FEATURED PROGRAMME

Injury prevention in the information age: the Injury and Violence Prevention Library

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Injury control is multidisciplinary, involving disparate fields whose body of knowledge is rarely found in a single repository. As shown in fig 1, there are at least 11 disciplines whose areas of inquiry have direct bearing upon some aspect of injury and violence prevention. Practitioners within these disciplines circulate information through formal channels (academic and non-academic). Information is also shared through informal venues, such as conferencing, networking, and e-mailing. The internet, and particularly the world wide web (WWW), have become major contributors to the ever increasing body of information relevant to injury prevention. The lines dividing all of these domains are permeable: information flows among professionals in different disciplines by means of formal and informal venues. Ideally, all of the relevant information from these sources is made available to the prevention practitioners who are at the core of fig 1.

The proliferation of information is an advantage to practitioners—but only if they have access. As we struggle to adjust to the "information age", we face a paradox in which information overload is combined with the daily challenge of finding the facts and figures we need when we need them. Corporate and professional organizations now commonly employ "information specialists" and have their own specialized libraries. Many such specialists have masters' degrees in library science and in a subject area relevant to their field. Traditionally termed librarians, information specialists serve as information *mediators*—people who understand what information exists, where it is, who needs it, and how to get it. Working closely with practitioners, they link in specific ways the universe of information sources with the universe of information users. Thus, they provide practitioners with information that can be translated into action. For public health practitioners, this means shaping sound prevention policies and programs, and, ultimately, saving lives.

Moving toward improved access to information: the Injury and Violence Prevention Library

Specialized injury prevention information services require financial resources which are not readily available to practitioners in small community based organizations or in developing
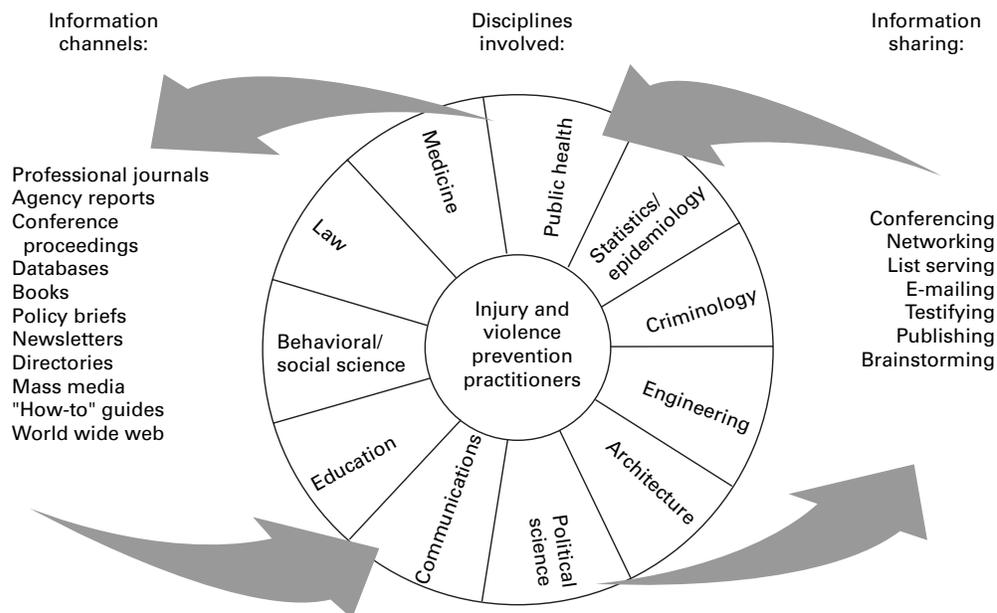
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Figure 1 Conceptual model of multidisciplinary information exchange for injury prevention.

countries. To compensate, the injury control field needs accessible information services for those with limited funding.

The Trauma Foundation's Injury and Violence Prevention Library, established in 1986, is one model for improving access to information by injury prevention practitioners. The Trauma Foundation is a tax exempt, non-profit organization committed to reducing injuries and injury deaths by focusing on policy advocacy and development. The library is key to achieving the goals of the Trauma Foundation and practitioners outside the organization. It provides access to information, especially in violence prevention.

The mission of the library is threefold: (1) to collect and store resources about injury and violence prevention; (2) to facilitate the flow of information; and (3) to identify information gaps in the field. The library has a staff of three information specialists with masters degrees in library science, two additional staff working on the development and maintenance of the organization's WWW pages, and several volunteers. Funding sources for the library include public and private monies.

