Evidenced-based Guidelines for Public Health Nursing Practice

Susan Strohschein, RN, MS
Marjorie A. Schaffer, RN, PhD
Betty Lia-Hoagberg, RN, PhD

Practice guidelines that provide research-based information for practice and promote improved health outcomes are needed in public health nursing. The Minnesota Practice Enhancement Project describes the development process, instrument, and dissemination of guidelines to practicing nurses.

Public health nursing has built a practice model primarily from practice ideas, suggestions, and early theory development. However, recent emphasis has been placed on the development of practice guidelines in public health that will provide research-based evidence for interventions and promote improved health outcomes. In Future of Public Health, the Institute of Medicine emphasized that public health actions require application of an accurate knowledge about the causes and distribution of health problems and knowledge of intervention effectiveness. Bialek and Flake documented the feasibility of identifying evidence from research that can be translated into public health practice. Effective public health nursing interventions also should reflect such grounding in science. Supported by systematic review of research studies filtered through experts, evidence can be structured and communicated to public health nurses via practice guidelines.

Framing research findings as guidelines can provide a user-friendly approach that increases nurses’ awareness of existing research and ways to apply research to practice.

HISTORY OF GUIDELINE DEVELOPMENT IN PUBLIC HEALTH AND NURSING

The trend in establishing practice guidelines has been led by several groups. In Canada, the Community Health Practice Guidelines Working Group was initiated to systematically evaluate the effectiveness and efficiency of community health interventions. Project participants developed a process that included a systematic review of comparative studies, a practice survey to determine the number and type of provider interventions, and a review of routinely collected data and expert opinion. This approach was applied to 3 community health interventions (immunization delivery methods, partner notification strategies for sexually transmitted disease, and restaurant inspection programs) and distributed via a special issue of the Canadian Journal of Public Health. However, implementation of the guidelines into practice was not part of the project design.

The Agency for Health Care Policy and Research has played a major role in the United States in developing numerous clinical practice guidelines, including those for pressure ulcers, pain management, and urinary incontinence. The US Preventive Services Task Force published the Guide to Clinical Preventive Services, which is based on a systematic review of research and use of methods adapted from the Canadian work. This guide provided recommendations for primary and secondary prevention services for persons in clinical settings. To complement these guidelines, the Council on Linkages Between Academia and Public Health Practice recommended the development of a guide to community level prevention services. Initial developmental work was accomplished by the Health Program Alliance at the Johns Hopkins University. Further work to “summarize what is known about the effectiveness of population-based interventions for prevention and control” is being carried out by the Task Force on Community Preventive Services and staffed by the Centers for Disease Control and Prevention. This guide, which will focus on community-based prevention and control strategies, also incorporates current scientific evidence and expert opinion.

The American Nurses Association (ANA) also has provided leadership for development of clinical practice guidelines by nurses. The ANA and the American
Public Health Association have described standards for public health nursing that provide general recommendations for practice. Standards are broad authoritative statements that are used to judge the quality of nursing practice. In contrast, guidelines provide direction to nurses in their decision-making about specific courses of action relevant to health conditions, populations, and outcomes and, therefore, improve their practice.

An important step toward guideline development for public health nurses is the work of Hayward et al and Ciliska et al in Canada. They responded to the challenge to define the role of public health nurses in public health service and evaluated the effectiveness of public health nursing interventions through home visiting. They used a systematic process, including relevancy and validity ratings, to review the literature for the outcomes of home visiting. A stringent review identified a limited number of studies that provided evidence for the effectiveness of specific public health nursing interventions with various populations.

Although a recent focus has been placed on developing the evidence base for practice, several barriers prevent many public health nurses from successfully incorporating it. Public health nurses have little time to search the literature for research-based strategies as they face the daily demands of practice, and many nurses lack sufficient knowledge about the research process. In addition, nurses' employing agencies may lack a process for integrating research into practice, and some agencies may not support nurses' initiative for research activities.

