

 The Children's Hospital *of* Philadelphia

The David N. Pincus Global Health Fellowship

**D E V E L O P I N G L E A D E R S
I N
P E D I A T R I C
G L O B A L H E A L T H**

Table of Contents

- 1. Introduction**
- 2. Background**
- 3. Fellowship Description - Overview**
- 4. Global Health Faculty**
- 5. Curriculum and Learning Opportunities, References and Reading List**
- 6. Administrative Information**
 - a. Benefits**
 - b. Eligibility**
 - c. Application Process**
 - d. Timetable**

INTRODUCTION

Given estimates of nearly 25,000 children across the globe dying each day from preventable causes, the plight of too many children in resource poor nations has remained an inexcusable horror for too long. The solutions to such an expansive and enduring problem clearly lie in building an array of global interventions that provide both immediate relief and incremental long-term change.

The Children's Hospital of Philadelphia established the David N. Pincus Global Health Fellowship in order to train future leaders in the field of pediatric global health. Around the world in developing countries, significant challenges to child health include the fragmented access to comprehensive pediatric health services, lack of basic pediatric knowledge and a scarcity of trained local healthcare personnel dedicated to improving the health of children. **The David N. Pincus Global Health Fellowship is a two year training program** that addresses these challenges through direct service, academic initiatives and the cultivation of future leaders with strong clinical skills and practical leadership experience.

The Children's Hospital of Philadelphia's mission to "strive to be the world leader in the advancement of healthcare for children" compels the Hospital to invest in programs which will improve the health of children around the world. This mission is supported by the Pincus Fellowship by creating and maintaining collaborations among health care professionals affiliated with The Children's Hospital of Philadelphia and global partners committed to improving children's health. The Fellowship provides opportunities for clinical care, education and research that advance the knowledge relative to children living in developing countries and the challenges faced by the practice of medicine in these settings. Fellows will complete the program equipped to continue in careers dedicated to children's health in resource scarce communities.

This Fellowship actively collaborates with the Columbia University International Family AIDS Program, Rainbow Sparrow Village, the Botswana-UPenn Partnership and the Centro de Salud Divina Providencia. The Fellowship provides an opportunity to develop skills in leading global health programs that address the challenges facing children living in poverty through expanded access to healthcare services and improved pediatric health education for families and capacity building at the professional and community level. Additionally, it supports the critically important process of training the next generation of internationally focused pediatricians and healthcare professionals.

Global Health at The Children's Hospital provides access to pediatric healthcare, capacity building through sustainable educational efforts, relevant research and supports community collaboration for children in The Dominican Republic and Botswana. Annually, Global Health serves hundreds of children in its community based health center, Niños Primeros en Salud and reaches more than 1,000 children annually in the bateyes of the eastern region of The Dominican Republic. The Children's Hospital also supports pediatric health care in Botswana at the Princess Marina Hospital and in the northern referral center, Nyangabwe Hospital.

The David N. Pincus Global Health Fellowship supports pediatricians to serve the children and communities in our partner countries for two years. One Global Health Fellow will work in the Dominican Republic collaborating with the Columbia University International Family AIDS Program. The Africa-based Fellow will work in South Africa to support the health of children living with HIV/AIDS at Sparrow's Village and in Botswana working in collaboration with the Botswana-University of Pennsylvania Partnership and our colleagues in the Department of Paediatrics at the University of Botswana School of Medicine.

BACKGROUND:

GLOBAL HEALTH AT THE CHILDREN'S HOSPITAL OF PHILADELPHIA

Global Health at CHOP traces its beginning at The Children's Hospital to 2004 when a passionate group of physicians and nurses first traveled to Hispaniola. In early 2005, a commitment was made to the community of Consuelo to provide clinical support to children living in bateyes. This effort grew tremendously over the years through the hard work of many volunteers and partners in the Dominican Republic. The international humanitarian efforts of the Institution were formalized in 2008 with the establishment of the Global Health Department.

Our programs bring pediatric health services and expertise to children living in extreme poverty in the developing world. Global Health prioritizes collaboration with global partners to improve the health children, while also serving as a source of training and professional growth for staff of The Children's Hospital. Global Health, formerly the Alliance for International Medicine, has established affiliations with partners such as the University of Pennsylvania School of Medicine and Columbia University in addition to global partners in the Caribbean and Africa.