Collecting and storing resources about injury and violence prevention

The first component of the library's mission is to collect, in a central repository, injury and violence prevention literature and data from various sources. Advocates who use public health strategies rely on information residing in a variety of disciplines, journals, books, and databases. Relevant materials include government documents; books, journals, policy updates, bibliographies, morbidity and mortality statistics, data sets and databases from the social and health sciences, the criminal justice and legal fields, engineering and lay literature; and reports and gray[1] literature from non-profit and advocacy organizations.

The library's collection includes approximately 20 000 documents, of which 6500 (the entire violence collection) are searchable in a bibliographic catalog. The classification system is based on a public health approach to injury prevention. In addition, the library has assembled and maintains several computerized databases, including one containing profiles of over 3000 injury and violence prevention programs across the United States that will soon be available on the organization's WWW pages.

Facilitating the flow of information

In contrast with models of information exchange in which information flows in one direction, from source to user, the library resides at the core of a productive synergy. The library primarily serves injury prevention advocates, program planners, researchers, the media, educators, policy makers and, secondarily, the general public. Because of the daily interaction between the Trauma Foundation's library and program staff, the staff are well informed about the information needs in the injury field. As subject specialists, they help sort out and focus requests from sources outside the Trauma Foundation and are well positioned to help practitioners determine the information they need. Library staff combine subject knowledge with information retrieval skills. This enables them to search many databases using the controlled vocabulary of each to extract relevant information, and they are able to conduct in-house and on-line literature searches specific to all aspects of injury control. They know what material might address a particular request, its relationship to and implications for policy, and the broad categories of information that do not exist. In turn, the library staff's interaction with a broad array of injury prevention practitioners assists the Trauma Foundation's program staff, by broadening the organization's understanding of critical injury issues in the community, in health departments, and in academia. Program staff use the knowledge and insight gleaned through interaction with practitioners to inform policy approaches.

Rapid response is as important as the synergistic flow of information. Thus, in addition to phone and fax, staff use the internet and WWW for rapid information dissemination and communication. They manage two WWW pages, http://www.traumafdn.org and http://www.pcvp.org, that provide user friendly data and statistics, access to documents, policy updates, funding information, profiles of those working in the field, and links to related WWW sites. Library staff sift through and evaluate the voluminous (and sometimes inaccurate) material available on the WWW, identifying sites that provide *valuable and valid* information. In addition, the staff manage and participate in several closed electronic mailing lists on violence prevention.

Identifying information gaps

The third component of the library's mission is to identify information gaps in the field. What we don't know is often as important as what we do know. Library staff monitor the information flow, and know when and often why information does not exist. For example, "how many adolescent date rapes involve alcohol?" is an important question for which data are not readily available. If a rape is not reported to the police or does not result in a medically treated injury, it will not be included in any health or criminal justice data. If a rape victim is treated in an emergency department, her medical record may be assigned an external cause of injury code (E code) for rape (E960.1), but the emergency department records, even if computerized, may not be collected in a centralized data system. In any event, E codes do not include information on alcohol involvement in injury, even if known. Moreover, blood alcohol concentration screening is not routine, and even if screened, only the patient is considered, not other persons involved in the injury causing event. The lack of such information suggests policy directions, and the development of a research agenda that guides academic researchers and funders to conduct special studies on

key questions. Injury prevention information specialists are well positioned to identify and address such information gaps.

The fact that few people are aware that injury prevention information specialists exist, or how they can help, could in itself be considered an information gap to be corrected. Injury prevention is a relatively new field, and information specialists are among its newest resources. Because the injury problem is so pervasive, and information production ever increasing, the need for specialists who understand both injury prevention and information resources will also increase. Library staff work with the information science staff at the Centers for Disease Control and Prevention's National Center for Injury Prevention and Control and the Educational Development Center's Children's Safety Network to close the gap between injury control practitioners and information specialists.

Another important gap is the inequality in availability of and access to information about injury prevention and control, particularly in developing countries. Most of the world's population is information poor—without so much as access to telephone service, much less to the internet. The information explosion and the technological advances driving it are rapidly polarizing society into two groups: the information rich and the information poor. The technologically information rich have fast computers and modems, a mastery of computers, time to devote to using them, and the means to afford subscription and service fees for on-line services or major proprietary databases.

