

Building Capacity for International Tobacco Control Research: The Global Tobacco Research Network

The Global Tobacco Research Network (GTRN) was developed to enhance global tobacco control research through information sharing and collaboration among researchers. The formation of the GTRN is timely because of the need to ratify, implement, and track the Framework Convention on Tobacco Control.

While the spectrum of international tobacco control research continues to expand, resources to support these efforts are still quite limited. As an issue-specific network focused on information sharing and capacity building associated with tobacco control research, the GTRN will provide an opportunity for enhancing the effectiveness of tobacco control initiatives. (*Am J Public Health*. 2005;95:965–968. doi:10.2105/AJPH.2004.047183)

Frances A. Stillman, EdD, EdM, Heather L. Wipfli, MA, Harry A. Lando, PhD, Scott Leischow, PhD, and Jonathan M. Samet, MD, MS

GLOBAL TOBACCO CONTROL IS

at a crossroads. On the one hand, there is strong evidence about the health effects of active and passive smoking, and there has been considerable progress toward understanding what constitutes effective tobacco control strategies. Moreover, many evidence-based strategies have been included in the Framework Convention on Tobacco Control (FCTC).¹ On the other hand, diminishing returns, complacency, and failure to translate evidence into practice threatens to undermine much of the excellent tobacco control work undertaken to date, and many low- and middle-income countries lack the capacity to undertake tobacco-related research and implement tobacco control strategies.²

Warner³ and Lando et al.⁴ addressed key weaknesses in implementing effective and resource-efficient tobacco control research in low- and middle-income countries. First, while relevant research is being produced, mechanisms are not in place for synthesis and dissemination to ensure that important findings inform national policy development.² Second, there is no central clearinghouse that provides contact information for tobacco control researchers or brief descriptions of current tobacco control research efforts.⁴ Finally, collaboration among researchers is not taking advantage of potential efficiencies through joint training, mentoring, and pooling of information.

In response to these needs, a Global Tobacco Research Network (GTRN) developed. The GTRN connects individuals and organizations collaborating to conduct, synthesize, manage, and disseminate tobacco control research in support of a policy-relevant research agenda. The network's goal is to consolidate researchers and institutions involved in the broad range of research that is addressing the determinants, consequences, and control of tobacco production, promotion, and consumption and exposure to tobacco smoke. These researchers have both the knowledge and the skills to build and sustain future global tobacco control research efforts.

BACKGROUND

In 2002, the US National Cancer Institute (NCI) launched the Initiative for the Study of Innovative Systems to better understand strategies for integrating science and practice. The initiative included broad consultation with tobacco control experts to map out the current extent of tobacco control activity and to identify tobacco control priorities. Leading experts in systems and network theory helped develop an integrated model of tobacco control that could lead to a better alignment of tobacco control activities at the national, state, and local levels.⁵ The NCI also supported the development of the GTRN to practically apply network development principles. The Institute

for Global Tobacco Control is responsible for the GTRN's practical operations. A steering committee composed of individuals who represent major institutions and networks involved in international tobacco research drives the GTRN's conceptual development. Initial committee members represented the NCI, the Centers for Disease Control and Prevention, the National Institutes of Health Fogarty International Center, the Society for Research on Nicotine and Tobacco, GLOBALink, the Campaign for Tobacco Free Kids, the American Cancer Society, and Canada's Institute for International Research on Tobacco Control. GTRN developers are currently expanding this committee to increase the number of low- and middle-income-country researchers and to ensure these researchers' perspectives inform the GTRN's evolution. Developers also are working with other international research institutions to ensure the global nature of the network and to ensure a diverse, multi-institutional investment in the GTRN's future.

RATIONALE

Tobacco research is well suited to experimenting with new approaches to global public health networking. The large and diverse tobacco research community is composed of individuals and institutions that have a broad range of expertise (e.g., public health, behavioral science, communications, economics, trade,

globalization, corporate social responsibility, law, and agriculture). Mechanisms are needed for enhancing the ability of this group to work with each other and to influence one another and the larger policy and social environment. New approaches also are needed for linking and consolidating the increasingly global and multidisciplinary nature of the tobacco control evidence base. A plethora of research conducted in low- and middle-income countries has yet to be summarized and disseminated, and important combinations and linkages have yet to be made within the voluminous evidence produced by expert groups and governments throughout the world. The lack of an overarching infrastructure means that tobacco research efforts often overlap and fail to fill existing knowledge gaps. Moreover, the lack of institutionalized methods for the global management and transfer of information means that the current tobacco research system is at risk of losing important technical resources and expertise as individuals move in and out of tobacco control. The GTRN could and should provide a sustainable and self-sufficient network that can respond to these current weaknesses in the system.