Global Health's international priorities include an interdisciplinary approach utilizing teams of pediatric healthcare professionals (pediatric residents, nurses, physicians, nurse practitioners, medical students and support staff) from Children's Hospital and affiliated organizations who volunteer their time and expertise in the countries and areas where the need for pediatric health care is extreme.

The Children's Hospital supports children living in some of the world's most difficult and impoverished communities through service, education and research. Global Health seeks to develop the capacity at the local level and build infrastructure to provide health services as a means of enhancing the well being of the people of developing nations. In doing so, Global Health strives to reduce the mortality of young children caused by preventable causes of death. Global Health not only accentuates the tremendous generosity of spirit and energy of participants but also allows The Children's Hospital of Philadelphia to share its nationally prominent professional staff with the international pediatric healthcare community.

The David N. Pincus Global Health Fellowship is a cornerstone in the foundation of Global Health's many endeavors. The Fellowship trains pediatricians to become leaders, educators, and future faculty in the growing field of pediatric global health with expertise in program design and implementation at the community level.

FELLOWSHIP DESCRIPTION - OVERVIEW

Fellowship Purpose: The David N. Pincus Global Health Fellowship seeks to cultivate and support the professional training of future leaders in pediatric global health. Through the Fellowship, there will be increased access to and availability of high quality healthcare for children living in impoverished areas. The program provides opportunities for Global Health Fellows to enhance their knowledge and skills in pediatric global healthcare. The Fellowship seeks candidates who not only want to provide clinical service in the developing world, but are also problem solvers who will help design, implement and monitor outcomes of collaborative interventions benefiting children in the partner communities.

Fields of Study and Practice: The two year Global Health training model combines clinical service in a developing country, development and delivery of educational materials, and an opportunity to design and complete an academic research project under the mentorship of Children's Hospital Department of Pediatrics faculty. The Fellows' clinical experience is focused on diseases particularly common in resource poor regions of the world such as malnutrition, water related illnesses, acute respiratory disease, diarrhea, tuberculosis and HIV/AIDS. Tropical diseases may also play a large role in the causes of childhood diseases in the partner countries.

Clinical Service: The Global Health Fellows will work collaboratively with in-country professional colleagues. In both settings, the Fellow will have regular and ongoing pediatric clinical responsibilities. The range of clinical service includes: primary and urgent ambulatory care, outreach and home visits, office visits for acute and preventive services, and inpatient pediatric care performed at the level of a general inpatient pediatric hospitalist.

Fellows are expected to connect with and augment existing health care systems in their communities with the guidance of the Fellowship faculty and in country partners. They will serve to make available pediatric health services in areas of minimal resources. They will develop and improve their diagnostic skills by practicing medicine in areas with limited diagnostic resources.

Education: The Global Health Fellows will be expected to gain knowledge regarding the pediatric health priorities in their communities. They will be expected to both actively coordinate and present ongoing educational activities in their community working collaboratively with other healthcare professionals. They will be supported by the Global Health Faculty at The Children's Hospital of Philadelphia and be mentored in proven methods of successful adult education.

Additionally, each fellow will be provided opportunities for learning at The Children's Hospital of Philadelphia and the University of Pennsylvania. The fellowship will provide a basic core curriculum and additional educational opportunities individualized given the interest and motivation of the Fellow.

Research: Opportunities for research will be supported by academic programs throughout the Fellowship. Fellows will be trained to understand research design, use the principles of clinical epidemiology and evidence -based medicine and to understand statistical analysis during the course of the Global Health Fellowship. The acquisition of research skills will be a part of the curriculum for each Fellow. Intensive coursework and training will occur at the start of the Fellowship at the Center for Clinical Epidemiology and Biostatistics at the University of Pennsylvania. Individualized mentoring will then allow each Fellow to choose to explore research interests with a Faculty member.

