

# ATLANTA-TBILISI HEALTH PARTNERSHIP

The First Six Years:  
October, 1992—September, 1998

September, 1998

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## I. THE PARTNERS

The American International Health Alliance (AIHA) health partnership project between Atlanta, Georgia, and Tbilisi, Georgia, funded under a cooperative agreement with the United States Agency for International Development, has existed since October of 1992 when the eleven charter partnerships were announced.

There have been many accomplishments during this period. A central theme of the Atlanta-Tbilisi Health Partnership has been a dual focus upon both short term and long term projects. Some projects have had a sharply limited focus and others a broad scope. The steadily developing collegial relationships that have occurred during the years as the partners have traveled back and forth have been richly productive of increasing insights into the ways in which Atlanta-Tbilisi can be of benefit to Georgia in the present and future. The accomplishments of the past six years are viewed by the partners as stepping stones into the future.

A useful way of looking at the partnership is that of a triangle which includes Georgia, Atlanta and AIHA. The results of the interactions of the partners with AIHA have been central to the plans and accomplishments of Atlanta-Tbilisi. AIHA has brought to the table insights, initiatives and experience that have been immensely valuable to the partners over the past six years. The accomplishments of Atlanta-Tbilisi rest in part upon the resourceful leadership and inspiration of AIHA.

There has been close interaction and joint projects with other institutions and organizations: the World Bank; the World Health Organization; the Soros Open Society Institute; and others. The resources of Atlanta-Tbilisi have been leveraged substantially through these joint programs.

The **US Partners** in Atlanta, Georgia, have included through the years of the project:

- Grady Memorial Hospital, 1024-bed tertiary care facility in the heart of Atlanta, one of the nation's largest academic training hospitals;
- Emory University, including the School of Medicine and the School of Public Health;
- Morehouse School of Medicine, one of the nation's leading historically black medical institutions.
- Georgia State University, a large state university, joined the partnership after the beginning.

The **Georgian Partners** in Tbilisi, Georgia, have included through the years of the project:

- The Ministry of Health, the government agency with responsibility for health policy and delivery;
- Tbilisi State Medical University, the historically leading educator of physicians in Georgia;
- City Hospital No. 2, one of the city's hospitals that had been designated by the government for upgrading to a health care facility emulating "western standards."
- Tbilisi State University, the large and highly respected university in Tbilisi with plans to develop modern schools of nursing and medicine.

## **II. PARTNERSHIP OBJECTIVES**

The Atlanta-Tbilisi Health partnership has been the only long-term technical assistance program in the health care sector of the Republic of Georgia. The partnership objectives were and are based on the priorities of the health care system of the country. As reforms progressed in the health sector and generally in the country, priority directions of the Georgia health sector changed. Technical assistance objectives and project priorities were constantly reviewed and refined in accordance with goals of the national health care strategy.

### **A. Clinical Practic, Diagnostic Capabilities and Physician Training**

#### **PROJECT OBJECTIVES**

- To conduct surveys of radiology and clinical laboratory facilities available at City Hospital #2 and throughout the city of Tbilisi;
- To work jointly with the World Bank to completely rebuild and renovate a new section of City Hospital #2.
- To increase the fund of knowledge in clinical areas;
- To establish an x-ray film library supplied by the American Board of Radiology, to be used in educating radiologists and for credentialing purposes.
- To develop a Diagnostic Imaging Center of Excellence at the Institute of Diagnostic Imaging in Tbilisi, and to use this as the foundation of a radiology residency and Center for Mammography.
- To improve the practice of medicine and diagnostic capabilities, particularly in the areas of Cardiology, Gastroenterology, Laboratory Services and Radiology, including mammography.
- To improve medical care in Georgia in the long run by educating physicians in house staff training programs at Emory University School of Medicine and Grady Hospital.

### **B. Maternal and Child Health**

#### **PROJECT OBJECTIVES**

- To decrease infant mortality and maternal morbidity;
- To improve the practice of fetal monitoring, assessment of fetal well-being and neonatal resuscitation;
- To work especially in these areas with Childrens Hospital #3 and Maternity House #5 in Tbilisi.
- To evaluate maternal neonatal care facilities in Tbilisi, Kutaisi and other rayons, including Western Georgia;
- To train a core group of instructors in neonatal resuscitation who can establish a program of outreach education in neonatal resuscitation.

### **C. Health Policy Reform**

#### **PROJECT OBJECTIVES:**

- To provide technical assistance to the Ministry of Health in the review and revision of national health policy.
- To aid the country in transforming from the Soviet health system to a modern western system.

#### **D. Nursing Reform**

##### **PROJECT OBJECTIVES:**

- To improve the clinical practice of nursing;
- To provide support for the development of a professional nursing association;
- To assist with the review of nursing curriculum and provide technical assistance for the establishment of a university level baccalaureate nursing program for both practicing nurses and those aspiring to become nurses;
- To provide technical support to the Ministry of Health for nursing licensure and standards development;
- To begin to lay the legal groundwork for nursing as a modern profession.

#### **E. Health Management Reform**

##### **PROJECT OBJECTIVES:**

- To train health management leaders from throughout the country in modern practice of health care administration and financial management.
- To plan for the establishment of graduate and postgraduate courses in a school for healthcare administration and management.

#### **F. Health Promotion**

##### **PROJECT OBJECTIVES:**

- To provide professional training opportunities and technical assistance to the Ministry of Health in the review of national health policy in relation to disease prevention and health promotion.

#### **G. Medical Curriculum Reform and Biomedical Research**

##### **PROJECT OBJECTIVES:**

- To provide assistance to Tbilisi State Medical University and the Ministry of Health in the review of medical school curricula;
- To assist in revising a curriculum to meet Western standards;
- To develop programs for ongoing exchange of academic medicine, research and postgraduate training;
- To establish a radiology residency program as well as board accreditation standards for radiologists within Tbilisi and the Republic of Georgia.

