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## Public Health Systems and Services Research: Bridging the Practice-Research Gap.

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# Public Health Systems and Services Research: Bridging the Practice-Research Gap

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Public health practitioners understand the principles of evidence-based practice and the science that should drive their efforts to improve the community's health through the implementation of science-driven public health programs. However, the translation of research to practice still has numerous barriers. This commentary provides suggestions to strengthen the link between research and practice.

## BACKGROUND

Health interventions, regardless of their nature, are driven by scientifically obtained evidence for the best course of action. Much of the thought about the use of evidence to drive what we do in medicine derives from the thoughts and writing of Archie Cochrane, illustrated by the continued utility of the systematic reviews contained in the Cochrane Collaborative (<http://www.cochrane.org>). The growth of evidence-based medical practice has certainly been one of the recent hallmarks of medical practice.

We have seen the adoption of evidence-based medicine and the growth of quality assurance and health services research focused on how best to care for the individual. This has become the norm in medicine. For instance, the emergence of the Guide to Clinical Preventive Services (GCPS), particularly in medical practice, dictates the norm for what clinical preventive services provide. Perhaps more importantly, the guide dictates the way one goes about establishing research validity for our efforts to prevent disease.<sup>1</sup> It helps illustrate how one assembles scientific evidence and interprets it to provide guidance to those who care for patients. It assures what resources are most effective for the care of patients and what procedures and processes are not beneficial to the patient.

A good deal of time and effort went into assuring the use of the guide. While preparing the guide, the creation of new assessments of published information and data generated the dissemination of practice guidelines. The subsequent understanding of activities such as assessment of practice, feedback to practitioners, and impact on the increased use of the guide has helped us to understand even more how best to help practitioners perform evidence-based

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medicine.<sup>2,3</sup> The GCPS also provides the advantage of other concomitant developments in health-care delivery. The advent of managed care, for example, and its development of the Healthcare Effectiveness Data and Information Set (HEDIS) prompted many systems to put into place efforts to assure implementation of the clinical practice guidelines.<sup>4-6</sup> In a similar vein, financial incentives appear likely to be tied to performance of these clinical preventive services with patients. The notion of “paying for performance” focuses on reimbursement being tied to care of the patient, guided by sound clinical reasoning and well-accepted quality standards. As the pay-for-performance movement advances, it is likely that compliance with the guide’s recommendations will be followed even more closely by those who take care of the patients.<sup>7</sup>

Given the success of the GCPS, it is not surprising that some public health practitioners raised the issue of whether it was feasible to repeat this process to obtain a comparable guide to those successful community interventions that benefit community health, and not just the individual. The history of community health program development is fraught with good intentions and the ill-conceived use of conventional wisdom to develop and implement programs. Two contemporary illustrations make the point dramatically: the lack of success of the Drug Abuse Resistance Education (DARE) program and the effort expended on sexual abstinence education.<sup>8-10</sup> These initiatives had intuitive merit, and, while substantial resources have been allocated to these programs, their efficacy is in question.

Given this history, the call to see if there was any merit to creating a guide to community prevention programs, similar to the GCPS, became an imperative. In response, the Council on Linkages Between Academia and Public Health Practice, after a feasibility study, found that it was possible to conduct a scientific evaluation of community-wide interventions and suggested that efforts be expended to develop a companion to the GCPS. A non-federal panel was convened and staffed by the Centers for Disease Control and Prevention (CDC) to develop this companion guide. The work of that panel and a description of their efforts have been well documented in the literature.<sup>11-13</sup>

These efforts have produced an excellent document detailing the community preventive interventions that appear to work, based on the scientific literature. The document, *The Guide to Community Preventive Services*, is available for use in both print and Web versions.<sup>1</sup> Not surprisingly, the science to drive decisions about clinical preventive services had major gaps that precluded the panel’s ability to make recommendations

in a number of areas, as there was just not enough good science to make a recommendation. This, unfortunately, was even truer in the case of recommendations about community preventive interventions. The lack of science in the areas of clinical and community preventive services is a sad commentary on the state of the U.S. research community and its support for prevention, but that is another issue that needs to be addressed.

