

AMERICAN
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ASSOCIATION

Report of the Joint Coordinating Committee on Evidence- Based Practice

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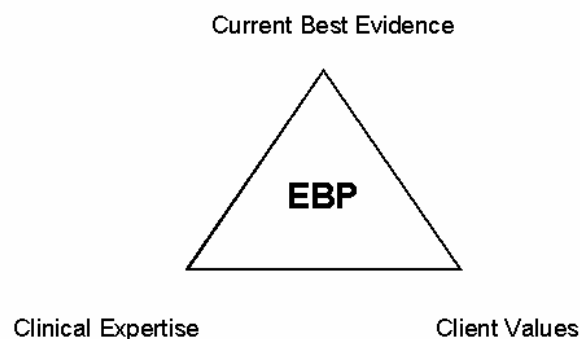
Note: In preparing its report, the committee took a broad view of the issues relating to evidence based practice and did not confine its vision to the immediate future. The recommendations presented herein are suggestions for further consideration, and it is recognized that available resources and other factors will determine the extent and timing of their implementation.

Report of the Joint Coordinating Committee on Evidence-Based Practice

Early in 2004, Celia Hooper, vice president for professional practices in speech-language pathology, and Ray Kent, vice president for research and technology, formed the Joint Coordinating Committee on Evidence-Based Practice. Committee membership comprises audiologists and speech-language pathologists representing clinicians, researchers, and teaching faculty in a variety of work settings. Moreover, members represent a variety of clinical/research interests and each demonstrates a career-history addressing an aspect of evidence-based practice. The Committee was charged with assessing the issue of evidence-based practice relative to planning needs and development opportunities for the American Speech-Language-Hearing Association (ASHA). The Committee convened for telephone conferences on April 12 and April 22, 2004. The Committee met for three days of deliberations from July 16 through 18, 2004 in the National Office. This report represents the unanimous recommendations of the Committee at the conclusion of that work.

Background

Evidence-based practice (EBP) is an important step forward for individuals with communication disorders and for our clinical professions. The goal of EBP is the integration of (a) clinical expertise, (b) best current evidence, and (c) client values to provide high-quality services reflecting the interests, values, needs, and choices of the individuals we serve. Conceptually, the trilateral principles forming the bases for EBP can be represented through a simple figure.



Because EBP is client/family centered, a clinician's task is to interpret best current evidence from systematic research in relation to an individual client, including that individual's preferences, environment, culture, and values regarding health and well-being. Ultimately, the goal of EBP is providing optimal clinical service to that client on an individual basis. Because EBP is a continuing process, it is a dynamic integration of ever-evolving clinical expertise and external evidence in day-to-day practice. Because EBP concerns all aspects of client-care, it

comprises the ASHA Scopes of Practice at all levels of clinical decision-making (e.g., measurement technologies, screening, diagnosis, intervention, prognosis, safety, efficacy, effectiveness, and prevention). In a public-health sense, the purpose of evidence-based practice in audiology and speech-language pathology (SLP) is improving sense-of-wellness and functional health among the clinical populations receiving our professional services.

Evidence-based practice is exceptionally important for the future of the clinical professions. Realizing the opportunity presented through EBP and fulfilling its purpose will require a paradigm shift in our general conception of clinical practice, clinical research, and their integration. Making a clinical practice evidence-based, moves the foundation for clinical decisions from clinical protocols centered solely on expert opinion to the integration of clinical expertise, the best current research evidence, and individual client values. Furthermore, the focus of clinical research becomes high-quality and systematic testing of specific clinical questions to provide practitioners the necessary evidence for informing their clinical decisions. Ultimately, the focus of concern for practitioners, researchers, and the Association, shifts from proving the worth of the professions to improving public health (e.g., the sense-of-wellness and functional health of individuals having communication disorders) in terms of communication.

Evaluating the quality of clinical scientific evidence is not simple or straightforward, and no single rating scheme can be applied successfully to all types of evidence. The general themes of validity, reliability, precision, relevance, and importance are common to evidence rating systems, but specific criteria differ according to whether the evidence concerns questions about screening, diagnosis, treatment, prevention, prognosis, or some other aspect of clinical practice. In addition, it should be recognized that evidence from “early-stage” investigations of a clinical question may be crucially important even though it cannot meet the stringent quality standards that apply to bodies of evidence in more well-developed areas. For this reason, no single “evidence hierarchy” can be used for all types of evidence and all types of studies; instead, each study must be evaluated with respect to its purpose and its context. Although formal evidence reviews by objective, broadly representative expert panels are an important long-term goal, the pressing immediate need is to ensure that ASHA members can identify, evaluate, and apply high-quality evidence in their clinical practice and/or research decisions, as well as to ensure that an increased emphasis on high-quality evidence is infused throughout the culture of the Association.

Challenges

In broad strokes, three challenges must be addressed to realize the potential of EBP. First, common understandings must be established. The Association and its membership must recognize the goals, principles, procedures, and technical language of EBP as it is recognized throughout the broader clinical research community (e.g., clinical and public health professions). Second, the literature bases must be optimized for EBP in terms of focus and format. Third, EBP must be made practical in the modern workplace. The skill set for EBP must be established throughout the workforce and resources provided to make EBP as practical as possible in the modern workplace.