A second reason for developing the GTRN is the urgent demand for research and technical assistance by countries that seek to ratify and implement the FCTC. Article 20 of the FCTC (Research, Surveillance, Monitoring and Exchange of Information) outlines the minimum amount of evidence needed in every country. To fulfill the treaty's research and surveillance obligations, each country must provide (1) estimates of the burden of disease caused by smoking, (2) data on

tobacco prevalence and use, (3) standardized measures and methods for monitoring tobacco control policy, and (4) mechanisms for industry tracking.¹ The FCTC, which also emphasizes the need for cooperation among scientific, technical, and legal professionals, has been ratified by more than 40 countries and entered into force in February 2005. The GTRN should provide a platform for developing international research collaborations that tracks the treaty's implementation and the unintended consequences that will surely arise as new regulations are passed.

Perhaps the most valuable reason for creating a tobacco research network is in the lessons its development will provide to the broader public health community. Improved global communication, knowledge sharing, and information dissemination—for both communicable and noncommunicable diseases—are all timely public health issues. Global public health capacity will be greatly enhanced if methods are developed to effectively link research communities, synthesize large amounts of information, and adequately disseminate informa-

tion and knowledge to stakeholders (advocates, researchers, policymakers) who work at the local, regional, and international levels. The extensive, experienced, and multidisciplinary global tobacco research community is well poised to develop a network that will improve public health practice and research.

Developing the GTRN: 6 Principles

Six principles drove the initial development of the GTRN: purpose, values, people, concept, structure, and practice (Table 1). GTRN developers had to answer fundamental questions: Who belongs in the network? What do they share? What resources do they possess? What are their needs? What can the network offer? How can the network be structured to ensure access and use? What technology and techniques are available?

Purpose, values, and people. The lack of an easily identifiable tobacco research system is evidence of the need for a defined hub for tobacco research networking. Potential GTRN members' training, skills, and areas of expertise will differ greatly. For

example, a researcher who studies the bio-behavioral effects of nicotine uses different methods and requires a different skill set than a more applied researcher who compares the impact of different policies on youth cigarette consumption. However, both types of research can influence the course of tobacco control and may inform the conclusions of the other's work. The GTRN serves all individuals and organizations that support or conduct research that addresses the determinants, consequences, and control of tobacco production, promotion, and consumption and exposure to tobacco smoke. This community of researchers also shares an overriding purpose: a commitment to reducing the burden of disease and death caused by tobacco. This purpose brings coherence and thus enables longevity and collective action within the network. Potential GTRN members also commit themselves to the network's shared values of research collaboration, knowledge sharing, and educational partnerships.

The developers of the GTRN have undertaken many activities to better understand how potential future members are working together, what resources they possess, and what they want and need to improve the conduct and the impact of their work. The Institute for Global Tobacco Control collected information from tobacco control researchers during the August 2003 World Conference on Tobacco or Health in Helsinki, Finland. A series of meetings were held to discuss the networking structure and functions, and a needs assessment was conducted with a convenience sample (n=228) who were asked about researcher demographics, research priorities,

TABLE 1—Principles Guiding the Initial Development of the Global Tobacco Research Network

People	Multisectoral community of researchers and institutions involved in the broad range of research that addresses the determinants, consequences, and control of tobacco production, promotion and consumption, and exposure to tobacco smoke
Purpose	Enhance research with the goal of reducing the burden of disease and death caused by tobacco
Values	Research collaboration, knowledge sharing, and educational partnerships
Concept	Network consolidation, knowledge management, and knowledge sharing to improve the conduct and the application of tobacco research
Structure	Virtual web of individuals and organizations connected through the Internet
Practice	Research and organization directories, information databases, research-related resources and tools, and online discussions

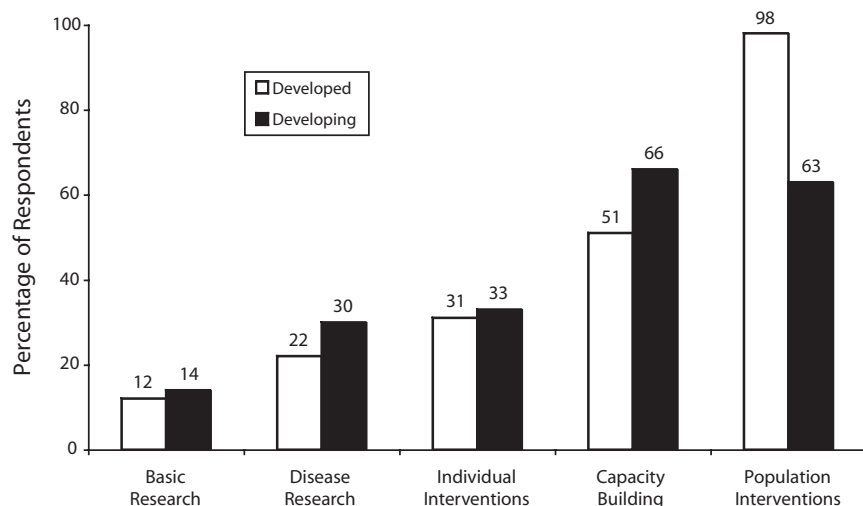


FIGURE 1—Comparisons of research priorities in developing and developed countries: August 5–7, 2003.

and perceived needs. Respondents were from both developing countries (42%) and developed countries (58%), and all 6 of the World Health Organization’s geographical regions were represented.