The Guide to Community Preventive Services has not realized the same success as the GCPS in influencing behavior. The logical target for the implementation of evidence-based community preventive programs is the local health department (LHD). The LHD is the clinical equivalent of the primary care provider, with the primary care provider and health department implementing the clinical guide and community guide recommendations, respectively. As with the GCPS, the Guide to Community Preventive Services has experienced a rocky start in its implementation in contemporary public health practice. A thoughtful study focused on working with health departments to provide community services for physical activity and obesity was not particularly successful, despite a thorough intervention with the health departments to move them to evidence-based approaches for dealing with the contemporary obesity epidemic.<sup>14</sup>

Substantial literature has grown up around evidence-based public health practice. Brownson and colleagues have been at the forefront of this effort to help public health practitioners understand the principles of evidence-based practice and the science that should drive their efforts to improve the community’s health through the implementation of science-driven public health programs.<sup>15</sup> The Guide to Community Preventive Services lacks several of the features of the GCPS that may have inhibited its more widespread adoption by LHDs, such as using the lessons learned from improving the use of the GCPS in physician practices with such simple approaches as assessment and feedback of departmental efforts. In addition, a set of HEDIS measures for public health community-based services has not been developed, nor has any discussion of paying for performance entered the discussion of implementation by LHDs of policies, driven by assessments, that have scientific validity in their application and effect.

In addition to programs that are evidence-based in public health, there is a need for research focused on the organization, administration, and financing of public health services. This need has led to emergence of the field of public health systems and services research (PHSSR). While the science of attempting to improve

the administration and management of LHDs has a long history, well described in an article by Turnock et al.,<sup>16</sup> the development of a scientific research discipline focused on the proper ways to organize, finance, and administer public health organizations or systems is relatively new. Several editorials and commentaries have focused on the definition and character of public health systems and services research to explain and define the field.<sup>17–20</sup> Clearly, this theoretical base is necessary for a growing and developing discipline. However, as with other health sciences, the important issue is not definitional or necessarily scientific; in the general sense, it is the application to benefit the health of individuals and, in the case of public health, populations.

This new science, like that of the program science detailed in the Guide to Community Preventive Services, is likely to have the same issues and problems that plague efforts to assure implementation of evidence-based public health practice. Specifically, as new information develops that has implications for public health practice, it can improve the way programs are delivered by modifying and improving the infrastructure and capacity of LHDs. However, the result of that work may not influence public health practice. Already, there have been calls for examining mechanisms to translate this new research into practice.<sup>16–20</sup>

The notion of translation of science into practice is a leading concern of the nation's premier research institution, the National Institutes of Health (NIH), which has created the Clinical and Translational Science Award (CTSA) to facilitate the translation of science into community practice. Moreover, public health and preventive and community medicine are neither immune to nor disengaged from that process. In many cases, those departments, schools, or units have ties to the community that are now envied by the bench research community to further enhance their NIH scores to receive those CTSA awards.<sup>21</sup> Regardless, public health cannot and should not wait for the science and health community to change paradigms and approaches to translation of science into practice. Given that, are there some things that we might be able to do to lead, rather than follow, the new research from PHSSR to the practice of public health?

## BRIDGING THE PRACTICE-RESEARCH GAP

We have some suggestions and observations about how we might accomplish this goal. First, we could improve and encourage health administration instruction focusing on evidence-based public health practice. It is gratifying to see that 57% of current top executives

in LHDs have either a master's or doctoral degree; however, that leaves a substantial number (43%) at the bachelor or associate degree level. As imagined, the number of employees with graduate degrees declines with the size of the department, and 64% of jurisdictions served by LHDs with fewer than 50,000 people were less likely to have someone with a graduate degree as its director.<sup>22</sup> In the case of undergraduate students, those who have had specific exposure to the public health curriculum outlined by the Association of Schools of Public Health's Undergraduate Public Health Task Force are more likely to have some exposure to notions of the use of evidence in public health program decision-making. However, that may or may not be true of students without exposure to public health in their undergraduate curriculum.<sup>23</sup>

