# From the Schools of Public Health



# USING THE WEB TO TRANSLATE HEALTH COMMUNICATION RESEARCH TO PRACTICE: THE HEALTHCOMM KEY

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The field of health communication has grown dramatically in recent years with its own science base, journals, training programs, and national goals and objectives.1 However, a challenge remaining in the field is the lack of ability to effectively translate and disseminate findings from health communication research so that practitioners, researchers, and students can apply best practices of health communication to public health interventions and programs. To help address this challenge, the Center for Public Health Communication (CPHC) at the Rollins School of Public Health at Emory University was selected to design and develop a web-based "researchto-practice" synthesis and dissemination tool called the "HealthComm Key." This web-based application, conceived and developed by the Centers for Disease Control and Prevention (CDC) during the 1990s, was created to be a single comprehensive resource of published, data-driven health communication literature "focusing on communication research and practice within the context of public health."2 With support from what is now known as the National Center for Health Marketing at the CDC and the Association of Schools of Public Health (ASPH), the Emory CPHC team developed and implemented a detailed plan to reformat the article annotation database structure, update and expand the volume of annotated summaries accessible to public users, and improve the web-based tool's functionality and usability by implementing a "Google-style" search engine. Further, additional variables were added to HealthComm Key to facilitate analysis of health communication research trends, study synthesis, and meta-analyses.

HealthComm Key, in its current version (http://www.healthcommkey.org), now contains regularly updated article summaries presented in a manner and language designed to be understandable for practitioners and students. This article reviews the development of the HealthComm Key, highlights its key features and components, describes the annotation process, presents data on its development and use, and discusses future plans for expansion and implementation.

## RESEARCH TO PRACTICE: BUILDING A "KEY" RESOURCE

The challenges related to effectively translating published research to professional practice are not unique to health communication. At the heart of the challenge is the inherent contradiction that researchers are encouraged to disseminate their findings in peer-reviewed academic journals, yet many practitioners do not read these journals for lack of time, access, and/or understanding. Instead, practitioners may turn to books or planning guides to inform their health communication programs, but these resources may draw on limited research and can quickly become outdated. New websites such as Google Scholar and BioMed Central can increase access among practitioners to the published health literature, but these online tools may be difficult to navigate. Further, most online databases compile jargon-laden abstracts with limited programmatic and evaluation details that do not provide access to detailed information or full-text articles.

The goal of HealthComm Key is to be an important, or "key," resource for the field of health communication by unifying the diverse body of health communication literature. Because health communication draws on theories and foundations from many other fields including communication, public health, marketing, health education, medicine, psychology, and other social and behavioral sciences,³ health communication literature is spread across many journals and databases. Like other transdisciplinary fields, the relevant health communication research literature can be difficult for practitioners to locate and access. Therefore, the challenges for the HealthComm Key are (1) to encompass all relevant health communication articles from the peer-reviewed literature, and (2) to present the information online in an accessible and easy-to-use format.

### REDESIGNING AND IMPLEMENTING HEALTHCOMM KEY

In 2002, our team at the CPHC began the process of redesigning HealthComm Key by identifying and reviewing the interface and design structure of other web-based literature resources, and by soliciting input from health communication practitioners. After reviewing several sites and gathering audience feedback, it was determined that the "front-end" interface (website viewed by users) of the new HealthComm Key website should have an uncluttered appearance for easy navigation coupled with comprehensive search functionality so users can look through all possible database fields. In addition, the CPHC conducted a critical appraisal of the existing annotation structure, made revisions to numerous annotation fields to provide more depth and breadth, and added additional fields to facilitate meta-analysis and literature trend-analysis (e.g., health issues addressed, theoretical models employed, and communication channels used in the research or evaluation).

The "back-end" of the database, the interface used by team coders and editors, required new programming, as the

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CDC-hosted database was programmed in a language no longer supported by CDC. The CPHC programmer developed the HealthComm Key application in SQL-Server language using ColdFusion,4 and the entire tool is now hosted on servers at the Rollins School of Public Health at Emory University. The new structure has the capacity to store thousands of literature annotations in a fully-searchable, easily retrievable format. Moreover, the back-end web-based application, unlike its previous version, now allows team members to enter their annotation content directly to the online database from web-based templates, thereby facilitating rapid uploading of new material into the system. As new annotations are regularly added to the queue for review and annotation, the flow of articles is tracked online to monitor annotation progress and maintain internal accountability for quality control. Prior to its launch, component and system testing were performed along with product beta testing to ensure that, among other aspects, the "Google-style" interface worked efficiently for easy search capability.