Analysis of the meetings’ minutes and the assessment results showed the researchers were most interested in improved information dissemination, increased collaborative partnerships, better access to tools and protocols for surveillance and evaluation, and increased opportunities for face-to-face and virtual training. Figure 1 shows a comparison of developing- and developed-country research priorities.

The needs assessment provided information that helped with the development of the GTRN’s priorities; however, the results were limited because of the small convenience sample. A much larger assessment is being developed that will collect information on organizational expertise and priorities and ongoing tobacco control research activities.

Concept, structure, and practice.

During the initial network analysis, the steering committee identified 3 key concepts that are driving the demand for the GTRN: network consolidation, knowledge management, and knowledge sharing. Once the GTRN’s conceptual foundation had been determined, practical work on delivery began.

To date, Web-based networks and e-mail exchange offer the most effective and cost-efficient structures for linking researchers and advocates worldwide. However, it is recognized that barriers to both accessing the Internet and downloading files still exist in many low- and middle-income countries. Use of knowledge management principles is essential for the GTRN, because information must be synthesized and provided in a form that reduces technology limitations.⁶

In an effort to learn from past virtual tobacco control networking and to not reinvest in structures already available, the GTRN was developed within the

structure of GLOBALink.⁷ Active since 1992, GLOBALink has become a very large network that incorporates many different aspects of tobacco control. GLOBALink’s home page is available in 8 languages, has news bulletins, electronic conferences, live interactive chat, and full-text databases (including news, legislation, directories). The home page and all its features were developed to facilitate use in areas where slow or expensive Internet services exist. GLOBALink does not provide any research-related services, and it was pleased to partner with the GTRN to develop a globally accessible platform dedicated specifically to research.

Many of the same approaches and technologies used by GLOBALink have been incorporated into the GTRN’s home page. Priority has been given to developing a site that will be user friendly in low- and middle-income countries. The GTRN home page is available only in English; however, initial proposals for developing language-

specific regional pages have been received. If an opportunity to expand the GTRN arises, GLOBALink’s language resources will be available.

GTRN Resource Development

GTRN membership and organizational databases. The GTRN is working closely with GLOBALink to develop databases that have in-depth and searchable profiles of researchers and organizations. A major challenge facing the GTRN is the way to systematically locate this information; however, once the data collection challenges are overcome, the databases will provide information that is searchable by region, country, research expertise, and institutional and network affiliations of the researchers and organizations involved. This database will allow funding agencies to identify qualified researchers who can undertake new research endeavors, and it will allow researchers to locate potential research partners.

GTRN informational databases. To facilitate information synthesis, the GTRN is developing several informational databases. The first is an Interactive Database of Tobacco Control Literature, which is the result of a systematic country-specific review of published tobacco control research. To date, the GTRN has completed literature reviews from more than 30 countries that were selected on the basis of these countries’ involvement in ongoing Fogarty International Center tobacco control grant projects.⁴ The literature was gathered from 10 electronic databases that collected articles, regardless of language, from internationally indexed journals (all of which provide abstracts in English). A previously developed tobacco research classification sys-

tem (National Organization of Tobacco Use Research Funding) was used to categorize the articles and provided an organized framework and set of descriptors for cataloging tobacco-related research.⁵ The initial literature review did not cover “gray literature,” such as government reports on tobacco; however, the GTRN is now considering how such literature can be added to the database to provide a more comprehensive resource. The GTRN also is in the process of launching an interactive and updated form of the comprehensive *Tobacco Atlas*,⁹ and the GTRN’s Web site¹⁰ provides links to other tobacco control online databases.

Research tools and training. The GTRN Web site also provides a repository of tobacco control research-related resources and tools. These tools should expand to include example protocols, surveys, and grant applications; best practices and fact sheets; and certification exams. The GTRN also will play an important coordinating role in an international mentoring program that links experienced tobacco researchers with those in need of technical assistance.