A Possible Future

A future influenced by EBP holds promise for several positive outcomes. Chief among these is supporting and enhancing the welfare of individuals with communication disorders. The Association and its members also realize several benefits in a future influenced by EBP. Importantly, as scientific bodies of evidence expand and increase in quality, the literature base directly supports prospects for ongoing growth in (a) funding for research and (b) reimbursement for clinical services.

Individuals with Communication Disorders

Evidence-based practice comprises the interests of many parties (e.g., the Association, practitioners, researchers, educators, international colleagues, and individuals with communication disorders). Ultimately though, the many values that may be realized through EBP accrue to individuals with communication disorders. In that regard, the welfare of individuals with communication disorders constitutes a central and organizing focus for managing EBP. The Committee envisions a future having two very important attributes in this regard:

- Persons with communication disorders are active participants in their course-of-care through discussions with clinicians in selecting from among a set of best practices. Clients and practitioners discuss alternatives for best-practice and select the alternative that optimally reflects client values (e.g., preferences, concerns, expectations), clinical expertise (e.g., experience, knowledge, technical skill, and interpersonal communication skills for making shared decisions regarding a course of care), and current best evidence (e.g., scientific reports from systematic research).
- The effects of EBP (a) promote the adoption of effective protocols, (b) delay the adoption of unproven protocols, and (c) prevent the adoption of ineffective interventions.

The Association

As an organizing focus for planning and management, EBP presents an opportunity for comprehensive and integrated leadership throughout the Association. For instance, infusing the principles of EBP throughout the Association and its membership has great value for managing the future of the clinical professions. Furthermore, EBP presents a particularly attractive opportunity for national and international leadership and collaboration. The characteristics of a positive future for the Association include:

- The principles, purpose, and values of EBP are integrated throughout the institutional culture of the National Office of ASHA, its boards and committees, and its membership.
- The Association facilitates practitioners' access to best current evidence. The Association provides members resources for critically appraising that evidence (e.g., links to existing web-based forms and tutorials). Furthermore, the Association identifies

focused questions, conducts evidence reviews, disseminates those reviews and updates them on a regular basis.

- The Association sets criteria on process and product for recognizing clinical-practice guidelines developed by other professional organizations.
- The Association facilitates interrelationships, partnerships, and collaborations among practitioners, researchers, consumer groups, international colleagues and institutions, and colleagues and institutions in the broader clinical-research community (other clinical professions, public health).
- The Association cultivates relationships with other national organizations (e.g., the Agency for Healthcare Research and Quality or AHRQ, and the National Institutes of Health or NIH) with a view to enhancing the bases for EBP in audiology and speech-language pathology.
- The Association forms partnerships with consumers and consumer groups to address public-health questions and concerns.
- The Association becomes an international leader in the greater EBP professional community on the basis for delivering highest-quality clinical services.
- EBP is a prominent aspect of ASHA continuing education activities.
- The Association monitors the evolution of EBP in the broader EBP community and develops management plans as indicators of change become evident.

Practitioners, Researchers, and Educators

Potentially, EBP affects nearly all members in one way or another. Moreover, the nature of EBP motivates collaborations among consumers, practitioners, researchers, and educators. It is not difficult to foresee many high-value outcomes for members:

- Practitioners combine high-quality research evidence, clinical expertise, and client values to determine a course of care on an individual basis. That is, best-practices, informed by best evidence and delivered by highly-qualified professionals, are provided to individuals with communication disorders for the purpose of improving quality of life as perceived by those individuals.
- Practitioners independently implement the principles of EBP. The knowledges and skills of clinicians include (a) asking answerable clinical questions, (b) rapidly finding and accessing all best current evidence concerning these questions, (c) critically assessing that evidence for validity and relevance in relation to a particular client, (d) understanding the unique circumstances of a particular client and integrating these with best current evidence in making decisions about that client's care, (e) communicating clearly with clients and helping them weight clinical alternatives, (f) effecting consensus decisions, (g) providing high-quality clinical care, (h) evaluating the effectiveness of diagnostic, intervention, and other clinical procedures, and (i) continually updating, evolving, and adapting all aspects as new and better evidence becomes available.

- Practitioners communicate with the Association, with one another, with consumers, with researchers in their field, and with multidisciplinary researchers to improve their clinical decisions.
- Practice managers promote the principles of EBP and facilitate the use of EBP by their practitioners.
- Clinicians and researchers collaborate to develop focused clinical questions for informing research questions and conduct high quality empirical investigations.
- Researchers conduct high-quality clinical research with results reported in an EBP-friendly format.
- Clinicians and researchers evaluate the relationships within and among all components of the World Health Organization's *International Classification of Functioning, Disability, and Health (ICF)* including body function, body structure, activity/participation, environmental factors and personal factors.
- Researchers in communication sciences and disorders compete successfully for grant and contract funding to support clinical research. The number of grant application submissions for assessment and intervention research is substantially increased.
- Clinical-education programs in universities routinely instruct beginning clinicians in the principles and procedures of EBP.
- Research-education programs in universities routinely instruct new researchers in research practices supporting EBP.