#### ARTICLE IDENTIFICATION AND CONTENT DEVELOPMENT

At the outset of the project, it was clear that revisions were needed for the identification of new articles to include in the HealthComm Key and to the process for writing and editing new annotated summaries. In the initial phase of redevelopment, health communication articles were retrieved using online searches with selected health communication keywords in all available online literature databases. All possible health communication-related articles were identified by reading titles and abstracts, obtaining full-text copies of all promising articles, and reviewing each article to determine if it met the HealthComm Key inclusion criteria. More recently, the HealthComm Key has utilized the comprehensive health communication bibliography published in the journal Health Communication to locate potentially eligible articles, and will use their proprietary search strategy to identify health communication articles from previous years that are not yet included in the database.

English-language, "data driven" articles (i.e., they involve the collection and/or analysis of data and are not simply program descriptions, methods reviews, etc.) are eligible for inclusion in the HealthComm Key if they meet one or both of the following criteria: (1) they use a communication channel (e.g., television, internet, billboard) to deliver a significant component of a program or intervention that is being researched or evaluated, or (2) the concepts being explored in the research or evaluation relate to communicationrelated principles in the development or delivery of a program or intervention.

To improve the accuracy and quality of new annotations prepared for the HealthComm Key, a three-stage peer-review process has been implemented. Each new article for annotation is put into an online queue where a trained coder retrieves it, reads the entire article (sometimes several times), and completes the initial annotated summary. These initial annotations can take from two to three hours, on average, depending on the length and complexity of the article. Completed annotations are placed into another online queue from which a peer reviewer retrieves it, reads the article and annotation, and makes corrections as necessary. Peer review often takes from one to two hours per article. Finally, the peer-reviewed article is retrieved from another online queue by a senior team member and reviewed for editing, quality assurance, and accuracy checking, taking approximately one hour. Each annotation in the database goes through this detailed process prior to becoming available to the public users.

#### USING THE HEALTHCOMM KEY

Upon entering the website (http://www.healthcommkey.org), users are required to register for free access by providing their work setting, occupation, education level, and e-mail address (See Figure). Collecting these data at registration allows for the identification of audience volume, evaluation of user retrieval patterns, and offers the potential for future communication with users about HealthComm Key news and new features. Throughout the "branding" process, the team worked with a professional graphic designer to develop new graphics for the site and a new product logo. The index page also includes a new tagline, "Unlocking your program's potential," that is used to brand all HealthComm Key promotional efforts.

Since its official re-launch in late 2004, more than 200 people have registered as HealthComm Key users, representing educators, researchers, students, and practitioners from diverse work settings throughout the U.S. Once logged in, HealthComm Key users can conduct searches to find article summaries by entering one or more search terms in the search box. Each search is conducted against all article annotation fields, which include author names, titles, health issues, methods, and population descriptions. Other features accessible from the HealthComm Key site include a page describing the project history and team, a page providing web links to helpful health communication resources,

Figure. The HealthComm Key Homepage (http://www.healthcommkey.org)



and a page collecting anonymous user feedback about the site functionality and development. Future components that may be added to HealthComm Key include reviews of the most popular searchers and articles, summaries or links to health communication literature reviews and methods articles, and searchable versions of other health communication resources such as course syllabi, funding opportunities, and job/internship opportunities.

#### ANALYZING HEALTH **COMMUNICATION TRENDS**

In addition to providing key information to facilitate the translation of research to practice, the redesign and expansion of HealthComm Key created an opportunity to record and track detailed characteristics about published peerreviewed health communication research and evaluation studies. Of the 40 fields into which each article is annotated, 17 fields are "close-ended," meaning variables (e.g., source, channel, type of research design) are stored in the database as quantitative data. Once the backlog of missing articles is added to the database, detailed analyses will be conducted on these data to better understand the current state of the art in health communication research. Additionally, analyses of these data over time, both retrospectively and prospectively, will provide a detailed picture of health communication research trends. Further, data from multiple articles, organized by variables such as year of publication, funding source, communication medium, or health issue, can be synthesized for review articles or meta-analyses to help build the field's evidence base and help identify best practices in health communication.

#### THE FUTURE OF HEALTHCOMM KEY

The number of published health communication articles continues to increase each month. In addition, there are perhaps several hundred published health communication articles from the past decade that are not yet entered into the database. Therefore, the first two priorities of the CPHC team are to identify and annotate all previous missing articles for inclusion into the database, and to identify and

annotate all new health communication articles as they are published. To this end, the CPHC recently agreed to a partnership with the journal Health Communication to use that journal's proprietary literature search algorithm to identify all previously and recently published health communication articles. Further, the CPHC recently hired and trained a new, expanded group of article annotators in an attempt to increase the speed with which new articles are added to the database. In its present form, HealthComm Key contains detailed information that can greatly benefit practitioners and researchers developing or evaluating public health programs with a health communication focus or component. In the near future, once the database is up-to-date, the HealthComm Key will become the key resource for comprehensive best practice and evidence-based information for the entire field of health communication.

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