Scholarly Activity: Each Fellow will work closely with a faculty mentor to research, plan and execute a scholarly academic activity. The realm of academic projects is flexible based upon the interests of the Fellow, but guided closely by a chosen faculty mentor. The Scholarly Activity will be a mandatory requirement for completion and certification at the completion of the Fellowship.

Fellowship Locations: Global Health Fellows will work in The Dominican Republic or in Africa; Botswana and South Africa. Both locations include collaborative work with local partner health delivery systems.

THE DOMINICAN REPUBLIC: In collaboration with the Centro de Salud Divina Providencia in the town of Consuelo the Fellow will perform their primary clinical responsibilities in the province of San Pedro de Macoris. The Fellows will share clinical time between the Centro de Salud and the Columbia University International Family AIDS Program in nearby La Romana.

In Consuelo, the Fellow will be an active pediatric provider in the Niños Primeros en Salud program. This program is housed at the Centro de Salud Divina Providencia. The Fellows will provide regular outpatient consultation to general pediatric patients and actively engage in community health and wellness programs such as those related to nutrition, immunizations, community health workers, or parasitic infections. Fellows see and care for patients at the center and consult with the pediatric staff and the batey outreach program which provide care to underserved children living in the bateyes in the region. Fellows will work in the Consuelo barrios doing home visits and community health in order to improve access and provision of care to children living in extreme poverty. The onsite collaborators in Consuelo also include the Ministry of Health (at the Public Health Hospital, the Maternidad) and the Clinton HIV/AIDS center.

In La Romana, the Fellow works collaboratively with the Columbia University Family AIDS Program. Fellows provide clinical services in an ambulatory setting for children living with HIV/AIDS. The Fellow performs basic pediatric care while learning the standard of HIV/AIDS care in the Caribbean.

SOUTH AFRICA/BOTSWANA: In these two neighboring countries, the Global Health Fellow will work under the supervision of the Global Health African Program Director. The Fellow will share fellowship time between Sparrow's Village in Johannesburg (a residential pediatric AIDS home for children), South Africa and Princess Marina Hospital in Gaborone, Botswana. In South Africa, the Fellow focus on specific pediatric health projects under the guidance of the Fellowship Director, the Africa Program Director and/or global health faculty mentors. They will provide pediatric medical expertise to Sparrow's village in collaboration with the administration of the program. In Botswana, the Fellow will be expected to provide inpatient and/or outpatient general pediatric clinical care as part of the CHOP Pediatric program in collaboration with the University of Botswana School of Medicine Department of Paediatrics and the Botswana-UPenn Partnership.

The Children's Hospital of Philadelphia: There is opportunity for the Fellows to pursue specific fields of interest for designated periods of time at The Children's Hospital of Philadelphia working with a faculty advisor. These experiences will be individually designed to enhance their primary clinical responsibilities in international settings and will be determined with the approval of the Fellowship Director.

GLOBAL HEALTH FACULTY



Rodney R. Finalle, M.D.

Associate Professor of Pediatrics, University of Pennsylvania School of Medicine

Director of Global Health and International Patient Services at The Children's Hospital of Philadelphia

The David N. Pincus Global Health Fellowship Director

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Dr. Finalle is the Director of Global Health at The Children's Hospital of Philadelphia. The field of Global Health has seen tremendous growth in the past seven years at the Children's Hospital of Philadelphia and Dr. Finalle has been an integral part of that expansion. In his position as Director of Global Health, Dr. Finalle oversees and provides leadership and guidance to the wide variety of Global Health activities throughout the institution including the Pincus Fellowship, the annual Global Health Symposium, and the Global Health Allies program. Dr. Finalle provides the strategic vision to the critically important area of global child health. Dr. Finalle is also the Medical Director of International Patient Services at The Children's Hospital of Philadelphia where he oversees and directs the care of children coming to the Hospital from around the world.