Clinical Research

A consequence of EBP is an expanding literature base addressing high-priority clinical questions. Furthermore, reports of high-quality clinical research conforming to recognized standards throughout the broader EBP community enhance standing within that community. An expanding literature base supports funding for clinical practice and for further research. In a future influenced by EBP, a few reasonable expectations include:

- The types of research that are informing clinical practice include basic, translational, and applied research. New diagnostic and intervention protocols are systematically tested in the broadly recognized model for conducting clinical research: exploratory studies (Phase I research), feasibility studies (Phase II research), clinical trials (Phase III research), effectiveness research (Phase IV research), cost-effectiveness research, and consumer-satisfaction research (Phase V research). Furthermore, researchers are conducting studies of clinical questions through both group and single-subject research designs.
- The number of high-quality research reports concerning studies of clinical questions increases annually.

- Across the spectrum of clinical decisions (e.g., measurement technologies, screening, diagnosis, prognosis, safety, efficacy, effectiveness, and prevention), rich collections of high-quality scientific evidence support clinical practice for the full range of communication disorders.
- A literature optimized for EBP justifies funding for future research and for reimbursement of clinical services.

A Strategy for Meeting the Challenges and Realizing a Desired Future

The Committee views its purpose as offering recommendations to optimize the position of the Association, the clinical professions, and the membership with respect to EBP. Achieving that status will require a series of strategically determined actions implemented over a 10- to 15-year period. Some objectives can be realized without delay and in the near term. Others, for instance, building the bodies of clinical-research evidence, will require a longer time, adequate resources, and many focused efforts.

An important factor in forming a strategically determined plan for managing EBP is the difference between EBP and clinical-practice guidelines. The committee recommends deferring an immediate or near-term focus on clinical practice guidelines in favor of a focus on evidence-based practice. Facilitating and fostering evidence-based practice can, and should be, accomplished in the near term. In contrast, a desirable outcome in terms of clinical-practice guidelines is unlikely in the near term given the current state of the clinical-research evidentiary base (i.e., productivity in clinical research has not been sufficient for supporting EBP optimally and the form of reports are not as EBP-friendly as they need to be). Nevertheless, a desirable outcome in terms of clinical practice guidelines is possible in the longer run if the scientific literature base develops in extent and relevancy to EBP. Therefore, the first priority for action is promoting EBP throughout the clinical professions. This effort will entail concerted and high-profile efforts in (a) education (e.g., what EBP is, what it is not, technical parlance, aims, goals, values for clients, values for clinicians) and (b) facilitation (e.g., making EBP practicable, empowering clinicians with necessary resources and skill set). A guiding principle for these efforts will be appealing to accepted principles in the existing literature on EBP whenever possible (i.e., making EBP in audiology and speech-language pathology consistent with conventions throughout the healthcare community). Enabling member practitioners in terms of (a) developing the necessary skill set, (b) providing access to clinical evidence, and (c) providing assistance for conducting critical analyses of that evidence will make considerable and consistent demands for internal resources. This first strategic objective is likely accomplished in a roughly 2-4 year period.

The second priority will require a much longer window of expectation, but with comparable effort. The second priority is to optimize the research base for supporting EBP and, by extension, the eventual development of well-supported clinical practice guidelines. The dual effort in this objective is (a) increasing research productivity for informing evidence-based practice and (b) enhancing the quality of research for informing evidence-based practice optimally. In the middle term of outlook, this effort will inform evidence-based practice

progressively. In the long term, it will develop a body of research that will make a favorable outcome in terms of well-supported clinical practice guidelines a reasonable goal.

Transcending both priorities are activities within the Association aimed at monitoring the evolution of EBP in the broader professional and public health communities. Recognizing that managing EBP over the long run will require observation and prediction, the management system should include monitoring, analysis, and planning-revision components.

Recommended Actions

In early discussions, committee members recognized the importance of the recommendations contained in the then draft Technical Report on EBP by the Research and Scientific Affairs Committee (RSAC). The recommendations below amplify and extend those of the RSAC report. The recommended actions are organized in seven sections: (a) internal operations, (b) facilitating and supporting practitioners conducting an evidence-based practice, (c) conferences, (d) continuing education, (e) publications, (f) facilitating and supporting new research for informing EBP, and (g) supporting education for professional and research degrees. These sections are not mutually exclusive in a conceptual or operational sense; indeed, many are inter-related and reinforce one another. The sections are simply groupings of similar items sharing a mostly common purpose.

Each recommendation is accompanied by a priority rating (i.e., 1, 2, or 3). A rating of 1 indicates that the Committee believes action should be taken immediately. A rating of 2 or 3 simply connotes that an item necessarily follows the implementation of others -- rather than relegation in terms of importance. The ordering of recommendations on the printed page implies neither scheduling nor relative importance.

For ease and clarity in communication, recommendations below do not contain the words “should,” “could,” “must,” “might,” and so forth. Rather, the recommendations are expressed in straightforward language. The Committee members recognize the prerogatives of executive planners for choosing if and how any recommendation is to be implemented.

