations worldwide. Still, the findings reflect existing disparities between what is taught and what is required. There will undoubtedly be variations between different MPH courses and indeed requirements of practitioner organisations worldwide.[20] The key issue that remains, however, is the need for both stakeholders to better engage in order to achieve greater congruence of purpose.[25] This in turn may help dispel the stereotype of academic institutions as "ivory towers" and could help facilitate better research as well as translation of research into practice.[26]

The questionnaire used was based on competencies as identified and validated by the Council on Linkages between Academia and Public Health Practice. As such, the competencies used may have a North American bias that may not reflect the priorities of other settings such as LMICs. This reiterates the lack of a universally agreed competency list, but also raises the question as to whether the utility and value of competencies are contextually-bound. If the latter is true, this may exacerbate existing academic-practitioner disparities even further.

Conclusions

Academic institutions that teach Public Health have an important developmental role in ensuring their graduates are capable of translating knowledge and research into practice. In order to do this, however, they need to ensure that they accurately map what is taught to what is required in practice. They also need to be sensitive to changes occurring in current Public Health practice and adapt what is taught accordingly. Only in doing so can they ensure that their graduates are adequately prepared to meet the ever changing demands of contemporary Public Health. There is a lack of congruence between what is taught on MPH courses and what is required could result in Public Health practitioners being ill-prepared for the demands of the real world. Greater engagement between academic institutions and practitioner organisations is necessary to ensure MPH courses are appropriate and up-to-date.

References

1. World Health Organisation. Essential public health functions: a three-country study in the Western Pacific Region. Geneva: WHO. 2003. (Online) (Cited 2012 Jan 3). Available from URL: http://www.wpro.who.int/NR/rdonlyres/7472FD5D-BBD0-4640-8EB8-3EAC8A2276B9/0/Essential_public_health_functions.pdf.
2. Chen L, Evans T, Anand S, Boufford JI, Brown H, Chowdhury M, et al. Human resources for health: overcoming the crisis. Lancet 2004; 364: 1984-90.
3. Beaglehole R, Dal Poz MR. Public health workforce: challenges and policy issues. Hum Resour Health 2003; 1: 4.
4. Sadana R, Mushtaque A, Chowdhury R, Petrakova A. Strengthening public health education and training to improve global health. Bull World Health Org 2007; 85: 163-4.
5. Fineberg HV, Green GM, Ware JH, Anderson BL. Changing public health training needs: professional education and the paradigm of public health. Annu Rev Public Health 1994; 15: 237-57.
6. Scharff DP, Rabin BA, Cook RA, Wray RJ, Brownson RC. Bridging research and practice through competency-based public health education. J Public Health Manag Pract 2008; 14: 131-7.
7. Calhoun JG, Ramiah K, Weist EM, Shortell SM. Development of a core competency model for the Master of Public Health degree. Am J Public Health 2008; 98: 1598-607.
8. Gebbie K, Merrill J. Public health worker competencies for emergency response. J Public Health Manag Pract 2002; 8: 73-81.
9. Wright K, Hann N, McLeroy KR, Steckler A, Matulionis RM, Auld ME, Lancaster B, Weber DL. Health education leadership development: a conceptual model and competency framework. Health Promot Pract 2003; 4: 293-302.
10. Horney JA, Sollecito W, Alexander LK. Competency-based preparedness training for public health practitioners. J Public Health Manag Pract 2005; Suppl: S147-9.
11. Rottman SJ, Shoaf KI, Dorian A. Development of a training curriculum for public health preparedness. J Public Health Manag Pract 2005; Suppl: S128-31.
12. Norman GR. Defining competence: a methodological review. In: Neufeld VR, Norman GR, eds. Assessing Clinical Competence. New York, NY: Springer; 1985: 15-35.
13. Doutrich D, Storey M. Education and practice: dynamic partners for improving cultural competence in public health. Fam Community Health 2004; 27: 298-307.
14. Council on Linkages Between Academia and Public Health Practice. Core Competencies for Public Health Professionals (adopted May 3, 2010).Washington, DC: Public Health Foundation. (Online) (Cited 2011 March 26). Available from URL: http://www.phf.org/resourcestools/Documents/Core_Public_Health_Competencies_III.pdf.
15. Siegrist BC. Partnering with public health: a model for baccalaureate nursing education. Fam

Community Health 2004; 27: 316-25.
16. Hunt ES. Higher Education and Employment: The Changing Relationship. Recent Developments in Continuing Professional Education. Country Study: United States. Paris: Organization for Economic Cooperation and Development; 1992. Report no. (OCDE/GD)(92) 21.
17. Potter MA, Barron G, Cioffi JP. A model for public health workforce development using the National Public Health Performance Standards Program. J Public Health Manag Pract 2003; 9: 199-207.
18. Woodhouse LD, Auld ME, Miner K, Alley KB, Lysoby L, Livingood WC. Cross walking public health and health education competencies: implications for professional preparation and practice. J Public Health Manag Pract 2010; 16: e20-8.
19. Potter MA, Pistella CL, Fertman CI, Dato VM. Needs assessment and a model agenda for training the public health workforce. Am J Public Health 2000; 90: 1294-6.
20. Lichtveld MY, Cioffi JP. Public health workforce development: progress, challenges, and opportunities. J Public Health Manag Pract 2003; 9: 443-50.
21. Faculty of Public Health. (Online) (Cited 2012 January 3). Available from URL: http://www.fph.org.uk/.
22. Council on Education in Public Health. Accreditation criteria. (Online) (Cited 2012 January 3). Available from URL: http://www.ceph.org/pg_accreditation_criteria.htm.
23. Association of Schools of Public Health in the European Region (ASPHER). Working Group on Accreditation for Public Health Education. (Online) (Cited 2012 January 3). Available from URL: http://www.old.aspher.org/index.php?site=accreditation_in_ph_education.
24. Scutchfield FD, Beaulieu J, Ireson C, Buege A. Public health competencies required by managed care organizations. J Public Health Manag Pract 2002; 8: 22-9.
25. Glasgow RE, Lichtenstein E, Marcus AC. Why don't we see more translation of health promotion research to practice? Rethinking the efficacy to effectiveness transition. Am J Public Health 2003; 93: 1261-7.