As a faculty member in the Division of General Pediatrics at the University of Pennsylvania School of Medicine, Dr. Finalle has many years of experience in pediatric medical education. He was the Founder and Executive Director of The Children's Hospital of Philadelphia's Alliance for International Medicine (CHOP-AIM) from 2004-2008. Dr. Finalle is a general pediatrician, and former Medical Director of the Children's Hospital's Primary Care Center at Cobb's Creek in West Philadelphia. As a Fellow of the American Academy of Pediatrics (FAAP) he serves on the AAP Section on International Child Health. Dr. Finalle was the former Clinical Director of Global Health Ministry where he guided and provided health care to children in under developed nations of the Caribbean, Central and South America. He completed his pediatric training at The Children's Hospital of Philadelphia, and medical school at the University of Pennsylvania School of Medicine. His international work has included extensive work in Haiti, The Dominican Republic, Botswana and Africa. Dr. Finalle has worked collaboratively with less developed countries and he has championed a model which partners a US based academic health center with a health system in a resource scarce country. The Children's Hospital Global Health programs have successfully developed an interdisciplinary approach utilizing physicians, nurses, and nurse practitioners, residents and medical students to improve children's health in a population of migrant Haitians living in extreme poverty in the Dominican Republic.

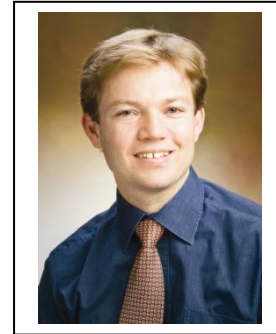


Samir S. Shah, M.D., M.S.C.E.

Assistant Professor of Pediatrics and Epidemiology, University of Pennsylvania School of Medicine
Research Director, Global Health at The Children's Hospital of Philadelphia
Research Faculty Advisor, the David N. Pincus Global Health Fellowship
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Samir S. Shah, MD, MSCE is Assistant Professor of Pediatrics and Epidemiology at the University of Pennsylvania School of Medicine and an Attending Physician in the Divisions of Infectious Diseases and General Pediatrics at The Children's Hospital of Philadelphia. As Director of Research, he oversees the global health research agenda in Botswana and the Dominican Republic. Dr. Shah is a graduate of the University of Pennsylvania (B.A., Biology) and the Yale University School of Medicine. He completed a residency in Pediatrics as well as fellowships in both Pediatric Infectious Diseases and Academic General Pediatrics at The Children's Hospital of Philadelphia. He also received a Master of Science degree in Clinical Epidemiology from the University of Pennsylvania School of Medicine.

Dr. Shah seeks to improve clinical outcomes of children with common childhood infections. His current research focuses on important infectious causes of mortality in countries, including lower respiratory tract infections and meningitis. He receives research funding from several organizations including the National Institutes of Health, the Robert Wood Johnson Foundation, and the Penn Center for AIDS Research. Dr. Shah is editor or co-editor of 6 books in the fields of pediatrics and infectious diseases including *The Philadelphia Guide: Inpatient Pediatrics* (Lippincott Williams & Wilkins, 2005), *Pediatric Infectious Diseases: The Requisites in Pediatrics* (Mosby, 2008), and *Pediatric Practice: Infectious Diseases* (McGraw-Hill Medical, 2008).



Andrew P. Steenhoff, M.D., DCH (UK), FCP (SA) Pediatrics

Attending Physician, Division of Infectious Diseases

Africa Program Director, Global Health at The Children's Hospital of Philadelphia

Botswana In-country Research Director, University of Pennsylvania Center for AIDS Research

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Dr. Steenhoff is an Attending Physician in the Division of Infectious Diseases at the Children's Hospital of Philadelphia, and a board certified specialist pediatrician in the US, Botswana and South Africa. As Africa Program Director of Global Health at the Children's Hospital, he leads activities in Botswana and South Africa. Dr Steenhoff is a graduate of the University of the Witwatersrand Medical School in Johannesburg, South Africa. He did pediatric residency training in South Africa, England and the United States and also served as Chief Resident at Albert Einstein Medical Center in Philadelphia. He obtained fellowship training in General Pediatrics in South Africa and in Infectious Diseases at the Children's Hospital of Philadelphia. He has completed course work towards a Master of Science degree in Clinical Epidemiology from the University of Pennsylvania School of Medicine. He has extensive international pediatric experience having done clinical work in South Africa, Lesotho, Zambia, Botswana, England and the United States.