**MINNESOTA PRACTICE ENHANCEMENT PROJECT**

The purpose of this article is to describe the evidence-based guideline development process in Minnesota, the guideline product, and the communication of the guidelines to public health nurses. Several events have contributed to the need to document the effectiveness of public health nursing interventions in the state and to establish clear practice guidelines. In the early 1990s, the Minnesota legislature pressed for a reconfigured health care system of prepaid health plans to contain rising medical costs. Clients receiving medical assistance and MinnesotaCare (tax-supported reduced-fee care) were required to enroll in managed care plans. In addition, the health plans were required to file collaboration plans to document how they would work with local public health boards and others to achieve public health goals in their communities. As a result, local public health agencies could either become part of a health plan, become a contractor of services with a health plan, or seek other sources for funding operating expenses.

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In response to these external factors, the Minnesota Practice Enhancement Project (MPEP) was initiated by the Minnesota Department of Health, Section of Public Health Nursing. MPEP was a statewide endeavor to develop and pilot public health nursing practice guidelines. The purpose of MPEP was to enhance public health nursing practice by communicating "best practices" as determined by experts and based on evidence extracted from the literature. The guideline users were assumed to already have baseline public health practice competencies. In addition, public health nurses were expected to be able to use the developed guidelines as confirmation of their good practice or as a learning tool to improve practice and outcomes.

Concurrently with the MPEP, the Section of Public Health Nursing provided leadership in the development of a model for public health interventions. The interventions were selected based on a statewide process involving public health nurses at all levels. A document of intervention descriptions has been distributed across the state. In this model, interventions are population-based and occur at 3 levels: (1) systems-focused, (2) community-focused, and (3) individual-focused. Systems-focused interventions create change in organizations, policies, laws, and structures. Community-focused interventions create change in communities and are directed toward groups of persons or all persons within the community. Individual-focused interventions are aimed at improving the health status, knowledge, and skills of persons, either singly or in families, classes, or groups. MPEP guidelines were categorized into each of these 3 intervention levels.

Strategies for guideline development were adapted from the model of clinical guideline development used by the Agency for Health Care Policy and Research. ANA's Manual to Develop Guidelines also provided direction to the development process. The project involved several phases.

**Discovery Phase**

In 1995, 71 public health nurses and supervisors from local public health agencies participated in focus groups throughout the state. They were asked to predict how their communities would change in the next 5 years and to reflect on how their practices would need to change in response to those community changes. The public health nurses identified specific areas that would require the most change in practice, which had relevance for possible guideline topics.

**Guideline Topic Selection Phase**

The MPEP Advisory Committee, a 12-member group composed of public health nursing directors and supervisors, Minnesota Department of Health program specialists, and faculty from baccalaureate nursing programs, met to select topics for guideline development. Factors considered in topic selection included focus group information, the fit of the topic with population-based practice, and the inadequacy of information on preferred interventions in those practice areas. Two guideline topics were selected: (1) preventing violence against women and children and (2) promoting positive parenting in school-aged children and adolescents, with a particular focus on resiliency development.

**Evidence Gathering Phase**

The literature search and analysis was accomplished through an informal agreement with the University of Minnesota School of Nursing graduate program in community health nursing. Faculty identified 3 interested students and arranged that their work with MPEP would meet...
Evidence Recommendation Phase
Two expert panels, one on family violence prevention and another on the promotion of positive parenting, critiqued the articles for relevancy to practice by using criteria established by the MPEP Advisory Committee. A set of indicators, ranging from (0) for "not addressed" to (5) for "fully developed" was established for the following criteria:

- Emphasis on primary prevention
- Role of public health nurse in the intervention
- Control of other factors that could influence the outcome
- Extent of change following the intervention
- Extent to which the intervention was based on theory
- Inclusion of the impact of the intensity and duration of the intervention
- Provision of a cost/benefit analysis
- Extent to which the intervention outcomes were specified or measured

The articles were read by at least 2 members of the expert panels. Panel members reviewed and discussed the critiques, reached a consensus on the value of the work and implications for public health nursing practice, and determined the inclusion of the evidence in practice guidelines. Based on the quality of evidence, their findings of reviewed articles were placed into 3 categories of strength of evidence: (1) practice recommendations, based on experimental designs; (2) practice suggestions, based on nonexperimental or observational designs; and (3) practice ideas, based on expert opinion.