- To explore the establishment of a new school of medicine in Georgia that will be modeled after U.S. medical schools.
- To work with the Ministry of Health and the Fogarty International Institute of the National Institutes of Health in Bethesda, Maryland, to assess and make plans for establishment of modern biomedical research in Georgia appropriate to the needs and resources of the country.

## **H. Health Information and Medical Literature Accessibility**

### **PROJECT OBJECTIVES:**

- To provide technical assistance to Tbilisi State Medical University to improve the practice of library science and upgrade the access to medical literature;
- To establish a National Information Learning Centre to provide access to the world's biomedical literature via the Internet and an on site collection of print and CD-ROM resource;
- To provide exposure to multimedia educational materials for medical students and professionals.

## **I. EMS Training Center**

### **PROJECT OBJECTIVES:**

- To provide technical assistance to the Ministry of Health in establishing a National Emergency Medical Services Training Center to improve the level of knowledge and skill in pre-hospital life support and emergency care. Specifically:
  - Emergency care training for physicians and nurses;
  - First aid training for nonphysicians;
  - Improvement of emergency care at prehospital stage;
  - Providing educational materials--print and electronic resources--in emergency care and first aid in the Georgian language for medical personnel and the general population;
  - Searching for new up-to-date information on emergency and disaster medicine in Internet and other network facilities and making this information available to health care professionals and the general population .

## **J. Prosthetics**

### **PROJECT OBJECTIVES:**

- To provide technical review of national resources for the provision of prosthetic devices;
- To improve the practice of prosthetic orthopaedics;
- To upgrade the technical abilities for the provision of prosthetic devices.

## **K. Micronutrient Malnutrition**

### **PROJECT OBJECTIVES:**

- To provide technical assistance to the Ministry of Health in the assessment of the extent and magnitude of iodine deficiency in the Republic of Georgia and in the design of programs to decrease iodine deficiency in the population.

#### **L. Tuberculosis**

Tuberculosis is a major public health problem in Georgia. Rates of tuberculosis are extraordinarily high and similar to that seen in developing countries in other continents such as Asia and Africa.

##### **PROJECT OBJECTIVES:**

- To provide technical assistance to the Ministry of Health and Georgian National Tuberculosis Program on strategies concerning tuberculosis prevention and control activities which will be effective in reducing the extremely high rate of tuberculosis in Georgia;
- To develop operational research objectives which will enhance tuberculosis control efforts through a drug susceptibility survey to determine the rates of drug resistance among patients with active tuberculosis in Tbilisi and study of the clinical and molecular epidemiology of tuberculosis in Georgia.

#### **M. HIV/AIDS**

##### **PROJECT OBJECTIVES:**

- To provide technical assistance to the Ministry of Health on the establishment of a strong HIV/AIDS prevention program;
- To gather information regarding behavior and seroprevalence to HIV/AIDS and other blood-borne pathogens such as hepatitis A, B and C, and syphilis;
- To design and implement intervention strategies to reduce HIV risk behaviors;
- To improve the diagnosis and treatment of sexually transmitted diseases;
- To provide training for physicians and healthcare providers in clinical and epidemiological issues related to HIV/AIDS and sexually transmitted diseases.

#### **N. Georgian Medical Journal**

##### **PROJECT OBJECTIVES:**

- To assist with the development of a national journal for distributing medical and pharmaceutical information.

### **III. PARTNERSHIP ACHIEVEMENTS AND MILESTONES**

#### **A. Clinical Practice, Diagnostic Capabilities and Physician Training**

- A survey of the facilities available at City Hospital No. 2 was completed by Dr. William J.

Casarella, chairman of radiology, Emory University School of Medicine, in 1992. The survey documented the substandard state of radiological care and resources available within Tbilisi at that time. A report outlining the findings of this trip was published in the *American Journal of Radiology*, 1993, vol. 161, pages 23-25 by Dr. Casarella. This article is Appendix A.

- Atlanta-Tbilisi supplied an x-ray film library of 1500 films to the Institute of Diagnostic Imaging. These original films were collected and put into a teaching collecting by the American Board of Radiology, and supplied to the partnership by the National Library of Medicine in Bethesda after a CD ROM was made of the originals.
- A gastroenterologist was trained in current practice of endoscopy during a month visit to Emory University School of Medicine.
- An endoscopic laboratory donated by the Atlanta partners was installed at City Hospital No. 2 for modern diagnosis and treatment of gastrointestinal disease.
- Trained a cardiologist and established an echocardiography service at City Hospital No. 2
- Donated laboratory equipment and completed training of laboratory personnel.
- X-ray equipment was donated to City Hospital No. 2.
- Evaluation of radiological infrastructure present within Tbilisi was completed in a series of two trips completed in April, 1996, and in September, 1997.
- In September 1997, a mammography unit was donated by Crawford W. Long Hospital of Emory University to the Institute of Diagnostic Imaging, establishing the first modern mammography unit within the Caucasus.
- Plans are currently in process for establishing a radiology board within the Republic of Georgia, with the technical assistance of Dr. Casarella, who is Chairman of Radiology at Emory University and is also president elect of the American Board of Radiology, and Dr. Kay Vydareny, a recent past president of the American Roentgen-Wright Society, one of the two largest radiological societies in the world.
- The partnership has established and supports the National Mammography Project as a vital intervention for early detection of breast cancer.
- House staff training: this has been a remarkably successful part of the Atlanta-Tbilisi program. Eighteen physicians from Georgia are being or have been trained in the Emory University School of Medicine Affiliated Hospitals programs. Four have completed training: one in neurology and three in internal medicine. Eleven are in the Internal Medicine training program: three as PGY IIIs, four as PGY IIs and seven as PGY Is. Six of the eighteen participated in the medical student exchange program, spending six months at Emory and Grady as students.

## **B. Maternal and Child Health**

- Completed training exchanges in the practice of obstetrics and neonatology.
- Donated and installed electronic fetal monitoring equipment and completed training in the use of fetal monitoring in obstetrics at hospitals in Tbilisi and Kutaisi.
- Completed three "train the trainers" course over three years on neonatal care and resuscitation; in 1997 course leaders translated NRP book into Georgian and established their outreach training group, called Neonatus.
- Two training delegations, including the chief of maternal/child health in the Ministry, the chief obstetrician, pediatricians and obstetricians each spent a month in Atlanta, learning the functions of a regional perinatal center and observing modern practice in obstetrics and neona-

tology.

