

Closing the knowledge and the “know-do” gap for better TB transmission control via GHDonline

Sophie Beauvais, Edward Nardell, MD, Rebecca Weintraub, MD
Global Health Delivery Project, Harvard University

1 Objective

Infection control is essential to the management of tuberculosis, but is very challenging to implement in resource-constrained settings (RCS) where professionals often work in isolation with little access to readily available practical information or expert advice.

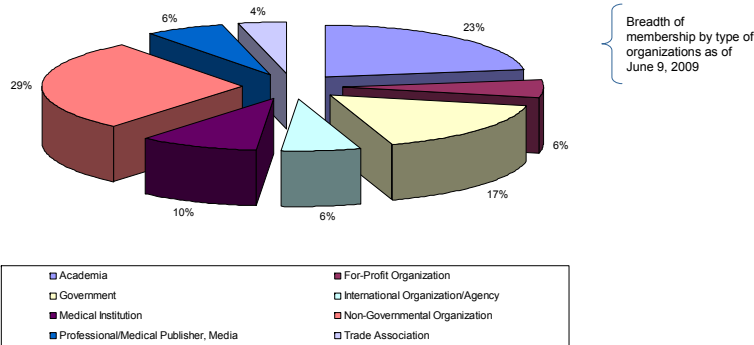
We will demonstrate how **hundreds of practitioners representing a variety of organizations have created a vibrant virtual collaboration space** on GHDonline: the TB Infection Control Community <http://www.ghdonline.org/ic/>, where they **share proven practices**, access lists of trained international consultants, **engage in problem-solving**, and **address challenges to control the transmission of TB**.

2 Methods

GHDonline (<http://www.ghdonline.org>) is the virtual platform of the Global Health Delivery (GHD) Project. Health providers around the world have a wealth of practical knowledge but typically work in isolation, with little opportunity to learn from the experiences of peers or share their own best practices. Meanwhile, the Internet has revolutionized the dissemination of information, including in health care, but sifting through a mountain of online data is impractical for busy practitioners in the field.

To address this need, GHD Information Technology, Knowledge Management, and Global Health leaders developed **GHDonline, an innovative online platform for Virtual Professional Collaboration** (VPCs - 1). Four communities were launched on June 27, 2008. GHDonline communities are:

- **Focused** on specific global health delivery challenges.
- **Guided by expert moderators**.
- **Run by members**, not by a single organization.



Shared values and goals bind the members of human networks and communities, make cooperative action possible, and benefit organizations (2), but also help members see the meaning of their knowledge sharing, which in turn increases the quantity and quality of their knowledge sharing (3):

- GHDonline members are all global health implementers who work to improve the global delivery of health care.
- GHDonline aims at **democratizing access to critical knowledge** and **foster open collaboration** to support their work.

Why join GHDonline?

- Becoming a member is easy and free.
- Professionals can join one or several communities on GHDonline.
- Members can start and participate in discussions online or via email.
- Members can publish resources by uploading files and links.
- Members can search for information in a custom-built search engine.
- Members can access restricted content thanks to partnerships.

3 TB Infection Control Community: Impact

The TB IC Community (TB IC) aims at disseminating and improving TB transmission and infection control practices, with specific attention to the following key areas: administrative and engineering control mechanisms, facility design, recommended manufacturers and suppliers, and personal respiratory protection.

Expert moderators guiding the community:

- **Edward Nardell, MD**, Associate Professor, Harvard Medical School; Associate Professor, Harvard School of Public Health; Senior Physician, Division of Global Health Equity, Brigham and Women's Hospital; Partners in Health, Boston, MA, USA
- **Paul A. Jensen, PhD, PE, CIH**, Captain, U.S. Public Health Service, Engineer Director, Division of Tuberculosis Elimination, National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, GA, USA
- **Grigory Volchenkov, MD**, Head Doctor, Vladimir Oblast TB Dispensar, Tomsk, Russia
- **Martin Yagui, MD**, Instituto Nacional de Salud, Lima, Peru

As of June 9, 2009, **714 professionals representing 328 organizations and institutions across 91 countries** collaborate in TB IC. Cross-community collaboration is shown by the high number of GHDonline members who both joined the Drug Resistant TB and the TB IC communities: 430.