The 19 public health nursing experts serving on the expert consensus panels each contributed the equivalent of a 40-hour work week in evaluation of relevancy factors and guideline selection. Four to five consensus meetings were required of each panel member; some members traveled a long distance and all members had to arrange for coverage of their job responsibilities. Their employers covered mileage and time expenses. The only remuneration provided to panel members was lunch at the consensus meetings. The contributions of the expert panel members in the development of practice guidelines demonstrated a high level of commitment to public health nursing.

Guideline Development Phase
Practice guidelines were constructed by project staff based on the expert panels' recommendations derived from the reviewed evidence. The final product included "easy to use" features such as checklist, condensed, and full versions of the guidelines. Two guideline manuals were produced, one for each guideline topic.26,27 Each manual included: (1) an overview of the problem, (2) selection of evidence, (3) key concepts, (4) recommendations for effective interventions at 3 levels (population-based systems-focused, community-focused, and individual/family focused), (5) a list of "must-read" articles, which were placed in the appendixes, and (6) a list of other related resources. See the Box for a sample guideline format.

Guideline Dissemination Phase
The initial guideline dissemination phase was intended to orient potential users to the purpose and process of using the practice guidelines. More than 100 copies of each guideline manual were distributed to local public health nursing agencies through 16 meetings held across the state in late 1996. This 3-hour inservice, which was attended by 241 staff nurses and supervisors, addressed the use of the manuals rather than focusing on specific content.

Initial Evaluation Phase
An initial evaluation, called the "intent to use" survey, was completed at the end of the in-service. More than 90% of participants said that they felt the manuals would be useful, and 85% reported that the manuals would be easy to use once they became more familiar with the format. Respondents gave the following reasons for intent to use the guidelines: increased knowledge in the area, increased awareness of expected outcomes, usefulness as a measure of outcomes, and perception of agency support for guideline use. The barriers to guideline use were primarily that the information provided was not new or their use would not impact practice. Additional deterrents were perceived difficulty in use of the manual and lack of agency support. A follow-up evaluation of public health nurses' use of the guidelines was conducted 6 months after their introduction. Analysis of those results is under way.

SUMMARY AND RECOMMENDATIONS
We have described 3 major steps in the development of public health nursing guidelines: (1) conducting an evidence-based literature search, (2) establishing a review process with a systematic literature quality analysis tool, and (3) disseminating the guidelines to practicing public health nurses. MPEP has culminated in the development of 2 guidelines sets that have been distributed to public health nurses throughout the state. However, the development process required considerable time and energy resources from students and professionals in public health nursing. The only direct funding was provided by the Minnesota Department of Health for a full-time project coordinator and associated support services. Given the major contribution by practicing public health nurses and students, the process for future development of MPEP guidelines needs to be streamlined. Recommendations include refinement of the analysis tool used to determine the quality of evidence and revision of the expert panel process. In
**Box. Guideline examples: Prevention of violence against women and children**

Guideline topics included interventions to prevent: (1) family violence, (2) violence against women, (3) violence against children through parent enhancement, child empowerment, and therapeutic services. All 3 levels of interventions (systems, community, and individual/family) are addressed for each guideline topic in the manuals.

### Practice level/guideline

**Systems-focused parent enhancement interventions**

#### Practice recommendation

Interdisciplinary teamwork collaboration is necessary for home visiting intervention effectiveness. (Hardy JB, Street R. Family support and parenting education in the home: an effective extension of clinic-based preventative health services for poor children. J Ped 1989;115:927-31.)