### C. Health Policy Reform

- Atlanta-Tbilisi supplied an onsite representative, Ms. Sherry Carlin, during the second year of the partnership. Ms. Carlin worked closely with the Ministry of Health and nongovernmental organizations in assessing the state of the health system and in planning for change.
- Atlanta-Tbilisi cosponsored five National Health Policy Workshops in Georgia focusing on health care reform, health care policy and human resources.
- President Eduard Shevardnadze issued Decree 400 on December 23, 1994, establishing the State Health Care Fund, ensuring licensure of medical facilities, creating registration and quality control of medications and supplies, and certifying and licensing health care providers. The impact of this legislation has been enormous. Atlanta-Tbilisi has had substantial impact upon health policy reform by this single accomplishment.
- As a result of the National Health Policy Workshops, the World Bank initiated its investigation of designing their Georgia Health Project as part of the overall loan to Georgia in 1996.

### D. Nursing Reform

- Institutional reform of nursing as an independent profession was begun throughout Georgia
- A core base for nursing education was begun
- The start of establishing managerial nursing infrastructure at the Ministry and regional levels
- Nursing delegations completed intense “train-the-trainer” exchanges at Grady Health System. E.g., during 1997 there were 54 nurses trained in “Nursing Leadership,” and 30 nurses in “Nursing Skills” courses. Four nurses spent one month in Atlanta in an advanced leadership and teaching course.
- A national conference on Nursing Leadership was held in 1996.
- A second national nursing conference was held in 1997, training nurses in physical assessment and skills development.
- The Georgian Nursing Association was established with the aid and encouragement of Atlanta-Tbilisi in 1996.
- The Minister of Health created the position of Chief of Nursing in the Ministry.
- Tbilisi State University has moved toward establishing the country’s first university level nursing school.
- Opened the Nursing Learning Resource Center in the World Bank Continuing Education Center in May, 1998.

### E. Health Management Reform

- A series of training seminars were conducted in Borjomi by AIHA and the Association of University Programs in Health Administration for 55 health care managers from throughout Georgia.

- Atlanta-Tbilisi has worked with and supported the School of Business Administration of Georgia State University as it has moved to establish the Caucasus School of Business Administration. This school will be a consortium set up by Georgian Technical University, Tbilisi State University and the International School of Economics. A substantial grant has been obtained from the Eurasia Foundation in support of this effort.

## **F. Health Promotion**

- Training exchanges were completed that brought Ministry of Health leaders to Emory University, the US Department of Health and Human Services, the National Institutes of Health, and the Centers for Disease Control and Prevention to study US policy and strategy for health promotion.
- A national health promotion plan was incorporated into the Georgian Health Project of the World Bank.

## **G. Medical Curriculum Reform and Biomedical Research**

- Tbilisi State Medical University completed a review of medical school curricula and made revisions to its curriculum, particularly after training exchanges with leaders in curriculum development, pathology and anatomy.
- In September, 1997, a complete set of radiological teaching files consisting of approximately 1,500 separate cases and films were transferred to the Institute of Diagnostic Imaging, on behalf of the Republic of Georgia. These files will serve as the core teaching curriculum at the Institute of Diagnostic Imaging as well as serve as the bases for the oral portion of subsequent radiological board exams.
- A postgraduate residency training program in Radiology is being planned through discussions with the Ministry of Health and one of the premier diagnostic centers in Tbilisi.
- Tbilisi State University moves to establish a medical school based on US curriculum and admission requirements.
- An ongoing program of medical school exchanges was established between Emory University School of Medicine and academic medical leaders in Georgia, including training exchanges completed in psychiatry and neurology.
- An ongoing program of medical student exchanges was established between Emory University School of Medicine and Tbilisi State Medical University. Twenty-one medical students from TMSU have spent four to six months on clinical clerkships at Emory. Seventeen Emory students have spent one month each in Tbilisi, each with a specific health care project. E.g., assessment of iodine deficiency in newborns, prevalence of HIV in patients with tuberculosis, technical support for the legal basis of medicine, etc.
- The Dean and three Executive Deans of Emory have visited Tbilisi, and the Dean and Associate Deans of TMSU have visited Emory School of Medicine.
- Biomedical Research: one meeting was held in Bethesda under the auspices of the Fogarty International Institute of the National Institutes of Health, attended by Minister of Health Jorbenadze, Deputy Minister Gamkrelidze, and other scientific leaders of Georgia. A follow up visit was made to Tbilisi by Dr. Richard Krause of the Fogarty, accompanying Atlanta-Tbilisi partnership members. At this latter meeting Dr. Krause gave an assessment of the state of biomedical research in Georgia, and made explicit recommendations for the future. A third meeting

was held in Tbilisi in 1998, with leading scientists working in AIDS from the NIH. Invited members of this group were Atlanta-Tbilisi partners working with AIDS and tuberculosis in Georgia. Three grants, totaling \$385,000, have been obtained from the NIH and the World AIDS Foundation by joint proposals of Georgian and U.S. Atlanta-Tbilisi partners for research in AIDS and tuberculosis.