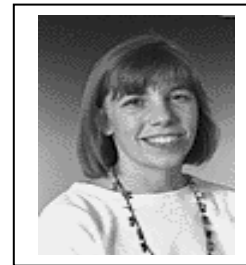
Dr Steenhoff combines clinical and research skills to improve pediatric outcomes in the developing world. His research focuses on pediatric infectious diseases with a particular interest in HIV and tuberculosis. Dr Steenhoff is responsible for leading, designing and facilitating research to investigate key questions in pediatric care in Botswana. He receives funding from the President's Emergency Plan for AIDS Relief (PEPFAR), the Stoke's Research Institute and the National Institutes of Health through the Center for AIDS Research of the University of Pennsylvania. He resides in Gaborone, Botswana, and is a member of Botswana's National HIV Specialist Panel.



Shirley Huang, MD

Associate Professor of Pediatrics, University of Pennsylvania School of Medicine
Faculty, The David N. Pincus Global Health Fellowship
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Shirley Huang, M.D. is the Medical Director for the Healthy Weight Program and Attending Physician in the Division of Gastroenterology, Hepatology, and Nutrition at The Children's Hospital of Philadelphia. She received her B.S. in Nutritional Sciences at Cornell University and her M.D. from the State University of New York at Buffalo. She completed her general pediatrics residency at The University of North Carolina at Chapel Hill and her nutrition fellowship at The Children's Hospital of Philadelphia. Dr. Huang's background and interests include clinical nutrition (obesity prevention and management, dyslipidemia, and nutrition support), nutrition program development, community nutrition, nutrition education, and international nutrition. Internationally, she has worked as a medical missionary at Tenwek Hospital in Kenya, and has also served a provider, educator and nutrition expert for CHOP's Global Health Program in the Dominican Republic and Botswana. She also has served as a committee member and co-chair on CHOP's Global Health Symposium Committee.

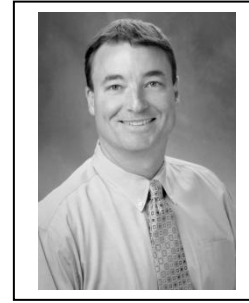


Susan E. Coffin, MD, MPH

Associate Professor of Pediatrics, University of Pennsylvania School of Medicine
Global Health Faculty, The David N. Pincus Global Health Fellowship

Dr. Coffin is an Associate Professor of Pediatrics in the Division of Infectious Diseases at the University of Pennsylvania School of Medicine. Dr. Coffin is the Hospital Epidemiologist and Medical Director of the Department of Infection Prevention and Control at the Children's Hospital of Philadelphia. She is actively engaged in the clinical care of children with infections, teaching of medical students and residents, and hospital administration. Dr. Coffin has an active and well-funded research program that focuses on the prevention of healthcare-associated infections and vaccine-preventable diseases. Dr. Coffin is an active participant in numerous local, state, and nation-wide public health programs that address such topics as: pandemic influenza preparedness, pediatric influenza, and the prevention of hospital infections. In addition, Dr. Coffin has worked on infectious diseases prevention projects in healthcare and community settings in Botswana and Ghana.

Dr. Coffin's interests include: pediatrics, infectious diseases, public health, vaccines and vaccine-preventable diseases, infection control and healthcare-acquired infections, quality improvement.



Kevin Osterhoudt, M.D.

Associate Professor of Pediatrics and Emergency Medicine, University of Pennsylvania School of Medicine
Global Health Faculty, The David N. Pincus Global Health Fellowship

Dr. Osterhoudt is an Associate Professor of Pediatrics at The Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine, is an attending physician in the Division of Emergency Medicine and the medical director of The Poison Control Center at CHOP, and is a faculty member in the Community Outreach and Education Core of the Center of Excellence in Environmental Toxicology at Penn. He has co-authored over 100 journal articles and textbook chapters, and serves on the editorial boards of *Pediatric Emergency Care* and *Clinical Toxicology*. Dr. Osterhoudt was awarded the David Cornfeld Bedside Teaching Award by The Children's Hospital of Philadelphia in 2005 and the Scott Mackler Award for Excellence in Teaching by the University of Pennsylvania in 2008. He has served nationally on the Board of Directors of the American College of Medical Toxicology, and as the American Board of Pediatrics' representative to the medical toxicology sub-board; and has been appointed to the Board of Directors of the Council on Environmental Health of the American Academy of Pediatrics. International experiences have included participation in a 2002 delegation to establish a pediatric emergency medicine program in Kosovo, and participation in the Global Health Program's medical outreach to the Dominican Republic in 2007. Dr. Osterhoudt's primary academic interests are in the areas of childhood poisoning prevention and treatment, and in the assessment of environmental risks to pediatric health.