The gap between the information rich and information poor exacerbates existing socioeconomic differences, which, in turn, widen the gap—thus creating a vicious cycle. Technological skills and access to resources are crucial, given that "...the availability of information is changing relationships among individuals, organizations, and nations".[2]

Technology, however, is just one part of the inequality equation. The lack of information about the scope of injury in developing countries, the relative lack of access to global injury prevention information, and the absence of resources within specific communities for addressing injury issues are merely a few examples of contributing factors. The scope of this paper prohibits us from fully addressing these issues without trivializing them. However, because injury is a leading cause of death in developing countries,[3] a lack of access to injury prevention information is a serious problem. Much more must be done to assure that all injury control practitioners participate in information sharing. Information rich practitioners should recognize the importance of exchanging information about research and programs with their colleagues in developing countries as well as with the information poor within their own countries. Traditional (non-electronic) delivery of information should continue and expand in areas where electronic information is least accessible.

Electronic communications in information rich countries—in the European Union and elsewhere—facilitate timely international information sharing and collaboration. Computerized on-line databases provide access to some of the literature published throughout the world, not merely to those journals for which one's library has a subscription. These tools allow practitioners to benefit from worldwide developments in injury control leadership. For example, bicycle helmet policies in Australia,[4 5] unique injury data resources in New Zealand,[6] or firearm policy in Great Britain[7] can be examined while sitting before a computer. In addition, the emerging custom of attaching an e-mail address to articles and letters permits a dialogue between author and reader, and electronic mailing lists speed information simultaneously to colleagues around the globe. The library has used e-mail to communicate with gun control researchers in Australia, and advocates in New Zealand interested in preventing pediatric burns and scalds.

Information into action

Our ultimate goal is to prevent injuries and their consequences. The Trauma Foundation's Injury and Violence Prevention Library supports this goal by facilitating the transformation of information into preventive action. What follows are examples of how injury control practitioners have used the library and how Trauma Foundation program and library staff have assisted in their work.

The library frequently receives requests for information about current violence prevention programs. Individuals and organizations are interested in knowing what violence prevention programs currently exist in their community, if any of them are hospital based, and whether their programs include, for example, mentoring, conflict resolution skills, or special attention to teens or youth gun violence. Library staff can search their database and retrieve lists of programs tailored to meet the requester's needs. This enables practitioners to identify existing programs whose experience can inform on-going program planning and evaluation, thus avoiding duplication of efforts and waste of precious resources.

The library's bibliographic catalog includes specific violence prevention curricula, which become useful tools for prevention practitioners. For example, while designing an elementary school curriculum on violence prevention in California, Richmond's Community-In-Peace Partnership asked library staff to conduct a literature search to find existing curricula. Library staff provided them with four such curricula, and the group was able to combine elements of each.

The library also makes research available to those who can best use it. Academic researchers are skilled in finding and abstracting useful information from the published research literature. Others, however, such as community based advocates, funders, policy makers, and journalists whose work is important to injury control may have less access to university

libraries, less training in search strategies, and less time to explore resources.

Because "good public health programs start with good data",[8] library staff communicate with data managers at national and state health and criminal justice agencies to determine what data exist, and how they can be made "user friendly" for practitioners. The Trauma Foundation's WWW site links with related sites when appropriate, or reconfigures data to present on its own pages. When possible, the library also presents data in a more detailed fashion than is generally available from agency tables.

For example, Trauma Foundation program staff prepared a data rich *Profile of Injury in San Francisco* using death certificate, hospital discharge, emergency department, paramedic, and police data.[8] Library staff put the entire report on the Trauma Foundation's WWW page for easy access by city agencies such as the health department. The local SafeKids coalition requested a reconfiguration of the data specific to children, and this contributed to the organization's press conference about program initiatives. Trauma Foundation staff are also working with the California Department of Health Services to establish a searchable injury mortality and morbidity database.

Community based advocates in California have been addressing the state's firearm injury problem through local ordinances and state legislation. To document firearm injury and death as a local public health problem, library staff have provided state, county, and local statistics for firearm injury and death by specific age and ethnic groups. For example, Women Against Gun Violence consulted with library and program staff in the preparation of their report enumerating firearm deaths in Los Angeles by legislative districts. In addition, aides to members of the California Assembly have contacted the library several times for statistics on accidental shootings and safety standards.[9] These data were used during the Assembly's recent consideration of a bill that would have extended to domestically manufactured firearms the safety standards mandated for imports. The Utah Department of Health, and the Alaska Department of Health and Human Services, have also requested California data on motorcyclist injuries. In the latter two cases, documented reductions in costs, morbidity, and mortality since California's motorcycle helmet law was implemented were used to support state level legislative efforts regarding motorcycle helmets in Alaska and Utah.