## H. Health Information and Literature

- Tbilisi State Medical University and Morehouse School of Medicine Multimedia Center completed a series of training exchanges to improve the practice of library science and upgrade the access to medical literature. Cataloging standards used in the US and Western Europe were introduced and staff at TSMU were trained in these procedures.
- National Information Learning Centre: in collaboration with the Woodruff Health Sciences Center Library at Emory University, the National Information Learning Centre (NILC) was opened in December, 1996, by President Shevardnadze and Ambassador Courtney, providing Internet access to the world's major biomedical databases and selected full text resources. The NILC supplies the information needed for every activity in the health reform process, as well as the practice of medicine and medical education. It will ultimately supply any educational institution in Georgia.
- The NILC provides on-site materials, reference services, document delivery and training in the use of MEDLINE and Internet resources for students, faculty, practitioners and government officials. Internet searching is the most heavily used service, followed by MEDLINE/full-text and email. Searching the Internet is the most heavily used service, followed by MEDLINE searching and email.
- Emory digitizes articles and transmits them to the NILC. An average of 5-10 articles per week.
- The NILC has 200 regular users and 180 irregular users (2200 user visits since opening) who are served by the 64K Internet connection. The CD ROM library has been used by 190 individuals. The NILC book collection has been used by 440.
- The NILC gives classes to healthcare workers and the general public in techniques for email and Internet searching of medical and other electronic databases. Computer classes are given using seven computers.
- The staff of the NILC have participated in training courses at Emory, and Emory librarians have gone to Tbilisi for one week to one month on site courses.
- NILC remote sites: twelve remote users have dial access to the NILC, including TSMU, City Hospital #2, the National Management Center of the Ministry of Health, Georgian State Medical Insurance Company, Tuberculosis Institute of Georgia, Georgian Technical University, AIDS Center of Georgia, Press Center of the Ministry of Health, Tbilisi Department of Health Care, Tbilisi Institute of Postgraduate Medical Training and Qualification, the Department of Pharmacy of the Ministry of Health, the Institute of Dermatology and Venerology and others. The scope of these remote users indicate the enormous usefulness of the NILC.
- Four institutions in the same building are connected by LAN: National Health Management Center - a leading institution in healthcare reform, healthcare standards design and evaluation, medical education reform and medical informatics (electronic medical records); Atlanta-Tbilisi Health Partnership Office; Emergency Medicine Service Training Center; Georgian Nursing Association.

- Four regional healthcare centers - Zugdidi, Ozurgeti, Gori, Batumi are connected to the NILC server via Tbilisi exchange phone-modem connection (unreliable so far). Five more medical institutions in Tbilisi, as well as Kutaisi regional center will be connected in the near future
- The NILC issues a biweekly bilingual bulletin, the *Internet Medical Digest*, that has a circulation of 300. The bulletin contains eight pages that cover topics in public health, health promotion, cardiology, oncology, AIDS/HIV, infectious diseases, epidemiology, disease prevention and control, clinical pharmacology, ob-gyn, tuberculosis prevention and control and micronutrient deficiency.

## I. EMS Training Center

- The National Emergency Medical Services Training Center (EMS TC) opened on October 23, 1995, and continues to train personnel from throughout Georgia in pre-hospital emergency care and life support.
- Five instructors of the EMS TC were trained in Armenia and the U.S.;
- The premises of the center were repaired and well equipped by Atlanta-Tbilisi to provide a satisfactory training site.
- Since the opening 60 training courses have been held, 56 in the training center and four at remote sites: Zugdidi/Samegrelo region; Gali/Abkhazia; Gudauri; and Supsa.
- Twenty-two programs have been special programs for nonphysicians and children
- Other special programs have included governmental guards, car drivers, mountain guides and four day courses in First Aid for pipeline companies.
- 1492 people have been trained in the EMS TC since its opening

Physicians	722
Nurses	159
Red Cross	7
Dept. Extreme Situations	28
Mountain guides	38
Government guards	33
Students	96
Rescuers	106
Car drivers	35
General population	45
Children	142
Pipeline companies	81

- Databases have been created that include all individuals trained by the EMS:
- The distribution of trainees from different regions of Georgia:
 

Tbilisi	1042
Samegrelo	100
Imereti	84
Abkhazeti	42
Kakheti	80
Adjara	38
- The distribution of trainees by age:

26-37 yy.	47%;
18-25 yy.	20%;
36-50 yy.	16%;
6-17 yy. –	11%;
51-60 yy.	6%.

- The following projects have been carried out in the EMS TC:
  - “Healthy Generation”, which provided first aid training for school pupils;
  - “Introduction of first aid and self service training communes”;
  - “Medical Information Bank/Database for emergency service and disaster medicine”;
  - “First aid training for refugees from Abkhazia”
  - “Trauma Prevention Project”
- The staff of the EMS TC participated in:
 

International conferences	5
Fellowships	7
Workshop	10
Exhibitions	5
- All staff of the EMS TC have been trained in computer skills, Internet search, Medline search, E-mail, MS Word, MS Excel and MS PowerPoint
- The webpage of the EMS TC was created in April of 1997
- The staff of EMS has prepared 3 different manuals in first aid and emergency care:
  - for medical personnel;
  - for nonphysicians;
  - for children.
- The first color illustrated textbook “First Aid” in the Georgian and Russian languages was created in the EMS TC.
- A Learning Resource Center was provided by the partnership through AIHA in the EMS Center.
- The Western Road Pipeline project has contracted with the training center to provide training for its personnel.
- A problem is that the center is marginally to under self-sustained. This is due to the poor economy and inability of the public to pay fees more than cost for the courses.
- Satellite offices need to be opened in other sites in Georgia, but funding is a problem. Ultimately these sites will be in regional healthcare centers in conjunction with satellites of the NILC.
- A “Healthy Generation” project is planned to provide first aid training for school children. Funding is currently being sought.
- Future plans include adapting the course for nuclear accidents.

## J. Prosthetics

Amputees represent a major problem in Georgia, with an estimated number of 10,000. About 5,000 of these are the result of landmines from the war in Abkhazia. A sample of 827 patients showed: 77% are from twenty to sixty-five years of age; 7% are children; 10% are women; 50% are above the knee; and 10% are double amputees. During the final decade of the Soviet period 2,000 prostheses were produced, of low quality, made predominantly of wood with some use of steel and leather. The devices were heavy, inconvenient and had many problems

with the socket. The elderly and young found them impossible to use. The average time of exchange for a new one was four years, with many episodes of mending in between. The International Committee of the Red Cross (ICRC) established prosthetic factories in Tbilisi and Abkhazia shortly after independence, and now produce about 300 prostheses a year. Each technician produces one to one and one-half per week. These prostheses are cheap and functional. They last about three years. This number per year does not begin to meet the backlog, much less keep up with the need for replacement. Moreover, they are quite basic, and do not meet the needs of the young and physically active for activities such as skiing that, while not essential, greatly improve the quality of life.