Debra Voulalas, M.D.

Clinical Associate Professor of Pediatrics
Global Health Faculty, The David N. Pincus Global Health Fellowship

Debra Voulalas, M.D. is the Assistant Medical Director and Attending Physician at the Pediatric Primary Care Center at Market St. at The Children's Hospital of Philadelphia (CHOP), and an Attending Physician of the Primary Care Combined Medical Home Project at CHOP. She is a Clinical Associate Professor of Pediatrics at the University of Pennsylvania School of Medicine. She received her B.S. degree in Zoology from Rutgers University in New Jersey and her M.D. degree from The Albert Einstein College of Medicine in the Bronx, N.Y. where she also completed her pediatric residency and fellowship in General and Behavioral Pediatrics. Dr. Voulalas's interests include sickle cell disease, asthma, disorders of growth and development and international health. Her clinical research has included evaluation of vaccine efficacy in children with sickle cell disease. She has participated in the Children's Hospital of Philadelphia's global health initiative in the Batey Mobile Health Project in the Dominican Republic.



Allison Ballantine, M.D.

Assistant Professor of Pediatrics, University of Pennsylvania School of Medicine
Global Health Faculty, The David N. Pincus Global Health Fellowship

Allison Ballantine, MD is an Assistant Professor of Pediatrics at the University of Pennsylvania. She is the Section Chief of Education for the Division of General Pediatrics at The Children's Hospital of Philadelphia where she is an attending on the general pediatrics and palliative care services. She is also the medical director of the Integrated Care Service at the Children's Hospital of Philadelphia, a hospitalist team caring for medically complex inpatients. As Section Chief of Education, Dr. Ballantine coordinates educational programs within the Division of General Pediatrics, as well as advising and education-related research and pedagogical projects within the institution. Her specific interests center around the process of mentorship and junior faculty development. Dr. Ballantine is very active nationally in the pediatric hospitalist movement with a specific focus on the challenges of providing comprehensive care to medically complex and underprivileged patient populations.

Dr. Ballantine graduated from Mount Holyoke College (BA) and Pennsylvania State College of Medicine (MD) and then went on to complete her training in general pediatrics at The Children's Hospital of Philadelphia. She is currently in the process of completing her Masters in Education through the University of Cincinnati and Cincinnati Children's Hospital.



Anthony A. Luberti, M.D.

Medical Director, Informatics Education, Center for Biomedical Informatics, The Children's Hospital of Philadelphia

Associate Clinical Professor of Pediatrics, University of Pennsylvania School of Medicine

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Dr. Luberti is the Medical Director of Informatics Education in the Center for Biomedical Informatics at The Children's Hospital of Philadelphia. Informatics and information technology are disciplines which have been shown to help support clinical care, education, and research efforts in Global Medicine. Since February 2009, Dr. Luberti has been involved in various aspects of CHOP's Global Health programs including the development and application of database programs and an open source Electronic Health Record (EHR) system for various HIV/TB clinical and research efforts in Botswana. He has also been involved in the use of various technologies and distance learning methods to support the Fellowship and the new Medical School and Paediatric Residency Programme at the University of Botswana.

Dr. Luberti received his MD from the University of Pennsylvania School of Medicine and a Masters in Information Science from Penn State University. He has more than 10 years experience with the implementation of several Ambulatory EHR systems at CHOP in both ambulatory and inpatient settings. He has been instrumental in the design and implementation of a wide range of educational activities—including instructor-led, computer-based, and distance learning methodologies—especially as related to clinical pediatrics, the EHR, and the use of technologies in the disciplines of education and informatics. Dr. Luberti also serves as Medical Director of CHOP's nurse triage call center, and is a supervising/attending physician for pediatric residents in CHOP's Resident Continuity Clinic. Elizabeth Lowenthal, M.D.