Internal Operations

The recommendations in this section are intended to realize three broad goals: (a) developing and nurturing a culture of EBP within the National Office, (b) optimizing internal consistency regarding management of the EBP matters, and (c) developing the posture of the Association as a leader in the EBP community.

Present EBP as an advocacy issue for individuals with communication disorders. Although clinicians and researchers are key figures in the long view of EBP, the essential issue is improving the lives of individuals with communication disorders in terms of sense-of-wellness and functional health through high-quality services which they consider important and valuable.

(1)

Extend and expand the Focused Initiative for two additional years to address the recommendations in this report. Revise Outcome 1 to read, "Increased knowledge of the availability and use of high-quality clinical research to support evidence-based practice in the communication sciences and disorders in the United States." Revise Outcome 2 to read, "Increased funding for basic and applied clinical research for informing clinical practice." Make a similar change in the language of Outcome 3. (1)

Develop a Position Statement on EBP to accompany the recently approved RSAC Technical Report on EBP. (1)

Enhance understandings among staff in the national office regarding the principles of EBP. Drawing directly from authoritative references in the broader EBP community, assert clear definitions of EBP and clinical practice guidelines (CPG) and distinguish the two in purpose and practice. Also based on established conventions in the EBP community, expand understandings regarding the roles of (a) research in informing EBP and (b) client values in informing EBP (including self and proxy reports). Offer occasional and ongoing continuing-education efforts to address unfolding developments in EBP. (1)

Ensure that ASHA documents and products use terminology that is consistent with EBP concepts and principles. Adopt the technical terminology of EBP as established throughout the EBP community. Use that technical terminology consistently in (a) all internal documents and communications and (b) in all communications with members (e.g., web pages, publications, continuing education products). Amend the "Products of Boards and Committees" report to replace the term *guidelines* with some alternate term(s). Evidence-based *clinical practice guidelines* meet rigorous criteria and are based on a systematic review of existing scientific evidence published in peer-reviewed journals. The term *guidelines* should be reserved for products of this nature. (1)

For the purpose of achieving internal consistency and efficiency, provide targeted educational experiences to central groups of individuals throughout ASHA who may take actions regarding EBP (e.g., Legislative Council, Board of Division Coordinators, Committees). (1)

Partner with consumer groups and health-communication experts to increase the evidence base for effective means for (a) meeting the informational needs of clients with varying levels of English literacy, (b) collaborating with families in assessment and intervention, (c) communicating results and recommendations with clients and families from diverse backgrounds, and (d) enhancing the health literacy of consumers to ensure that they possess the knowledge needed for shared decision making. (1)

Collaborate with international research groups in co-sponsoring international meetings or sessions at existing international meetings on EBP. (2)

Develop relationships with other professional organizations addressing the same set of issues (e.g., Allied Health Research Consortium, American Congress of Rehabilitative Medicine). (2)

Directly Facilitate and Support Member Practitioners in Conducting Evidence-Based Practices Through the National Center for Treatment Effectiveness in Communication Disorders

These recommendations might be listed under “internal operation.” However, the primary thrust of these recommendations is to move the Association to become a primary source for making EBP as practicable for member practitioners as is possible. In all likelihood, individual practitioners will not have the time or resources to implement EBP effectively unless they are supported by professional organizations. Institutional assistance and leadership are needed to place EBP within the grasp of individual practitioners. There is a remarkable opportunity for the Association to lead change that will substantially advance our clinical professions and improve the lives of individuals with communication disorders.

Form and sponsor a permanent Evidence Review Advisory Group for identifying clinical questions and assigning priority among them (per the report of the Research and Scientific Affairs Committee). Ensure that the Advisory Group includes consumers, clinicians, researchers, public health expertise, EBP in representatives of related other health-care professions, and expertise in CPG development. An initial task for this group is approving processes for (a) regularly soliciting candidate clinical questions within the scope of practice in speech-language pathology and audiology, (b) assigning priority among them, (c) convening panels of independent and broadly representative reviewers responsible for conducting evidence reviews on a given clinical question, and (d) developing procedures by which such reviews will be conducted, synthesized, and disseminated. With a transparent process in place, the Advisory Group begins convening independent and broadly representative groups (including all relevant stakeholders for each evidence need such as researchers, clinicians, members of related professions, and consumers much like the SIGN model) to conduct evidence reviews for selected clinical questions. (1)

Establish the Director of the National Center for Treatment Effectiveness in Communication Disorders (NCTECD) as the operation officer, and the Center as the operational and planning office, for accessing and analyzing evidence reviews on particular questions, providing panels with training in evidence appraisal and assisting panels in accessing evidence for review. The NCTECD makes the findings of review panels available to members. Furthermore, as the review assets accumulate, the Association progressively facilitates and directly supports EBP among member practitioners. That is, in addition to making the findings available to members, the NCTECD provides instruction in appropriate interpretation and usage (e.g., “This review represents current best evidence as of a certain date”; “To look for new research on this topic, try this search strategy”). Broadcast the results of reviews to the broader ASHA community as well as to relevant related professional organizations, to make research priorities clearly evident and to stimulate interdisciplinary research efforts when appropriate. Progressively, this process prepares the clinical professions for

independent evidence reviews and the eventual formulation of clinical-practice guidelines. (1)