- A prosthetics lab from Fitzsimmons Army Hospital was donated to the Traumatology Hospital in Tbilisi. Space has been renovated and production is beginning.
- An Emory orthopedist completed an evaluation of prosthetics production, needs and foreign assistance in Georgia and developed a plan for improving the capabilities of providing prosthetics in Georgia.
- The combined production of all prostheses facilities in Georgia (ICRC; Atlanta-Tbilisi donated factory; and Otto Bock from Germany) is less than 500 per year, which is far below the need. A plan has been designed to use CAD-CAM technology to produce up to twenty prostheses a day. The Minister has donated one-half the needed money (total needed \$100,000), and Atlanta-Tbilisi has come up with the remainder. This plan will be implemented during the next two years.

#### **K. Micronutrient Malnutrition**

- An initial study of thyroid stimulating hormone levels by Atlanta-Tbilisi in neonate cord blood samples was taken in three areas of Georgia to determine the extent of iodine deficiency in the country - ultimately revealing that the problem was, indeed, endemic.
- The Ministry of Health was made aware of the nature and extent of the problem in Georgia. At the request of the Minister of Health, the Ministry was provided with a detailed briefing document containing information on the public health and economic burden of iodine deficiency as well as possible solutions for elimination vis-à-vis implementation of public health programs to encourage universal consumption of iodized salt. The Minister briefed the Cabinet on iodine deficiency in Georgia, which led to a Decree from the Head of State mandating the universal iodination of salt.
- A team of consultants from the Program Against Micronutrient Malnutrition of the Emory University School of Public Health and the US Centers for Disease Control and Prevention was dispatched to Georgia to share international experience and work with officials from the Ministry of Health and Parliament in developing a detailed plan of action to eliminate iodine deficiency in Georgia, and the subsequent development of a national public health program for implementation. Such a program was established by the Georgian Parliament and Ministry of Health and was initially funded solely by Georgian Government. At the request of the Parliament, additional assistance in funding and establishing partners to support the program was given—ultimately leading to the involvement of Kiwanis International and UNICEF and a \$103,000 donation.
- The Atlanta-Tbilisi Partnership, including representatives from the US Centers for Disease Control and Emory University, organized and facilitated two breakout sessions during the 5th

AIHA Partnership Conference and contributed to a Common Health Magazine article on iodine and iron deficiencies in order to build NIS wide awareness of the impact of micronutrient malnutrition and cooperation for elimination programs.

- The Georgian Ministry of Health brought to the attention of the CIS Council of Health Ministers the issue of micronutrient malnutrition, and the need for an intra-CIS agreement on the trade of iodized salt for the elimination of iodine deficiency. The Atlanta-Tbilisi Health Partnership helped to produce this document which is expected to be signed at their next meeting.
- The Multi-Sectoral Management Course Workshop for Program Managers, Implementors, and Stakeholders for the Elimination of Iodine Deficiency was held and facilitated by the Georgian Ministry of Health and the Program Against Micronutrient Malnutrition at the Emory University School of Public Health in June, 1998. This workshop trained officials from most NIS countries in the public health approach to eliminate and monitor iodine deficiency disorders.

#### L. Tuberculosis

- Henry M. Blumberg, MD, [Associate Professor of Medicine (Division of Infectious Diseases, Emory University School of Medicine and Hospital Epidemiologist, Grady Memorial Hospital)] was invited by the US Agency for International Development (USAID) and CDC to provide technical consultation about ongoing TB activities in the Republic of Georgia and by the Atlanta-Tbilisi Health Partnership to identify areas of possible collaboration and cooperation. The visit was from August 7 through August 16, 1996. A report was provided to USAID and CDC upon completion of exchange which outlined findings and recommendations.
- "The New Tuberculosis: Clinical and Molecular Epidemiology" a lecture was presented by Dr. Blumberg in Tbilisi on August 8<sup>th</sup>, 1996, at the "Public Health Today: Vision of Tomorrow, A Conference on Public Health Surveillance Information Systems" which was sponsored by the Ministry of Health Republic of Georgia, USAID, and the US Centers for Disease Control and Prevention (CDC).
- The Georgian TB Institute laboratory's ability to perform TB cultures and subsequently to perform susceptibility testing has been upgraded. Drug susceptibility information will be of great use to TB control programs and in implementing effective control programs.
- Training of Georgian microbiologist (*Natalia Shubladze, MS*) from the National TB Institute Laboratory in the modern techniques of AFB (TB) cultures. N. Shubladze visited Atlanta for one month in October, 1997; her training took place at the Clinical Microbiology Laboratory at Grady Memorial Hospital, the US State of Georgia Public Health Laboratory and CDC. She has returned to Georgia and has trained fellow microbiologists in Georgia. These efforts have helped establish the ability to perform cultures at the National TB Institute Laboratory.
- A two week visit to Atlanta by George Khechinashvili, MD, Director of the Georgian National TB Program, in August, 1998, was supported by the CRDF grant. The visit provided an opportunity to meet with Dr. Blumberg to go over progress of the CRDF grant as well as have Dr. Khechinashvili meet with the leaders of the Division of TB Elimination at CDC and meet with the directors of the US Georgia TB Control program and local county health departments. He had an opportunity to see how directly observed programs have been implemented and carried out and how surveillance systems are set up in the US.
- Training of Irakli Khulordava, MD, Chief Epidemiologist at the National TB Program. Dr. Khulordava began a Medicine Residency at the Emory University Affiliated Hospitals on July 1, 1998.

- Participation in the US/NIH--Georgian Joint Symposium: Research Opportunities in HIV/AIDS, Emerging Infectious Diseases and Immunodeficiencies. This conference was held in Tbilisi during the week of May 11<sup>th</sup>, 1998. Carlos del Rio, MD and Henry M. Blumberg, MD from Emory University attended the conference. There was a symposium session on TB; both Drs. Khechinashvili and Blumberg were invited to make presentations at this session. There was a second "break out" session on TB that was moderated by Dr. Blumberg and presentations on tuberculosis were given by Georgian physicians and scientists.