Directors with a graduate degree in public health from an accredited school or program are likely to have demonstrated the competencies in analytic/assessment skills and policy/development skills described in the competencies outlined by the Council on Linkages Between Academia and Public Health Practice in their core competency guide.<sup>24</sup> Therefore, one assumes these students are familiar with evidence-based public health and the use of the guides to clinical and community preventive services. This knowledge, as the result of their educational experience, should suggest some commitment to using the same set of competencies to make decisions about how they are dealing with management and administrative issues in their health departments. It is unclear how extensive health administration instruction is in our nation's schools and programs, especially focused on this new, emerging evidence-based practice of public health. However, given the state of the art in practice, this may be an area in which attention by the public health accreditation body—the Council on Education for Public Health or the new National Board of Public Health Examiners—could and should focus.

Second, perhaps one of the potential cures for lack of evidence-driven public health administration is to develop the Guide to Community Public Health Administration using the same evidentiary approach as the other guides. As the field of PHSSR develops, it would be helpful for LHD directors to have an authoritative source of information to look to when making programmatic decisions. We have previously pointed out that the literature on community preventive services severely limits the ability to make recommendations that are evidence-based.<sup>25</sup> It is easy to imagine there is even less information to guide the public health administrator in evidence-based public health management and administration. The solution

for this problem is the same for the two existing guides and any new ones: appropriate attention to funding studies designed to answer real-world questions in the practice of prevention and public health.

In conversations with practitioners, they often lament that researchers are doing research on what interests them and not what interests or concerns the practice of public health. This assertion is by no means merely anecdotal. Indeed, one of the impetuses for the development of the practice-based research networks (PBRNs) in public health was the disconnect between practice and research, and the hope that enabling and—what may be more important—funding research for the practice community's concerns could improve that disconnect. Again, returning to the issue of translation of science into practice is not exclusive to public health. If the CTSA attempts to address this gap in the clinical sciences, perhaps we can learn lessons by our participation in and understanding of the knowledge gained in those institutions that receive CTSA funding. Clearly, those units in medical centers that depend on their public health or preventive or community medicine colleagues to be the bridge between the university and the community are in a key position to help us better understand this translation, and we should expect that they would provide that information and help design the programs and activities that link practice and research in both community preventive services and evidence-based public health administrative practice.<sup>24</sup>

Notwithstanding that process, it is imperative that we develop and define mechanisms for communication between research and practice. In recent years, the Robert Wood Johnson Foundation (RWJF) has focused on PHSSR by supporting research in this area, as well as by providing easier access to data, improving the quality of data gathered on the public health system, and sponsoring sessions at Academy Health and the Keeneland Conference to improve the quality of the research and the quantity and quality of the conversation between research and practice (<http://www.publichealthsystems.org>). The use of practice-based research networks in primary care was an early and successful effort in this area. The development of the new PBRNs also supported by RWJF are an important addition to creating the dialogue we need between research and practice, and the continued development and efforts of those networks should be closely followed to see if they are successful in bridging the practice-research gap. We feel that there are other suggestions that illustrate best practices of linking research and practice in public health administrative practice, and we encourage those who have illustrations of successful

efforts in this activity to share them with both practice and research colleagues.

Thirdly, we need to improve the time lag between information gathering and data dissemination. The point is frequently made that there is a major gap in the time between discovery and application. All journal editors struggle with the time delay between submission, review, revision, and publication. Efforts have been made to speed up this process to assure research findings that must and should go through the peer-review process do so as quickly as possible, so that they can be published and hopefully integrated into practice. The National Library of Medicine has also recognized the problem and has attempted to facilitate the rapid conversion of research information into practice environments. Nevertheless, new efforts in public health need to be expended in getting new research findings with practice implications into the hands of those who need and use the information. We have considered the potential for a publication, much like CDC's *Morbidity and Mortality Weekly Report* (MMWR), as a mechanism for rapidly transmitting new PHSSR findings to practice. The use of the electronic MMWR has been a boon to every LHD, even those in small, rural communities; perhaps a similar administrative research bulletin could serve a similar purpose.