The work of the Berkeley Media Studies Group (BMSG) also illustrates the role that library staff have in transforming research into action. Because interpretation of information is so important in media portrayals of public health issues, BMSG recently produced *Reporting on Violence,* a briefing book for journalists.[10] The book presents data that help journalists frame stories about violence in terms of the larger social context of a single event, rather than a more narrow focus that depends only on personal stories and criminal justice statistics. Sample articles are used to illustrate methods of presenting appropriate data. The authors and library staff worked together to ensure the reliability of the information presented in the book, as well as the breadth of data sources.

The library responded to a request from the staff of Youth Radio for background information to be used in a feature piece on youth and guns. Youth Radio staff wanted to study key arguments for and against gun control and about the effects of gun control legislation. Library staff gave youth reporters articles from various perspectives. Included were analyses of the US Constitution's Second Amendment, reports addressing the need for regulation and control, articles detailing the effectiveness of various gun control measures, and pertinent statistics.

Trauma Foundation program staff recently facilitated a project to increase collaboration among professionals working in alcohol policy, violence prevention, and injury control. The library staff conducted on-line literature searches in Medline and other databases, and downloaded the abstracts of over 265 studies. A one day workshop brought researchers from the three fields together to discuss strategies to synthesize and disseminate what is known about this problem. As a result, the Robert Wood Johnson Foundation has funded a Trauma Foundation project to synthesize research findings from the literature in the various disciplines, and make it available in a printed resource manual and on the WWW.

Conclusions

Access to injury prevention information is important, but difficult for many. Specialized information services, such as the Injury and Violence Prevention Library, serve as a critical link between information sources and information users, and facilitate the use of emerging electronic communication technologies. Financial and other resources for injury prevention programs in general are scarce. In light of the importance of information specialists, private and public funders should be persuaded to allocate funds to efforts to expand and improve such services. Specialized information services must become an active partner in injury control.

1 Interagency Gray Literature Working Group, "Gray Information Functional Plan" 18 January 1995. http://www.dtic.dla.mil/summit/tb07_2.html (12 August 1997). "Gray literature is foreign or domestic open source material that usually is available through specialized channels and may not enter normal channels or systems of publication, distribution, bibliographic control, or acquisition by booksellers or subscription agents".
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Editorial Board Member: brief biography

ANGELA DENISE MICKALIDE, PHD, CHES

Angela Mickalide is the Program Director of the National SAFE KIDS Campaign, the first and only nationwide program to prevent unintentional injuries to children aged 14 and under. In this capacity she works to develop, implement, and evaluate injury prevention strategies in several risk areas including bicycle safety, residential fire detection, scald burn prevention, and child passenger safety. The National SAFE KIDS Campaign consists of more than 230 state and local SAFE KIDS coalitions in 50 states, The District of Columbia, and Puerto Rico.

Dr Mickalide graduated *summa cum laude* from Colby College in Waterville, Maine in 1979. She earned her PhD degree in 1985 at the Johns Hopkins University in Baltimore, Maryland, specializing in public health and psychology. She is an adjunct associate professor in the masters of public health program at George Washington University.

Before joining SAFE KIDS Dr Mickalide worked at the federal Office of Disease Prevention and Health Promotion, US Public Health Service in Washington, DC. She was responsible for coordinating the work of the Preventive Services Task Force whose efforts culminated in the publication of the *Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions*.

Dr Mickalide has made presentations and published extensively in the injury control, health education, and clinical preventive services areas. In addition to work for *Injury Prevention*, she has served on the editorial boards of *Patient Education and Counselling* and *Health Education and Behavior*. She also reviews articles for several other publications including *Health Education Research* and *Public Health Reports*.

Over the past few years Dr Mickalide has received numerous honors and awards including the Early Career Award from the American Public Health Association Public Health Education and Health Promotion Section and the Health Service Commendation for exemplary performance as Staff Coordinator of the US Preventive Services Task Force.

She resides in Kensington, Maryland with her husband Alexander Alikhani and their two "SAFE KIDS", Anna 6 years and Andrew 4 years.