#### **M. HIV/AIDS**

- A knowledge-attitudes and behavior survey among high school students in Tbilisi was carried out in April, 1997. The results of this study were presented at the XII International Conference on AIDS.
- Four in-country lectures on HIV/AIDS have been conducted for physicians in Georgia at the Ministry of Health, at the Infectious Diseases hospital in Tbilisi, at the Dusheti District Hospital and at the Pasanauri District Hospital, and two lectures have been given on HIV/AIDS to medical students in Georgia.
- An application to the World AIDS Foundation for the support of a counseling and testing center in Tbilisi was submitted and it was successfully funded with \$50,000.
- An application has been submitted to the Fogarty International Center at the NIH for an AIDS Training Grant with Georgia as one of the collaborating countries in the application.

#### **N. Georgian Medical Journal**

- Five issues of the Georgian Medical Journal were published and distributed to medical personnel throughout Georgia to disseminate medical and pharmaceutical information. Continuation of the journal now awaits alternative funding and revenues.
- The journal provided the foundation for the development of an on-line medical and pharmaceutical information bulletin currently "published" by the NILC.

### **IV. PARTNERSHIP PERFORMANCE VERSUS GOALS**

#### **A. Clinical Practice, Diagnostic Capabilities and Physician Training**

- Most of the predetermined goals related to radiology have been met by the partnership as described above. This is despite the fact that radiology within the Republic of Georgia presents a moving target. At the time of the initial survey by Dr. Casarella, the Institute of Diagnostic Imaging did not even exist. At the current time, the institute provides the only MRI and mammography resources available within the Republic of Georgia.
- The radiology component represents a real opportunity to help define the use of modern technology within the medical setting in the Republic of Georgia. The lack of regulation about radiography and radiology resources represents a problem that is growing on a daily bases. Thus, many individuals who are untrained are attempting to or have already acquired somewhat antiquated radiography equipment and are making available diagnostic imaging resources. The quality of these facilities varies significantly and the potential for harm is great.

- While the original Partnership plan included significant improvement to City Hospital No. 2, economic and political forces beyond control of the Ministry of Health prevented long-term gains at that facility. Specifically, the building scheduled for renovation by the World Bank was occupied by refugees from Abkhazia, and in spite of intercession by President Shevardnadze they remained in the building, making it impossible to renovate. A new site has been chosen by the World Bank, part of the Institute of Trauma, and plans are being made for renovation. Atlanta-Tbilisi is working with the Minister of Health to continue the plans here that were originally designed for City Hospital #2.
- Many individual physicians, nurses and administrators have benefitted enormously by the activities of the Partnership related to City Hospital #2. Physicians from the hospital in various capacities are contributing to a new medical environment in Georgia.
- The house staff training program for Georgian physicians, which now has eighteen total, was successful beyond any expectations, and continues to be so. Three graduates have passed the American Board of Internal Medicine certifying examination with top percentile scores. Eleven of the eighteen have passed the American College of Physician in-service examination with scores in the top percentiles.

## **B. Maternal and Child Health**

- Things moved more slowly than expected. Georgians at first, Georgian participants felt US partners would be bringing technology/objects rather than expertise, which added to other barriers to movement. The lack of ability to consolidate resources in Georgia slowed things down. However, the training piece has been established and is being perpetuated. The Georgian leaders are now seeking funding from the Soros Foundation for Neonatus, the neonatal outreach program.

## **C. Health Policy Reform**

- The original objective of providing technical assistance to the Ministry of Health in its capacity as policy analysis and development, resulted in a Ministry which showed its tenacity, ability to garner international respect and implement bold social change in Georgia's health sector.

## **D. Nursing Reform**

- Georgia's nursing profession has made gains which its US counterparts took decades to achieve. While the movements toward professionalism, improved skills and upgraded educational curricula may appear slow, the system of health care facilities, practitioners and government in Georgia will never retreat to the earlier definitions of Nursing.
- The absence of a proper legal basis for nursing is a problem that is now being addressed.

## **E. Health Management Reform**

- The Partnership goals of improving management skills, financial planning and organizational administration were not capable of engineering the broad development of a "culture of management" which now exists.

## F. Health Promotion

- Even though the social culture in Georgia has been unwilling to accept many messages of health promotion and prevention now standard in US culture, awareness has grown and government policy is moving toward new standards of public health promotion.

## G. Medical Curriculum Reform and Biomedical Research

- The original Partnership association with Tbilisi State Medical University made modest accomplishments in curriculum reform. There were changes in course content in the courses whose directors visited Atlanta, and in general curriculum requirements. E.g., the curriculum was enlarged to include humanities and other subjects recommended by the national study of general medical education in the U.S. some years ago. The name of the medical school was in fact changed to reflect this: Tbilisi State Medical University, rather than “medical school.”
- Plans are now underway to establish a new medical school at Tbilisi State University, modeled exactly after U.S. Medical schools, specifically Emory University School of Medicine. A curriculum has been agreed upon, money has been appropriated, and faculty are being recruited.
- The biomedical research component of this plan is doing well. Recommendations by the NIH to Georgia are being acted upon, beginning with the recommendation that an outside group make a realistic survey of research resources in Georgia.

## H. Health Information and Literature

- TSMU and Morehouse achieved the limited goals of training library staff in Western methods of cataloging and access to the medical literature. While these same cataloging standards are not in general use in Eastern Europe and Western Asia, it was made possible for TSMU librarians to upgrade their own library and access to western literature.
- The NILC has exceeded expectations. Because of the stability in staffing and the expertise the NILC staff has developed, the NILC has been able to consistently deliver service even under the most difficult of economic situations and with the problems brought about by the instability of electric and telecommunications services.
- Staff have successfully managed a Local Area Network since March, 1997, for four organizations that share the same building with the NILC. With twelve organizations connected to the NILC for remote access of Internet and other services, the NILC has managed a much larger base of remote users than originally expected.
- Staff have been trained in providing reference services and requesting copies of documents from Emory and have demonstrated their ability to perform these services as evidenced by the constant flow of requests from Tbilisi to Emory.
- Students from Aeti Medical School and TSMU have used the multimedia educational resources in the NILC.
- The professional level of the staff is exceptionally high: MDs, PhDs. NILC staff have participated in several high level overseas continuing education initiatives. One staff member has just gone to Vanderbilt University to get a Master’s degree in Medical Informatics. He will return to the NILC in two years, and is expected to be a leader in informatics in Georgia in the future.