Fourth, the role of accreditation and the development of the Public Health Accreditation Board (PHAB) could also make a contribution to this effort to marry science and practice in public health. A review of the standards developed by PHAB suggests that if they are appropriately interpreted, they could drive LHDs and state health departments in the direction of assuring more science in their work. Specific references in the standards relating to implementation of health-promotion strategies require that these be based on sound theory and evidence of effectiveness and/or promising practice (specifically, standard 3.1.2 B).<sup>26</sup> While standard 5.1 B calls for public health policies, practices, and capacities to be based on current science and/or promoting practice, there is no specific measure or documentation in the standard that addresses this issue. It is likely that many health departments may have trouble meeting the documentation requirements about science/evidence-based practices in standard 10.1 B and communication of research findings in 10.2 B. The fact that science is actively included in several of the standards makes a clear point that decisions, at least about programs sponsored by the LHD, should be data-driven and evidence-based.

Finally, a notion that has grown out of an understanding of this need to bridge practice and research is that of establishing an Associate Commissioner/



Director of Science at all state health departments and selected major LHDs, such as the Los Angeles County or New York City health departments.<sup>27</sup> Public health, like other health professions, is driven by science. As such, an individual in a top leadership position should oversee the application of science into practice. Before a major decision about the work of the health department can or should be made, it would seem useful to ascertain if there is enough information to have the decision be evidence-driven. Not all decisions can or will be made, the evidence may not exist, or the science may point to a politically unacceptable solution. However, that should not preclude an examination to ascertain and inform judgments by data, information, or knowledge.

At least one major LHD has created such a position.<sup>28</sup> A quick review of the literature does not suggest that this effort has been evaluated or discussed, but it certainly should be. The notion that every state health department would have an Associate Commissioner/Director of Science has some intrinsic logic. In addition to the staff function of providing science for decision-making, this person could and should serve as a conduit for relationships with academic institutions for science and research projects. A corollary is the potential for the joint appointment of such an individual by the state health department and the local public health academic institution. In that same vein, the development and encouragement of academic health departments—mutually beneficial formal affiliations between health profession schools and LHDs—would also seem to be a reasonable way to assure that science is an integral part of the health department and its activities.<sup>29</sup>

## CONCLUSIONS

Public health, like other healing professions, is based in science. Our basic sciences of epidemiology, biostatistics, health behavior, environmental health, and management of health-care systems have as much credibility as the anatomy and physiology of the medical profession. The use of science to drive medical decisions—evidence-based medicine—has become an important part of the practice of medicine. The role of rapid translation of scientific findings from the bench to the bedside has received renewed attention and NIH resources. We in public health should strive to keep pace with medicine through more scientific-based decisions and hold ourselves to at least the same, if not higher, standards. This requires us to use our science to perform evidence-based public health and look for mechanisms to more quickly move science of programs

or management and administration to rapid application in our efforts to improve the public's health.