Sustainability and Funding

The GTRN’s first 2 years were supported with funding from the NCI. Funding for the next phase of the GTRN is currently being secured, with the possibility of additional organizations providing support. It is important to note that funding challenges are the norm for networks like the GTRN. Despite a membership of more than 4000 tobacco control professionals, GLOBALink continues to have significant funding restrictions and must seek new funding support for its operations each year. The GTRN and GLOB-

ALink are working together to brainstorm new approaches to network resource mobilization. Membership dues, although effective in raising funds, cannot be seen as a viable method for fundraising for the GTRN or GLOBALink because, by definition, these networks seek to include members of the tobacco control community who have little or no resources. Another form of user fees—those that focus on the large organizations that use the networks to reach out to the global community—are under consideration. The GLOB-ALink–GTRN partnership is seen by both parties as a critical element of future fundraising efforts.

CONCLUSION

During its first 2 years, the GTRN developed a comprehensive understanding of current tobacco research system dynamics, built a strong coalition of global partners, and is in the process of developing a number of innovative resources. The GTRN is now poised to evolve into an effective information network that will (1) facilitate international research communication and collaboration; (2) manage, synthesize, and disseminate global tobacco control information; and (3) provide technical research-related resources.¹⁰

However, the next stage of GTRN’s development faces many challenges. Better methods for including researchers from low- and middle-income countries are needed to ensure that the GTRN is more diverse and is not seen as an arrangement dominated by high-income countries. Although limited, the GTRN has experienced some organizational hesitation to fully participate in the networks’ activities, particularly

in terms of sharing resources and tools. Organizational turf battles must be anticipated as the network continues to grow. Whether or not the GTRN can truly provide a comprehensive global clearinghouse for training and employment opportunities still remains to be seen. Similar to other areas of tobacco control, the GTRN also is likely to suffer from limited resources and a lack of interested funding partners. Although the GTRN is being developed to be as self-sufficient as possible, quality networks require continued attention and resource support. However, this aspect of the GTRN’s future may provide the most important lessons to the broader public health community. How can a publicly available information network that serves a global community without emphasizing any one specific organization or supporter be adequately developed and sustained over the long term? ■

About the Authors

Frances A. Stillman, Heather L. Wipfli, and Jonathan M. Samet are with the Institute for Global Tobacco Control, Johns Hopkins Bloomberg School of Public Health, Baltimore, Md. Harry A. Lando is with the Department of Epidemiology, University of Minnesota, Minneapolis, Minn. Scott Leischow is with the National Cancer Institute, Rockville, Md.

Requests for reprints should be sent to Frances A. Stillman, EdD, EdM, Institute for Global Tobacco Control, Johns Hopkins Bloomberg School of Public Health, 615 N Wolfe St, Rm W6027, Baltimore, MD 21205 (email: fstillma@jhsph.edu).

This article was accepted October 27, 2004.

Contributors

All authors contributed to the origination of the article. F.A. Stillman and H.L. Wipfli wrote the article. H.A. Lando, S. Leischow, and J.M. Samet reviewed and edited drafts of the article.

Acknowledgments

We thank the Fogarty International Center of the National Institutes of Health

for its continued support of our work (grant R01-HL-73699). Our study was also supported in part by National Cancer Institute Task Order number 10 (Public Service Contract number 282980019).

We also thank our research assistant, Wahid Maalouf, for his work in constructing the literature database.

Note. The views expressed are solely the responsibility of the authors and do not necessarily represent that of the National Cancer Institute.

References

1. Framework Convention on Tobacco Control. World Health Organization. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf. Accessed August 31, 2004.
2. Research for International Tobacco Control (RITC). *Bridging the Research Gaps in Global Tobacco Control: Report on the Meeting in Ottawa, Canada, November 4–6, 2002*. Ottawa, Ontario, Canada: RITC; 2002.
3. Warner KE. The role of research in international tobacco control. *Am J Public Health*; 2005;95:976–984.
4. Lando HA, Borrelli B, Klein LC, et al. The landscape in global tobacco control research: a guide to gaining a foothold. *Am J Public Health*; 2005;95:939–945.
5. Best A, Tenkasi R, Trochim W, et al. Systemic transformational change in tobacco control: an overview of The Initiative for the Study and Implementation of Systems (ISIS). In: Casebeer A, Harrison A, Mark AE, eds. *Innovation in Health Care: A Reality Check*. New York, NY: Palgrave Macmillan. In Press.
6. Lau F. Toward a knowledge management framework in health. Available at: http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_024634.cfm. Accessed March 28, 2005.
7. GLOBALink home page. Available at: <http://www.globalink.org>. Accessed August 31, 2004.
8. Maule CO. Classifying tobacco-related research: development and use of a system to describe nonprofit extramural research funding in the United States and Canada, 1999. *Nicotine Tobacco Res*. 2003;5(4):585–588.
9. Mackay J, Eriksen M. *The Tobacco Atlas*. Geneva, Switzerland: World Health Organization; 2002.
10. Global Tobacco Research Network home page. Available at: <http://www.tobaccoresearch.net>. Accessed August 31, 2004.