#### Practice suggestion

In providing home visits to reduce the risk of child maltreatment, it is critical that the nurse-visitor maintains linkages with related community-based services and can facilitate necessary referrals. (Olds D, Henderson CR, Kitzman H, Cole R. Effects of prenatal and infancy nurse home visitation on surveillance of child maltreatment. Pediatrics 1995;95:365-72.)

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**Community-focused interventions to prevent violence against women**

#### Practice suggestion

Pregnant abused women, and especially white abused women, are at increased risk of bearing infants of low birth weight and tend not to enter prenatal care until late in pregnancy. All pregnant women should be screened for abuse at each encounter with the health care system (McFarlane J, Parker B, Soken K. Abuse during pregnancy: Associations with maternal health and infant birth weight. Nurs Research 1996;45:37-42.)

#### Practice idea

Nurses can serve a vital function in providing health services policy development in battered women's shelters. (Hollenkamp M, Attala J. Meeting health needs in a crisis shelter: a challenge to nurses in the community. J Community Health Nurs 1986;3:201-9.)

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**Individual-focused child empowerment instructions**

#### Practice suggestion

School-based instruction for children ages 10-16 years on how to prevent victimization (i.e., sexual abuse, assaults, bullying, kidnapping) is more effective if the curriculum is comprehensive (i.e., curriculum covered at least 9 of the following areas: sexual abuse, bullies, good and bad touch, confusing touch, telling an adult, abuse is never the child’s fault, a chance to practice in the class, information to take home, a meeting for parents, and/or repetition of the material over more than a single day) and if parents also inform their children. (Finklehor D, Asdigian M, Dziuba-Leatherman J. The effectiveness of victimization prevention instruction: an evaluation of children’s response to actual threats and assaults. Child Abuse Neglect; 1992. p. 141-53.)

#### Practice idea


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**Outcomes/indicators**

The long-term outcomes were development of adequate parenting and child-care skills through teaching and supportive services.

The long-term outcomes achieved were reduction in the severity of child maltreatment through improved surveillance and referral facilitated by nurse visitors. Mothers showed improvements in knowledge, attitude, and skills.

The long-term outcome would be early identification of women abused or at risk for abuse through education, advocacy, and community referral information.

Case study provided a description of the health needs of the women and children served by the shelter, providing the start of a database for further surveillance.

The long-term outcome was reduced victimization of children through comprehensive school-based education and parental involvement.

Intended long-term outcome would be the reduction in injury occurring as a result of assault.
addition, the dissemination phase needs to be improved through strengthening guideline education for public health nurses and modifying the guideline manual format to make access to information easier.

**Literature Quality Analysis Tool** Modifications were made in the literature quality analysis tool both during the initial use of the tool and after the completion of the 2 guideline sets. The tool needed further development in the evaluation of qualitative studies and more refined scales for evaluating the quality of evidence. For future guideline development, the project director, with input from health department staff and public health nurses in academic settings, created a manual called "Tools for Analyzing Evidence in Support of Public Health Practice." The manual lists detailed instructions for evaluating the quality of evidence and includes evaluation forms for: (1) qualitative studies, (2) quantitative studies—experimental or quasi-experimental designs, (3) qualitative studies—observational designs, and (4) articles featuring expert opinion. Each tool includes a numerical scale and formula to allow for comparison of studies. Most evidence variables are evaluated on a scale of 1 to 4.

**Integration of guidelines into practice must involve systematic incorporation into agency activities, personnel policies, and procedures.**

For example, Olds' study on the effects of home visitation on child maltreatment, a controlled clinical trial, was evaluated by using the following criteria: problem specification, intervention, sample, outcome constructs, outcome measures, internal validity, and external validity. An analysis of this study that used the revised evidence quality tool yielded maximum points on all criteria for a total score of 100%.

The revised tool is expected to facilitate the evidence gathering phase by clarifying what is good quality evidence and simplifying the comparison of studies. The revised process should reduce the time needed to evaluate and discuss each article for its potential contribution to public health nursing guidelines.