Expand the focus of the NCTECD to facilitate and directly support EBP among member practitioners. (1)

Change the name of the NCTECD to represent a shift in focus from treatment effectiveness to EBP. (1)

As an initial step, task the NCTECD with developing a proposal for processes to solicit clinical questions, gather clinical evidence, and conduct systematic reviews. The National Center will then propose those processes to the Advisory Group and work closely with the Advisory Group in moving recommendations on process to final form. (1)

Task the NCTECD with directly facilitating and supporting EBP among members. For instance, broaden and develop current efforts by the NCTECD in partnering with other institutions/associations to conduct systematic reviews and make those reviews available to all members. (1)

Task the NCTECD with developing web-based tutorials for using the assets it makes available to members. The ultimate goal is to provide resources and direct support to member practitioners for making EBP as reasonable, practical, and efficient as is possible. (1)

Task the National Center with becoming the primary clearinghouse for member access to scientific evidence including databases from countries outside the U.S. and in languages other than English. Provide search “macros” to members for an ever increasing number of clinical questions. Make access to EBP resources a member benefit for the purpose of providing best practices to individuals with communication disorders. (1)

Task the NCTECD with supporting members in the critical assessment of scientific information by pointing to web-based tutorials and evaluation tools. (1)

Task the NCTECD with providing member education in EBP. Include the process for formulating CPGs and their appropriate use. (1)

Task the NCTECD with establishing criteria for the development of CPGs (perhaps following the SIGN model for CPGs development and the AGREE model for quality assessment). Promulgate the set of criteria and state that ASHA will recognize and advocate CPGs conforming to the criteria. (1)

Task the NCTECD with continually assessing the state-of-evidence regarding high-priority clinical questions through its various EBP activities. When an evidence base is ready for CPG assessment by an independent institution, the National Center nominates clinical questions to those groups. The NCTECD is the liaison office for monitoring the status of independently developed CPGs. This item embodies an important point:

through the NCTEED, leadership by the Association centers on preparing the clinical professions for independent development of clinical practice guidelines rather than developing guidelines internally. Guidelines developed through an advocacy organization will likely not be recognized throughout the broader EBP community given the potential for perceived conflicts of interest. Rather, the proposed strategy calls for the Association to (a) facilitate and support EBP, (b) facilitate and support a new generation of clinical research, (c) monitor the development of literature bases in terms of readiness for independent review, (d) make the products of those efforts available to members for supporting their EBP, (e) nominate clinical questions for independent review as indicated, (f) monitor those reviews, and (g) broadcast the outcomes. (2)

Task the National Center to continually monitor and predict developments in the field of EBP and formulate corresponding recommendations to executive planners. The National Center is responsible for making ASHA responsive to developments throughout the EBP community. (1)

Conferences

Establishing and nurturing a culture of EBP throughout the membership will require several early, extensive, and high-profile educational experiences. Some of the following items might be listed under continuing education. The purpose of listing them separately under the heading of conferences is to underscore the notion that early, prominent, and high-value national presentations are necessary for establishing the role of the Association in leading change on this important issue that so directly impacts the quality of services provided to individuals with communication disorders.

Dedicate a Pre-Convention program to education in EBP. For practitioners, the goal of the conference is facilitating and supporting EBP. For researchers, the goal of the conference is facilitating EBP-friendly research. For each audience, the purpose is enhanced understanding of the others' needs regarding EBP and facilitating collaboration. (1)

For the next 3-5 annual conventions, dedicate high-profile sessions to EBP at all levels (e.g., introductory, intermediate, advanced). Through the call-for-papers, solicit seminars, papers, and posters representing the broad spectrum of EBP topics. Offset travel expenses of practitioners (working within a variety of service-delivery models) proposing presentations of exemplary EBP. (1)

Invite national and international authorities in EBP (singly or in panels) from outside audiology and speech-language pathology (e.g., medicine, psychology, public health, the Scottish Intercollegial Guidelines Network) to make platform presentations at the annual conventions or other forums. (1)

Dedicate the program of a Schools Conference, a Health-Care Conference, and a Research-in-Communication-Sciences-and-Disorders:-Lessons-for-Success Conference to EBP education. (1)

Invite collaboration with the Council of Academic Programs in Communication Sciences and Disorders (CAPCSD) in contributing to an agenda of a future CAPCSD conference or in planning a co-sponsored conference on how to teach EBP both in terms of clinical education and research education. (1)

Develop a consensus conference on an important intervention protocol for which opinion is divided. Decide the topic and invite participants representing the range of interested parties (e.g., consumers, advocates, critics, clinicians, researchers, experts from related fields) to identify key research needs and protocols according to EBP criteria. Submit a proposal to NIH (or another agency) for funding or co-sponsorship of this conference. (2)

Develop consensus conferences for identifying priorities in research needs for informing EBP. These conferences contribute to the deliberations and decisions of the Advisory Group. (3)