## REFERENCES

- Centers for Disease Control and Prevention (US). The guide to community preventive services [cited 2009 Sep 21]. Available from: URL: <http://www.thecommunityguide.org/index.html>
- Stange KC. The complexity of and opportunity for screening in primary care. *Ann Fam Med* 2009;7:2-3.
- Crabtree BF, Miller WL, Tallia AF, Cohen DJ, DiCicco-Bloom B, McIlvain HE, et al. Delivery of clinical preventive services in family medicine offices. *Ann Fam Med* 2005;3:430-5.
- Hiltunen KA. HEDIS: implementation issues. *J Healthc Qual* 1996;18:32-4; quiz 34-5, 44.
- Hiltunen KA. HEDIS 1999 effectiveness of care measures: implementation issues. *J Healthc Qual* 1999;21:32-5, 54-5.
- Eddy DM, Pawlson LG, Schaaf D, Peskin B, Shcheprov A, Dziuba J, et al. The potential effects of HEDIS performance measures on the quality of care. *Health Aff (Millwood)* 2008;27:1429-41.
- Werner RM, Dudley RA. Making the "pay" matter in pay-for-performance: implications for payment strategies. *Health Aff (Millwood)* 2009;28:1498-508.
- Pan W, Bai HY. A multivariate approach to a meta-analytic review of the effectiveness of the D.A.R.E. program. *Int J Environ Res Public Health* 2009;6:267-77.
- Gorman DM, Huber JC Jr. The social construction of "evidence-based" drug prevention programs: a reanalysis of data from the Drug Abuse Resistance Education (DARE) program. *Eval Rev* 2009;33:396-414.
- Congress questions effect of abstinence-only approach. Scientists, others say programs fail to work. *AIDS Alert* 2008;23:64-7.
- Truman BI, Smith-Akin CK, Hinman AR, Gebbie KM, Brownson R, Novick LF, et al. Developing the Guide to Community Preventive Services—overview and rationale. *Am J Prev Med* 2000;18(1 Suppl):18-26.
- Zaza S, Lawrence RS, Mahan CS, Fullilove M, Fleming D, Isham GJ, et al. Scope and organization of the Guide to Community Preventive Services. *Am J Prev Med* 2000;18:27-34.
- Zaza S, Wright-De Aguerro LK, Briss PA, Truman BI, Hopkins DP, Hennessy MH, et al. Data collection instrument and procedure for systematic reviews in the Guide to Community Preventive Services. *Am J Prev Med* 2000;18:44-74.
- Brownson RC, Ballew P, Brown KL, Elliott MB, Haire-Joshu D, Heath GW, et al. The effect of disseminating evidence-based interventions that promote physical activity to health departments. *Am J Public Health* 2007;97:1900-7.
- Brownson RC, Baker EA, Leet TI, Gillespie KN. Evidence-based public health. New York: Oxford University Press; 2003.
- Turnock BJ, Handler AS. From measuring to improving public health practice. *Annu Rev Public Health* 1997;18:261-82.
- Scutchfield FD, Marks JS, Perez DJ, Mays GP. Public health services and systems research. *Am J Prev Med* 2007;33:169-71.
- Scutchfield FD, Patrick K. Public health systems research: the new kid on the block. *Am J Prev Med* 2007;32:173-4.
- Mays GP, Halverson PK, Scutchfield FD. Behind the curve? What we know and need to learn from public health systems research. *J Public Health Manag Pract* 2003;9:179-82.
- Scutchfield FD. To build on the discipline of health services research focused on the public health system. Foreword. *Health Serv Res* 2009;44(5 Pt 2):1773-4.
- Michener L, Scutchfield FD, Aguilar-Gaxiola S, Cook J, Strelnick AH, Ziegahn L, et al. Clinical and translational science awards and community engagement: now is the time to mainstream prevention into the nation's health research agenda. *Am J Prev Med* 2009;37:464-7.
- National Association of County and City Health Officials. 2008 national profile of local health departments. Washington: NACCHO; 2009.
- Association of Schools of Public Health. Recommended draft curriculum for Public Health 101. 2009 [cited 2009 Sep 21]. Available from: URL: [http://www.asph.org/userfiles/Curriculum\\_Public%20Health%20101.pdf](http://www.asph.org/userfiles/Curriculum_Public%20Health%20101.pdf)

24. Public Health Foundation. Council on Linkages: core competencies for public health professionals [cited 2009 Sep 21]. Available from: URL: <http://www.phf.org/link/corecompetencies.htm>
25. Scutchfield FD, Mays GP, Lurie N. Applying health services research to public health practice: an emerging priority. *Health Serv Res* 2009;44(5 Pt 2):1775-87.
26. Public Health Accreditation Board. Proposed local standards and measures: adopted by PHAB Board of Directors July 16, 2009, for PHAB beta test [cited 2009 Sep 21]. Available from: URL: <http://www.exploringaccreditation.org/assets/documents/PHABLocalJuly2009-finaleditforbeta.pdf>
27. Fielding JE, Teutsch SM. Integrating clinical care and community health: delivering health. *JAMA* 2009;302:317-9.
28. Boex JR, Keck CW, Piatt E, Nunthirapikorn TN, Blacklow RS. Academic health centers and public health departments: partnership matters. *Am J Prev Med* 2006;30:89-93.
29. Keck CW. Council on Linkages: the academic health department: a proposal to examine the question of what should be done to facilitate the development of academic health departments. Washington: Public Health Foundation; 1998. Also available from: URL: <http://www.phf.org/link/ahd.htm> [cited 2009 Sep 21].