- Due to the high rental cost of regional communication lines connections with regional healthcare centers are difficult to come by. This is a high priority in the ensuing two years.
- Unstable electricity is a constant difficulty. The NILC has its own diesel generator, provided by Atlanta-Tbilisi, and this solves some of the problems. But there have been significant losses due to high voltage spikes.
- Salary support remains a significant problem. At this time charges for services provide about ten percent of the budget for the library, and this figure is standard throughout the world's libraries. The Minister of Health has committed substantial funds for the NILC, but not enough to provide the level of expanding services that are needed. Lack of stable funding makes it difficult to retain staff. This hasn't been a problem yet, but it is of significant concern.
- The NILC has a continuing aggressive policy of seeking outside funds from governmental and other organizations. A \$50,000 grant from the Soros foundation has been one result, and others are on the table.

### **I. Emergency Medical Services Training Center**

- The EMS Training Center has been splendidly successful, as the statistics given in the section above indicate. Plans are currently being made to use the center in Tbilisi as a template and to set up satellites in other areas of the country.
- A well equipped training center was opened;
- The EMS TC realized its main goal – training people in first aid and emergency care
- The country, age and occupational coverage of the EMS training sessions have been substantial and have had a formidable impact upon first aid training in the country.
- The Training Center has authored an increasing body of electronic and printed educational materials in Georgian and Russian for widespread dissemination.
- The EMS TC keeps up with current state-of-the-art information in emergency medical services through constant searching of the Internet.
- An increasing number of high school students are being trained in first aid.

### **J. Prosthetics**

- The Prosthetics initiative has had a major success in getting the Fitzsimmons Army Hospital prosthetics factory donated, through the good offices of AIHA and a member of Congress. A detailed assessment of needs and how to meet them has been carried out by the partnership, and a plan is in place for meeting the needs.

### **K. Micronutrient Malnutrition**

- The partnership not only met its original objective of limited technical assistance, but went above and beyond this goal by actually putting together measures to solve this serious public health problem in Georgia, acted upon them quickly, and built partners for sustainable support. Furthermore, the partnership laid the groundwork for the regional elimination of iodine deficiency by creating awareness of the issue and initiating intra-republic cooperation. It is believed that this will ultimately result in long-lasting and cost-effective measures to improve the health and economy of the Georgian, and NIS, and their people.

- The project to eliminate iodine deficiency was budgeted and provided with no additional funding by AIHA or the Atlanta-Tbilisi Partnership with financial and personnel support coming from in-kind donations from: the Georgian Government, Kiwanis International, UNICEF, the Program Against Micronutrient Malnutrition, Emory University, the Hubert Trust, the Micronutrient Initiative, USAID, the OMNI Project, and received the Centers for Disease Control and Prevention. It is estimated that the total in-kind support for these activities was at least \$250,000.

#### **L. Tuberculosis**

- The project collaboration has surpassed the modest initial goals of the original Partnership exchange. The Ministry of Health has committed resources to its National Georgian TB Program, conducted training seminars, upgraded testing and treatment protocols. Extensive funding has been obtained to continue research collaborations and training beyond the scope of the USAID/AIHA Partnership. An international collaboration has been established bringing attention and resources much needed for addressing tuberculosis in Georgia.

#### **M. HIV/AIDS**

- The collaboration in HIV/AIDS of Emory University with Georgia has been very successful. Although the collaboration did not begin until March of 1997 when a joint proposal was submitted for funding to the World AIDS Foundation we have been able to achieve all the original goals.

### **V. UNANTICIPATED OUTCOMES**

#### **H. Health Information and Literature**

- NILC--The energy and inventiveness of the NILC staff has led to many opportunities, some of which have been enacted. Two examples are the NILC Web site and the publication of the Internet Medical Digest (circulation 250-300 with 18 issues published to date). The NILC has been involved in many proposals regarding distance learning and telemedicine.
- While "medicine" was the initial focus, the NILC's impact has also been felt in nursing (witness the active interest from Kutaisi to use NILC services for nursing training and information access), health administration and other fields.
- NILC staff have had opportunities to travel to the US for additional training (not funded by USAID/AIHA). The Director has been invited to participate in international conferences and review panels.
- Contacts with many other institutions have been forged owing to the good reputation of the NILC and its staff: University of Cincinnati, Yale University, University of Toronto and the US Department of Defense Telemedicine Center.
- Most importantly, the Ministry of Health is placing a higher value on the impact access to the biomedical literature has on the quality of healthcare in Georgia.

#### **I. EMS Training Center**

- The training program at the EMS Center has been so successful that it has attracted attention of private companies to our center, for example, companies working within WRPP have signed agreements with the Center to train all their employees in our center in a special program "First Aid at Work".

#### **L. Tuberculosis**

- Funding was received (9/97-8/98) by the University Research Council of Emory University to support this project (\$15,000; Henry M. Blumberg, MD, Principal Investigator).
- Received funding from the Civilian Research and Development Foundation (CRDF) for the Independent States of the Former Soviet Union. The project is entitled, "Clinical and Molecular Epidemiology of Tuberculosis in the Republic of Georgia" 10/97-9/99 (\$35,000). This is a collaborative effort between US and Georgian investigators. The co-Principal Investigators are George Khechinashvili, MD, Director of the National TB Program and TB Institute and Henry M. Blumberg, MD of Emory University. This project is ongoing and has provided public health benefits by providing training to Georgian microbiologists and helping upgrade the National TB Institute Laboratory. Efforts are ongoing to obtain additional resources to improve the public health laboratory infrastructure and support of this project as well.
- Three Emory medical students have contributed through completing research projects, including data collection that is being submitted for publication in *The International Journal of Tuberculosis and Lung Disease*.