**Expert Panel Process** The efficiency of the expert panel could be improved through several strategies. Some of the analysis work could be shifted to graduate students, specifically, adding an initial evaluation of the extent to which practice relevancy criteria are addressed in the study. Considerable time in consensus meetings was used to affirm agreement on relevance to practice factors in comparing the views of the 2 expert panel members. Consensus meetings could be reduced by reporting areas of agreement to the panel in writing and by using the meeting time to discuss material on which 2 reviewers disagreed. Generally, panel members viewed the reading and analysis of the articles as extra work that could be completed only after other job responsibilities were met. For future development of guidelines, expert panelists should have the support of their agency in use of work time for guideline development.

Another possible strategy that may be best positioned to support the ongoing evaluation of evidence for public health nursing practice is a formalized service/educational partnership. The academic setting holds many of the resources necessary for the development of practice guidelines, such as expert researchers and electronic databases. State and local health departments hold the expertise gained from years of experience in practice settings. Collaboration between the 2 entities will yield the development of more useful and accurate practice guidelines than could be achieved singularly.

**Guideline Education for Public Health Nurses** Future dissemination of practice guidelines should incorporate application of the content to a much greater extent. The key is to offer an actual experience with guideline use in the introductory phase; examples include: (1) provision of case studies that highlight guideline use, (2) an application exercise that provides an actual problem and requires participants to use the guidelines to address the problem, and (3) establishment of regional teams that are led by a "guideline coach" in application of guidelines to current cases. Integration of guidelines into practice must involve systematic incorporation into agency activities, personnel policies, and procedures. For example, guideline discussion can be included in orientation of new staff, supervisor conferences, and job performance expectations. In addition, public health nursing guidelines should be included in public health nursing curricula in schools of nursing.

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**Guideline Manuals** Participants in the introductory in-services and guideline users voiced considerable concern about the volume of information in the guideline manuals. Although "easy to use" features were included in the guideline format, many potential users reacted negatively to the size of the product. The most frequent criticism was that the guidelines "were too academic for use." The following suggestions could increase accessibility of the guidelines to public health nurses: (1) offer the guidelines in distinct format options from simple to complex, (2) make appendices of "must-read" articles available only on request, (3) add a table of contents, an index, and dividers to the complete version of the manual, and (4) explore the possibility of making the guidelines available on a health department Web site when such technology is more widely available.

The guideline structure can be simplified by developing a fact sheet presenting the structure in a brief and simple format on one side of a sheet of paper with bullets to highlight practice recommendations, suggestions, and ideas. Another possibility for guideline structure is to provide an abridged version in addition to the complete version. The complete version would include the rationale of the expert panel members in selecting each guideline with one copy provided to each agency as a resource. In addition, a "Guideline Use Tip Sheet" could be developed that provides suggestions and examples for incorporating guideline use into management practices.

**CONCLUSION** The process of developing evidenced-based guidelines for public health nursing practice in Minnesota has been a true learning experience for all involved members. The
process was based on the work of others in Canada and the United States, but has produced a more refined instrument for rating and selecting quality research. MPEP is important because it has been introduced to and used with practicing public health nurses. The development process and literature quality analysis tool have potential value to other areas of nursing. Testing of the process and tool should be conducted in other practice areas of nursing. If we are to continue to be known as a professional discipline, practice based on scientific evidence is essential. Practice guidelines offer one alternative to achieve this goal.

REFERENCES

11. Practice guidelines for public health: assessment of scientific evidence, feasibility and benefits; a report of the guideline development project for public health practice. 1995. (Note: for information or copies of the report, contact University at Albany School of Public Health, Executive Park South, 1st Floor, Albany, NY 12203.)

SUSAN STROHSchein is a consultant for the Minnesota Department of Health, Section of Public Health, Metro Square #460, Box 64975, St Paul, MN 55164-0975.

MARIJORE A. SCHAFFER is a professor in the Nursing Department at Bethel College, St Paul, Minnesota.

BETTY LIA-HOA Berg is an associate professor at the University of Minnesota School of Nursing, Minneapolis.