Dedicate a Pre-Conference, a Lessons-for-Success conference, or special conference to increasing the number and quality of research products for informing EBP. The meeting has three purposes: (1) highlight options and quality indicators for clinical research methodologies in audiology and speech-language pathology across a variety of diagnostic and intervention protocols (e.g., device-centered diagnosis and intervention approaches, behavioral diagnosis and intervention approaches), a variety of clinical populations (e.g., pediatric and adult, acquired and developmental disorders of speech, language, hearing, and upper airway management), and a variety of service-delivery models (e.g., home-, center-, and school based, individual and group, clinician- and other-administered); (2) highlight options and quality indicators for grant proposal documents; and (3) highlight options and quality indicators for resulting manuscripts (e.g., the STARD, CONSORT, and TREND[†] statements and updates of these as they become available). Because high-quality clinical research is exceptionally important for the future of the clinical professions, multiple offerings of educational experiences and materials for increasing productivity and quality in clinical research is an especially important strategic initiative. (1)

Continuing Education

The following objectives might be accomplished through the ASHA web pages, *The ASHA Leader*, continuing education (CE) products, workshops, presentations (including those sponsored by the Scientific and Professional Education Board), or some combination of these.

[†] STARD designates the Standards for Reporting of Diagnostic Accuracy. CONSORT designates the Consolidated Standards of Reporting Trials. TREND designates the Transparent Reporting of Evaluations with Nonrandomized Designs.

No matter the medium, ensure that instructional materials refer to resources and standards established throughout the broader EBP community.

Establish a common understanding throughout the membership regarding the fundamentals of EBP. Clearly establish three central points: (a) the three basic principles of EBP, (b) the five major steps in conducting an EBP, and (c) the fact that EBP comprises the range of clinical activities represented in the Scopes of Practice (e.g., safety, prevention, screening, diagnosis, treatment). Furthermore, use technical terms and definitions as they are used throughout the greater EBP community. The Committee underscores the fact that many of these efforts will be reinforcing valuable steps toward these objectives that have already been initiated by staff in the National Office. (1)

Establish a common understanding regarding the difference between EBP and clinical-practice guidelines. Clearly establish what a clinical-practice guideline (CPG) is and draw distinctions and relationships regarding EBP. (1)

Establish a common understanding regarding levels-of-evidence. Clearly state that a single scheme for coding levels-of-evidence is not appropriate for the clinical professions. Emphasize the important point that the most appropriate system for coding level-of-evidence in any application is determined by the clinical question under investigation. Provide several examples. (1)

Initially, add links on the ASHA web pages pointing to already available web-based EBP tutorials. Eventually, develop a tutorial for the ASHA web pages. Develop the tutorial with examples from speech-language pathology and audiology but conform to the EBP standards as broadly recognized throughout the EBP community. Update for developments in EBP as indicated. (1)

Encourage CE Providers to develop proposals for CE activities that (a) address current best evidence and (b) critically assess the quality of that evidence in the course of an educational offering. Design the CE evaluation form to solicit participants' perceptions regarding the evidence presented to support recommended clinical decisions, not by rating the presented evidence according to a levels-of-evidence hierarchy, but rather through a series of questions about the relevance and validity of the evidence provided to support clinical recommendations. (2)

Develop and maintain a list of speakers on EBP from other professions, including public health. The list may begin with invited speakers at a national convention. Share the list with state association planners. (2)

Support EBP learning activities with interdisciplinary presenters through the Scientific and Professional Education Board. (1)

Provide and promote CE activities (consistent with the common understandings mentioned above) in institutions and associations that are important for ASHA members

(e.g., state associations, ASHA Divisions, State Advocates for Reimbursement (STARs), (State Education Advocacy Leaders (SEALs), school departments, Medicare). Develop a presentation, actively seek audiences, and make the presentation before those assembled groups. (1)

Provide CE activities or products targeted for managers of clinical practices. Design the learning materials to promote understandings for supporting EBP at the facility or service level. For instance, most performance improvement or quality improvement reviews address certain goals for a performance period, and one of these could incorporate EBP principles. (1)

Provide workshops with interdisciplinary presenters designed to integrate EBP with broader service-delivery issues (e.g., epidemiology, biostatistics, medical data management, and healthcare administration). Encourage speakers to include experiential learning opportunities (e.g., balanced scorecard techniques with multiple stakeholders can analyze prospects for process improvements). A case study approach can provide “lessons learned” in terms of interdisciplinary effectiveness. (1)

Make education of EBP (perhaps a focus on the necessary skill set) a theme of an issue of *The ASHA Leader*. Make an exemplary EBP a recurring highlight or feature in the *Leader*. (1)

Publish “buddy” or companion articles in the *ASHA Leader* (or web space) for selected articles recently published in ASHA journals. For consistency, assign the analysis and writing to an internal group of EBP experts tasked for this purpose (rather than primary authors). If web based, provide a link to the entire primary article. (1)

Encourage practitioner-researcher collaborations in conducting and reporting research for informing EBP. Discuss this project with the ASHA Foundation with a view to establishing a theme for an RFP funding cycle centering on clinician-researcher teams. Showcase the resulting presentations or publications through all outlets. (1)

