



## ***Evidence-based public health informatics training for public health practitioners***

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### **Question**

Does Evidence-Based Public Health training increase the frequency and sophistication of practice-related questions identified and articulated by public health professionals?

### **Background**

A number of research projects have studied the frequency and types of questions identified by healthcare practitioners as part of the broader literature of information seeking behavior among these professionals. McKnight and Peet have published a summary of the literature on the information seeking behavior of healthcare professionals with particular relevance to this current project.<sup>1</sup> Their summary of 39 studies and nine (9) literature reviews does *not* contain any studies involving general public health practitioners. The many types of healthcare professionals studied in their literature review, however, points to the fact that many questions remain unarticulated or unrecognized by healthcare professionals; most questions that are at least recognized are then not pursued; and, that many pursued questions are not answered effectively. McKnight and Peet also point to an over-dependence on small and often self-selected sample populations in the studies covered by their literature review. The investigators in this current study intend to overcome some of these deficiencies from previous studies by employing an experimental design in the form of a randomised controlled trial.

One study that McKnight and Peet describe in their article, which was published by Gorman and Helfand<sup>2</sup> seems to hold particular promise for this study. Gorman and Helfand note that physicians will pursue information to answer a question primarily because they believe an answer can be found. This observation points to a need for informatics training to empower healthcare practitioners with the skills to make this connection between questions and the means needed to answer those questions. Gorman and Helfand also determine that the “urgency” surrounding an information need will influence healthcare practitioners’ decisions to pursue answers. For this reason, the current study involves querying both intervention and control groups’ members three times a week about their naturally occurring questions in order to capture these questions as they arise close to the time of identification, and while these questions might be more closely associated with that sense of urgency.

Forsetlund and Bjørndal published a study during 2001, which also has informed the current study.<sup>3</sup> These researchers studied public health physicians in Norway, which makes their work relevant for reasons of subject scope, but less central due to their focus upon only physicians. They conducted five focus groups with Norwegian public health physicians. During these focus groups the public health physicians were asked

about the kinds of questions that arose in their practice, what kinds of sources they consulted to find answers, and how they utilized the obtained information. These focus groups and the authors' subsequent research suggests that public health physicians in Norway lacked an awareness of these possible questions and further lacked an awareness of how they might translate their questions into information search strategies. These focus groups later were followed by observational studies of six (6) public health physicians engaged in their daily activities. Forsetlund and Bjørndal have noted that the structure of public health physician practice in Norway possesses such unique characteristics that the reader can only wonder about the generalization of their findings to other countries. In the United States, in particular, medical doctor training might be only one of nearly ten major professional training routes to enter public health practice so physicians represent only a small percentage of the overall public health professional workforce in the US. The general lack of practice skills to even recognize or articulate a question among this Norwegian physician population does suggest that the current study most likely will demonstrate cause and effect relationships between informatics training and the articulation of questions among public health practitioners.

The dearth of research on the questions articulated by public health practitioners additionally means that we have a deficiency in our knowledge base on the *types of questions* that public health practitioners pose. The second goal of this research project also attempts to adapt the classification system for the "Knowledge Domains of Public Health" developed by the Lamar Soutter Library at the University of Massachusetts Medical School.<sup>4</sup> Unfortunately, other recent studies<sup>5 6</sup> on classifying health sciences reference questions are not relevant to addressing the needs of the current study. The current study might further our understanding of public health practitioners' questions by identifying clear patterns to the subject domains where questions tend to cluster within a broad taxonomy such as the University of Massachusetts' system. Two studies from clinical medicine form the basis for this hypothesis. Barbara Wildemuth et. al. reported in 1994 that when they classified the questions encountered by both physicians and medical students in a simulated situation these questions tended to cluster around the symptoms of disease, epidemiology, and environmental factors.<sup>7</sup> Rebecca Jerome et. al. reported during 2001 that the questions associated with a clinical informatics consult service clustered chiefly into the subject domains of treatment, disease description, adverse effects, efficacy, complications, and diagnosis.<sup>8</sup>

## **Methods**

Randomised Controlled Trial. The intervention group will receive its training early in the program whereas the control group will receive identical training two weeks later. The investigators will concentrate their attention on comparing the questions posed by the intervention and control groups during the two week period immediately following the training of the intervention group while the control group has not yet received its training. The frequency and sophistication of the questions generated by both intervention and control groups will be the basis for the comparison.

## Results

The investigators hypothesize that the intervention group will articulate a statistically significant greater number of practice-based questions and that these questions will be far more sophisticated following the EBPH training session than the questions generated by the still untrained control group.

## Conclusions

At the time of the EBL Conference during October 2005 we will be able to report preliminary results based upon our having trained and compared the questions articulated by approximately 90 of the 120 participants scheduled for training in this program

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<sup>1</sup> McKnight, M., & Peet, M. (2000). Health care providers' information seeking: recent research. *Medical Reference Services Quarterly*, 19 (2), 27-50.

<sup>2</sup> Gorman, P.N., & Helfand, M. (1995). Information seeking in primary care: how physicians choose which clinical questions to pursue and which to leave unanswered. *Medical Decision Making*, 15 (2), 113-9.

<sup>3</sup> Forsetlund, L., & Bjørndal, A. (2001). The potential for research-based information and public health: identifying unrecognized information needs. *BMC Public Health*, 1 (1). Retrieved August 1, 2005 from <http://www.biomedcentral.com/1471-2458/1/1>.

<sup>4</sup> The University of Massachusetts Medical School. Lamar Soutter Library. Knowledge domains of public health. Retrieved August 1, 2005 from <http://library.umassmed.edu/ebpph>.

<sup>5</sup> Markgren, S., Ascher, M.T., Crow, S.J., & Lougee-Heimer H. (2004). Asked and answered online: how two medical libraries are using OCLC's question point to answer reference questions. *Medical Reference Services Quarterly*, 23 (1), 13-28.

<sup>6</sup> Schwartz, J. (2003). Toward a typology of email reference questions. *Internet Reference Services Quarterly*, 8 (3), 1-15.

<sup>7</sup> Wildemuth, B.M., de Bliet, R., Friedman, C.P., & Miya, T.S. (1994). Information-seeking behaviors of medical students: a classification of questions asked of librarians and physicians. *Bulletin of the Medical Library Association*, 82 (3), 295-304. Available from: <http://www.pubmedcentral.nih.gov/tocrender.fcgi?journal=72&action=archive>

<sup>8</sup> Jerome, R.N., Guise, N.B., Gish, K.W., Sathe, N.A., & Dietrich, M.S. (2001). Information needs of clinical teams: analysis of questions received by the clinical informatics consult service. *Bulletin of the Medical Library Association*, 89 (2), 177-84. Available from: <http://www.pubmedcentral.nih.gov/tocrender.fcgi?journal=72&action=archive>