Top 10 Professions represented as of June 9, 2009
Researchers
Physicians
Infection Control Professionals, Preventionists
Laboratory Professionals
Architects
Engineers
Site, Program, NGOs Directors, Managers
Technical Specialists, Advisors
Training Professionals
National TB Programme Managers, Coordinators

Type of organizations represented as of June 9, 2009
Academic Institutions
Governments such as Ministries of Health and National Programmes
Non-Governmental Organizations (NGOs)
Medical Institutions such as care and research hospitals, institutes
International Organizations: Most agencies involved in global health initiatives
For-Profit Organizations such as Air Filter Maintenance Companies, Pharma
Trade Associations such as Medical, Thoracic, Lung diseases, Nursing
Professional/Medical Publishers

In-depth discussions address a wide range of topics from Ultraviolet Germicidal Irradiation systems performance and N95 masks usage to effective triage strategies.

Discussion 1: Outdoor Sputum Induction in South Africa

<http://www.ghdonline.org/ic/discussion/outdoor-sputum-induction-in-south-africa/>

- **Question to the community:** Are there protocols for sputum induction in outdoor settings that address type of structure, time needed between inductions and precautions for health workers?
- **Member typology:** A co-investigator on a study at a leading university evaluating the operating characteristics and effectiveness of a clinical screening instrument for the detection of active TB in adult HIV+ outpatients in Eastern Cape, South Africa
- **Discussion typology:** 20 replies, 13 in less than 72 hours; 7 countries and 16 organizations represented
- **Outcome:** Creation of a “gold standard” for outdoor sputum induction in sub-Saharan Africa

Keywords: TB IC Guidelines

Discussion 2: TB Infection Control at home

<http://www.ghdonline.org/ic/discussion/infection-control-at-home/>

Question to the community: TB Infection Control interventions for TB treatment at home

Member typology: A Program Director for a NGO in Lesotho

Discussion typology: 27 replies, with 18 replies in less than 72 hours; 10 countries and 12 organizations represented

Outcome: Concise and practical guidelines for TB IC interventions for outpatient TB care in RCS



Map for Discussion 2, started March 9, 2009; ©2009 Google - Map data ©2009 Tele Atlas, MapLink/Tele Atlas, AND, Europa Technologies

4 Next steps

To further **democratize access to critical knowledge** and **improve the global delivery of health care**, GHD is:

- **Documenting the impact** of GHDonline in the field and developing strong evidence for collaboration in VPCs with the GHDonline Research Project. This will involve the gathering and analysis of both qualitative and quantitative information and the production of reports documenting the activities of GHDonline communities.
- **Leveraging partnerships** with organizations to provide access to more critical information and to support their work.

GHDonline supporting the “Building Design and Engineering Approaches to Airborne Infection Control” Course, Center for Continuing Professional Education, Harvard School of Public Health; Link to full post: <http://www.ghdonline.org/ic/discussion/your-design-engineering-course-for-airborne-infect/>

Your design & engineering course for airborne infection control started on 2009-May-17 by Member's name

Dear Dr. Nardell,

I am writing to express our deep gratitude for your support to our MDR-TB control efforts in Pakistan. You will be pleased to know that the 2008 summer course (Building Design and Engineering Approaches to Airborne Infection Control) attended by Tariq Qaiser and Zafar Zaidi from our hospital has had two major positive impacts in Pakistan, which I describe below.

- **Broadening the reach** of GHDonline by fostering multi-language collaboration and **inviting organizations and professionals to join**.

Discussion in Spanish:

<http://www.ghdonline.org/ic/discussion/tb-control/>

Estoy buscando orientación para el diseño de un proyecto de investigación que permita la evaluación de los controles administrativos, ambientales y protección respiratoria en los hospitales de la red pública hospitalaria de Medellín, Colombia.

Keywords: Administrative Controls, Engineering Controls, Personal Respiratory Protection, infection control, tb

1. "Professional Virtual Communities" PVC Reference Framework, by R. Santoro and A. Bilfucio, 30 June 2008, European Society of Concurrent Engineering - Net, accessed on June 9, 2009 <http://www.amc-communities.eu/pub/bcsw.cgi/d423412/Professional%20Virtual%20Communities%20PVC%20Reference%20Framework%20-%E2%80%A6.pdf>
2. D. Cohen, L. Prusak, In Good Company: How Social Capital Makes Organizations Work, Harvard Business School Press, Boston, MA, 2001.
3. C. Chiu, M. Hsu, E. Wang, Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories, Decision Support Systems 42, (2006) 1872-1888.

Founding Partners:
Department of Global Health & Social Medicine, Harvard Medical School
Division of Global Health Equity, Brigham and Women's Hospital
Francois-Xavier Bagnoud Center for Health & Human Rights, Harvard School of Public Health
Institute for Strategy and Competitiveness, Harvard Business School
Partners in Health
Additional Funding:
The Leon Lowenstein Foundation, The Schooner Foundation, private donors.
For more information, please visit <http://www.globalhealthdelivery.org>

Discussion started December 15, 2008