Elizabeth D. Lowenthal, M.D.

CHOP Global Health, Lead Physician for Africa

Pediatrician, Special Immunology at the Children's Hospital of Philadelphia

Instructor of Pediatrics

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Dr. Lowenthal joined the CHOP Global Health faculty in 2009. Prior to coming to CHOP, she spent 4 years living in Botswana where she served as Associate Director of the Botswana-Baylor Children's Clinical Centre of Excellence. She has also served on national medical advisory committees for Botswana and as a consultant to the World Health Organization. Dr. Lowenthal is a pediatrician and clinical researcher whose work focuses on the care and treatment of children and adolescents with HIV. Her primary research focus is related to learning how to best support perinatally HIV-infected children in low-resource settings as they transition to adulthood.

Dr. Lowenthal provides medical student and resident education related to pediatric global health issues and helps to prepare CHOP residents taking part in Botswana elective rotations. She also provides clinical and project support to the Global Health Fellows.

CURRICULUM AND LEARNING OPPORTUNITIES

The David N. Pincus Global Health Fellowship curriculum is designed to achieve the following goals:

Fellows will broaden their pediatric clinical skills, acquire basic tools of research methodology, and develop leadership capabilities in Global Health. Attaining these goals through active clinical and program involvement in the community positions Pincus Global Health Fellows to become leaders in the field of pediatric global health. The following activities directly contribute to the Fellowship goals:

- Fellows develop strong clinical, diagnostic and treatment skills with an emphasis on infectious diseases and malnutrition in resource scarce settings. Fellows work collaboratively with clinicians in the partner country to care for children and adolescents in underserved areas. Their training will also include ongoing clinical mentorship by The Children's Hospital of Philadelphia faculty.
- Fellows will acquire advanced knowledge regarding healthcare delivery and public health problems facing children in resource poor countries through experiential learning. Their daily work enhances their understanding of the impact that strained economic, social and cultural conditions place upon underserved populations in developing nations. This understanding, coupled with academic study, allows the Fellows to develop a systematic approach to the challenges associated with healthcare in resource scarce settings.
- Fellows develop and implement educational activities and interventions in their work setting. This allows the Fellows to develop a basic foundation for creating and presenting educational materials designed to advance knowledge of basic pediatric health and preventive medicine at the professional, ancillary, and community levels. In each setting, Fellows are encouraged to actively engage with local pediatric providers to enhance the quantity and quality of professional education that occurs.
- Through graduate level academic training at the Center for Clinical Epidemiology and Biostatistics, Fellows learn clinical research skills relative to pediatric medicine, particularly in global public health. Fellows learn concepts of research design, use the principles of clinical epidemiology and evidence -based medicine, understand statistical analysis, and receive certification in the Responsible Conduct of Research. The Fellows complete at least one academic project and are encouraged to present the results of these projects at national or international meetings, or in peer-reviewed journals.

DETAILED DESCRIPTION OF LEARNING OPPORTUNITIES

Delivery of Clinical Care.

Fellows will provide direct clinical care to children (0-21 years) in the developing world under the supervision of a local clinicians and faculty for ten or more months each year of the fellowship. Fellows will have access to the full Global Health faculty at The Children's Hospital of Philadelphia for intermittent or ongoing mentorship. Additionally, Fellows can be mentored by other faculty at the University of Pennsylvania for specific projects.

In the Dominican Republic, Fellows will work with the Pediatric staff at the Centro de Salud in Consuelo in the Niños Primeros en Salud program. Clinical responsibilities will include ambulatory consults, preventive and urgent care visits as well as outreach visits working with several barrios in Consuelo. The Fellows will also provide general pediatric consultation to the staff clinicians and make appropriate referrals when necessary. Skills required for these activities are those obtained in a General Pediatrics residency.

The Dominican based Fellow will also work at the Columbia University International Family AIDS Program in nearby La Romana. In La Romana the Fellow will provide care to pediatric patients working under the supervision of a staff pediatrician. Fellows will master current diagnostic and therapeutic approaches to HIV-infected children, implementing these practices during routine preventive and urgent care ambulatory visits.