Promote the placement of EBP articles in Division newsletters. Provide assistance in accessing and inviting recognized experts that will produce works that (a) apply EBP in certain service delivery models or with certain clinical populations and (b) resonate the general themes described above. (1)

Add links to the ASHA web site pointing to web-based resources regarding the fundamental tasks for EBP. Initially, highlight the existing link to PubMed and provide examples of prudent and practical use. Secondarily, add links to resources for asking answerable clinical questions, conducting critical appraisals of scientific evidence, and so forth (e.g., the web site for Consolidated Standards of Reporting Trials). Provide examples of applications for a variety of types of clinical questions (e.g., diagnostic, prevention, direct treatment). Consider developing ASHA-sponsored web resources, but only if it is determined that there is added value in doing so. (1)

Publish EBP “case studies” for a variety of clinical questions (e.g., safety, screening, diagnostic, direct treatment) in a variety of service-delivery models and for a variety of clinical populations. Identify prospective projects through solicitation or otherwise with a view to developing a partnership with a practitioner or practice. Provide the partner with guidance and resources to assure internal consistency regarding EBP. Publish the case studies in high-profile articles presented as exemplars. Use the case studies to systematically highlight the principles of EBP and reflect the issues and limitations of everyday practice rather than idealized solutions (what does a practitioner do when little evidence is available?). (1)

Make EBP a very prominent and user-friendly aspect of the ASHA homepage. From the front page, and from the SLP and audiology front pages, develop an easily understood menu of internal EBP links. Organize all EBP assets in an EBP site designed as a high-value member benefit to facilitate and support EBP. (1)

Enhance practitioner and scientist interactions and encourage partnerships by establishing an online forum for clinician-researcher exchanges encompassing outcomes measurement, finding evidence, interpreting evidence, posing clinical questions, and solving situation-specific EBP problems. A set of practitioners and researchers constituting a panel along with a monitor/manager for guiding the exchange would discuss the topic and take questions from attendees. (2)

Offer CEU credit for successfully completing training and/or participating as part of an evidence review panel. (3)

ASHA Publications

These recommendations center on editorial policies and actions for (a) optimizing the quality and value of research reported in ASHA journals for informing EBP and (b) expanding the literature base reported through ASHA journals related to EBP.

Invite a tutorial from an authority in public health policy describing the five-phase model of clinical research. The purpose of the article is to establish a common understanding, consistent with that in the broader EBP community, for how an experimental intervention undergoes programmatic testing (e.g., Phase I - exploratory research; Phase II - studies to establish feasibility for conducting a clinical trial; Phase III - clinical trials to test efficacy; Phase IV - studies to test effectiveness; Phase V - cost-benefit analyses). An emphasis of the article is underscoring the types of intervention research contributing to each phase of programmatic research, the value of each for publication, and the contribution of each for EBP (e.g., translational research, case-series reports, randomized controlled trials, and effectiveness studies). Ultimately, the purpose of this recommendation is to foster programmatic research (and thereby increase the efficiency with which experimental protocols are tested) in the paradigm that policy makers and regulators use to assess the status of experimental clinical protocols. Consideration can be given to reprinting one or more seminal articles on EBP that have appeared in other journals. (1)

Invite a series of tutorials (perhaps from authors outside our professions/disciplines) describing the spectrum of research designs that can inform EBP in diagnosis, screening, and intervention (along with indicators of quality for each). (2)

Increase the submission rate of high-quality manuscripts for informing EBP. Through one or more editorials, define and describe the types of research products that inform EBP (e.g., primary studies, systematic reviews, meta-analyses). Invite manuscripts corresponding to each type of research (including the full spectrum of designs from case-series to RCTs and those that involve client/family self-report and proxy measures). Describe quality indicators for manuscripts corresponding to each form of research and perhaps refer readers to exemplars in other literatures. (1)

Increase the utility of published research for informing EBP (e.g., make results meta-analysis friendly). Institute an editorial policy requiring quantities such as point and interval estimates of effect size, exact probabilities, confidence intervals on point estimates. Adhere to the Consolidated Standards of Reporting Trials (CONSORT) and Standards for Reporting Diagnostic Accuracy (STARD) recommendations whenever appropriate. (1)

Enhance the responsiveness and appropriateness of editorial reviews for manuscripts reporting clinical research that informs EBP. Conduct workshops for editorial boards and provide guidelines for manuscript reviewers. Provide educational resources such as articles and web sites (1)

Revise “Information for Authors” pages to include (a) conventions for reporting statistical results and (b) quality indicators for reviewing manuscripts reporting clinical research. Expand the “Scope” to include EBP-related manuscripts (e.g., translational research, Phase I research (e.g., case studies, case series, single-subject research, retrospective research), Phase II research (e.g., cohort studies, measurement research, case-control studies, studies of methodologies), Phase III research (i.e., efficacy trials), Phase IV research (e.g., effectiveness studies), and Phase V research (e.g., cost-analysis studies). Include resources to guide authors, such as the STARD, the CONSORT, and the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND). (1)