#### **M. HIV/AIDS**

- The collaboration of Dr. del Rio and Dr. Blumberg (who is a partner with the Georgian TB Institute) has resulted in the beginning of collaborative work between the Georgian AIDS & Clinical Immunology Research Center and the Georgian TB Institute.
- Additional funding has been received from the World AIDS Foundation for the support of a counseling and testing center in Tbilisi was submitted and it was successfully funded with \$50,000; additional funding applications are being submitted.

### **VI. IMPACT ON THE US PARTNERS**

#### **A. Clinical Practice, Diagnostic Capabilities and Physician Training**

- The establishment of a radiology infrastructure within Georgia represents a unique opportunity to American radiology. Radiology is an emerging resource within Georgia and has not been developed according to traditional medical roles seen within the US. To the radiologist, this affords the unique opportunity to establish radiology as it were within a vacuum. Resources can be established and allocated according their greatest impact, rather than according to prevailing practice patterns, many of which are incorrect. Certainly to a radiologist within the United States, the ability to decide how to provide diagnostic imaging resources to give the maximum reward for the minimal cost represents a challenge that has the potential of being rewarding.
- In addition, the market factors driving individuals not trained in radiology to provide diagnos-

tic imaging facilities provides the opportunity to study the matter in which business drives the allocation of medical resources. Clearly several opportunities such as teleradiology, digital radiography and remote viewing have the potential of being major factors within a new radiology infrastructure within Georgia. In so far as known current significant infrastructure exists, it may be possible to develop a modern infrastructure without the initial barrier of dismantling an obsolescent infrastructure that we have here within many of the communities within the United States. In that manner, radiology in Georgia provides the opportunity of serving as a model for the next generation of radiology within the United States.

- The house staff training program, with eighteen physicians, demonstrated how smart and highly motivated individuals can become superb physicians no matter where they are trained or how ancient the curriculum. One of these individuals is on the Emory medical school faculty; another is doing a fellowship in neurology at Yale, and a third is doing a fellowship in nephrology at Emory. A fourth will become a cardiology research fellow in Texas in two months.

## **B. Maternal and Child Health**

- Impact was positive for all of us-to watch democratization process encouraging. To work abroad in a cultures civilized society was a pleasure. Emory has added to its international reputation through Partnership collaborations.

## **H. Health Information and Literature**

Health Sciences Center Library staff who have participated in this project have benefitted enormously in several ways:

- Gaining a better understanding of the global nature of our information society.
- Gaining an appreciation of the different approaches to problem-solving in the health sciences and the ways in which the biomedical literature can support them.
- Making personal contacts with Georgians and with other health information professionals throughout the US, Europe and NIS to the general benefit of global understanding and exploration of library science goals in the global society.
- A sense of contributing to the improvement of healthcare and health education throughout the world.

## **L. Tuberculosis**

- The social/cultural benefits provided for those involved in the program and trainees has been outstanding. Physicians and medical students have been impressed with the hospitality of the Georgians and the desire to improve their country. The program provides a unique opportunity for training benefits and areas for collaboration in public health, applied research and even basic research.

## **M. HIV/AIDS**

- Emory University has been able to apply to the Fogarty International Center for an NIH-sponsored AIDS Training and Research Program.

## VII. OTHER

- **RADIOLOGY:** This is a critical period in the evolution of radiology as a medical entity within the Republic of Georgia. The development of a Georgian Board of Radiology is of paramount importance. This is significant both in terms of training radiologist and more importantly in the short run in protecting the Georgian public against substandard and even dangerous radiological facilities.
- **RADIOLOGY:** Additional training exchanges are needed to continue the development begun, particularly in the areas of mammography, postgraduate training curriculum, and in establishing the procedures in professional and facility accreditation.
- **NATIONAL INFORMATION LEARNING CENTRE:** It has also been a huge commitment of time that is sometimes hard to balance with the day-to-day demands of the workplace. The extent to which AIHA can streamline its procedures to make life easier for these "volunteers" from Emory, the projects will benefit.
- **TUBERCULOSIS:** Activities are ongoing now to assist the National Georgian TB Program in developing a plan to implement DOTs and to identify resources that would assist in the implementation of such a program—initially as pilot programs in Tbilisi, Kutaisi, and Zugdidi. In the long run these programs should prove to be cost-effective by controlling and preventing tuberculosis. Project needs include: implementation of the WHO recommended DOTs (directly observed therapy, short course) in Georgia, Improving the TB laboratory infrastructure, and Training and education to support the first two initiatives.
- **TUBERCULOSIS:** A number of research opportunities exist in Georgia including those in the area of MDR-TB, diagnosis and diagnostic tests for TB, implementation of new therapies for TB, surveillance/epidemiology (both molecular and population-based), prevention efforts, short course preventive therapy trials, as well as other clinical trials and vaccine trials should a candidate vaccine become available. In addition, there is the opportunity to strengthen the TB program at the time of refunding of the Georgia-Georgia initiative by USAID. It is clear that a concerted effort on the part of many agencies will be necessary to adequately address the health issues and pursue the research opportunities in TB in Georgia.

## VIII. CONTACTS

Please list relevant partnership contact information. These contacts will be listed in AIHA's final partnership summary reports to USAID as persons to be contacted with any future questions or inquiries.

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**Emergency Medical Services Training Center**

<http://www.nilc.org.ge/ems/index.html>  
**Atlanta-Tbilisi Health Partnership**  
<http://www.nilc.org.ge/atp/index.html>  
**Tbilisi State Medical University**  
<http://www.nilc.org.ge/medun/index.htm>

## **Appendix A**

Radiology in Tbilisi: The Legacy of 70 Years of Soviet Government; William J. Casarella. AJR. (American Journal of Roentgenology) 1993; 161:23-25.