Publish supplement editions of journals containing invited tutorials and EBP-related primary studies. Supplements in journals with a focus on clinical practice address EBP per se; supplements in JSLHR address research issues. Topics for a research supplement might include (a) the appropriate selection and definition of control conditions, (b) the value of random assignment and design decisions for implementing whenever possible, and (c) appropriate analysis options when random assignment is not possible (i.e., when an attribute of an individual determines group membership). (1)

Publish EBP-relevant articles along with expert commentary by 3 or more individuals (having a career focus in EBP), with the intent of carefully examining the evidence and evaluating its impact on clinical practice. (1)

For the purpose of facilitating EBP among members, create open web-based access to all ASHA journals dating back to 1980. (1)

Explore models in other disciplines for making high quality and high impact clinical science from ASHA journals available to scientists in other professions. (3)

Facilitating and Supporting New Research for Informing EBP

To increase the extent and quality of research for informing EBP, it is imperative to increase the submission rate of high-quality grant proposals for randomized controlled trials (RCT) testing diagnostic, screening, and intervention procedures and including social validation measurement strategies. Equally important is increasing funding for all forms of clinical research.

Offer conferences designed to foster grant applications for clinical intervention research addressing screening, diagnostic, and treatment protocols. Please refer to the last recommendation under “conferences.”

Explore a relationship with funding agencies such as NIH/NIDCD, the U.S. Department of Education, and the Center for Disease Control and Prevention in developing an instructional resource for facilitating EBP RCT proposals (e.g., document, convention presentation, special conference) as well as proposals for planning grants. (2)

Facilitate interdisciplinary collaboration by inviting tutorials (perhaps from authors outside our professions/disciplines) describing research methodologies and indicators of quality in corresponding grant applications. Make the tutorials inclusive of the full spectrum of clinical research paradigms (e.g., from case-series to RCTs and beyond in the case of treatment research) to increase the submission rate of high-quality grant proposals involving diagnostic, screening and intervention research and social validation measurement strategies. Highlight quality studies of clinical questions from other disciplines when these concern patient populations with whom speech-language pathologists and audiologists also interact. (2)

Establish a link on the ASHA web pages to web-based registries for ongoing clinical trials. (1)

Supporting Education for Clinical and Research Degrees

To ensure that evidence-based practice becomes a part of the culture of the clinical professions, it is necessary to incorporate EBP into the pre-service education of speech-language pathologists and audiologists. Through the Association and related organizations, then, professionals charged with educating future speech-language pathologists and audiologists will have a variety of informational sources and resources to infuse EBP concepts and activities into the curricula for clinical education and for research education.

Present hands-on, informational sessions on incorporating EBP in clinical-education curricula. Explore partnerships with Division 10 and CAPCSD for creating and disseminating information for university instructors. (1)

For teaching faculty, develop a selected readings list containing articles and web sites on instruction in EBP. (1)

Through partnerships, develop models for integrating academic and clinical instruction on EBP (e.g., use of a template for translating evidence to treatment; worksheets for evaluating clinical research used in academic and clinical courses). (1)

Through partnerships, develop a listing and explanation of the necessary knowledge and skills for conducting a practice that is evidence-based. (1)

Promote specialized education in clinical research for doctoral students and new investigators, including linking these new investigators to existing opportunities and workshops presented by researchers with expertise and “track records” in conducting studies consistent with EBP principles (NIH, Deafness Research Foundation). (1)

Develop or compile components of syllabi that describe the relevance of EBP to specific courses (e.g., samples of learning outcomes and learning activities for clinical education and for research education). (2)

Investigate opportunities for cross-disciplinary education and experience in EBP, drawing, for example, on parallel instructional efforts in medicine and allied health. (2)

Through a partnership with NSSHLA, develop a means for presenting systematic reviews conducted by students, or with student assistance, along with independent appraisals of such reviews. (3)

Conclusion

The futures and interests of individuals with communication disorders, practitioners, and researchers are all served through EBP. It follows that the future and interests of the Association are served through promoting EBP. Indeed, EBP represents an important opportunity for the Association to (a) advocate for the interests and well-being of individuals with communication disorders, (b) lead change as a strategy for managing the growth and stature of the clinical professions, and (c) integrate the Association in the interdisciplinary community of individuals and institutions leading the development of EBP and related matters (e.g., clinical research, clinical education).

Absent institutional leadership and resources, EBP may be perceived as a high-minded but impractical goal. As a result, clinical practice as well as clinical intervention research will continue along present trajectories. Furthermore, allowing the future to unfold based on a variety of idiosyncratic notions regarding EBP will likely serve more to constrain and restrict the development of the clinical professions in the long run than to foster growth and development.

Managing EBP as a growth and development initiative will impact most, if not all, aspects of the Association and most, if not all, members. Such an important initiative will require (a) a quick beginning, (b) dedication to purpose over several years, and (c) a commitment of resources for promoting EBP and for making it as practical and efficient as is possible in the modern workplace. Such a comprehensive initiative will require (a) coordinated and integrated management through many administrative and executive offices and (b) infusing an EBP culture throughout the Association and its membership.