The Fellow performs direct clinical services under the supervision of Dr. Andrew Steenhoff and in collaboration with the pediatric services based at Princess Marina Hospital in Gaborone, Botswana. They will work with the University of Botswana School of Medicine Department of Paediatrics faculty and be active participants in the overall pediatric program in the Botswana-Penn Partnership. The fellows will provide clinical care to children (0-21 years) at the hospital along with staff pediatricians. The Fellows will provide general pediatric consultation to the staff clinicians and make appropriate referrals when necessary. Skills required for these activities are those obtained in a General Pediatrics residency.

In Africa, the Fellow provides pediatric clinical and educational expertise at Sparrow's Village in South Africa. At this site, Fellows have an opportunity to perform projects designed to improve the health and well being of orphaned or displaced children living with HIV/AIDS. Fellows will work under the direct supervision of the Sparrow's village administration and with the Africa program director.

Delivery of Knowledge

Fellows work with faculty advisors to develop, deliver and monitor the impact of pediatric health educational materials for professionals, communities, families and patients. Each Fellow will work with local healthcare professionals to collaboratively identify educational opportunities for professional colleagues. These activities may be in the form of case presentations, lectures, group discussions, morbidity and mortality seminars, curriculum development, online learning or journal article discussions. The Fellows will alternately lead some of the sessions or assist other professionals in presenting information in an educational setting.

Academic Opportunities

Fellows will be enrolled in a higher education program during their Fellowship to achieve their research and educational goals. Examples of academic coursework are the intensive summer courses offered through the University of Pennsylvania School of Medicine (Clinical Research Methods for Faculty, Residents, Fellows, and Research Staff Interested in Careers as Collaborative Researchers).

Faculty and Mentorship

The David N. Pincus Global Health Fellowship has a rich diversity of faculty members with expertise ranging from infectious disease, general pediatrics, emergency medicine and nutrition. Faculty members are associated with the University of Pennsylvania School of Medicine. Faculty members have an interest in global health activities and are available to support the Fellow's clinical, educational or research activities depending upon his or her needs and interests.

Each Fellow will choose a primary faculty mentor during the first three months of their Fellowship with the Fellowship Director. The Fellow and their faculty mentor will meet regularly throughout their Fellowship. Fellows will have quarterly face to face visits with the Fellowship Director, their primary mentor, or another faculty member to evaluate and give feedback on the Fellow's progress. Faculty mentors will maintain regular contact with the Fellow (via weekly telephone contact, skype, email communication, webex) and they will assist in identifying and mentoring through a suitable Scholarly Activity for the Fellow.

Scholarly Activity

Fellows are expected to complete an approved Scholarly Activity to achieve certification in their Global Health Fellowship. Faculty mentors will support the Fellow as they evaluate and determine the focus for their Fellowship and Scholarly Activity. Mentors will provide logistical support and academic guidance to the Fellow as the Scholarly Activity proceeds. Mentors will evaluate the Fellows' progress at regular intervals and provide feedback in order to assure a successful implementation of their Scholarly Activity. Examples from the current Fellow's projects include;

- Community health education model to increase rates of breastfeeding in poor neighborhoods. Training and facilitating the use of community health workers and targeted breastfeeding education and training. Analysis of the intervention will include impact on attitudes and exclusive breastfeeding rates in the community.
- Analysis of the impact of traditional medicine use in the face of hospital admission for acute diarrhea and dehydration.

Scholarly Activities will be presented at the annual Global Health Symposium at CHOP. Fellows will also be encouraged to present their Scholarly Activity at a national or international meeting through a poster or abstract, and/or publish in a national or international journal.

E-Portfolio.

One important tool to overcome the obvious geographic challenges of distance learning and academic work is the E-Portfolio. This is a web-based repository of all of the participant's work. The Fellows are expected to maintain an E-Portfolio where they will record not only their Scholarly Activity, but also a running bibliography of their reading, regular journaling reflecting on their clinical experiences, as well as a listing of their class work completed. The E-Portfolio will be reviewed quarterly by the faculty mentor to assure that the fellow is developing appropriate breadth and depth of learning, even when working abroad.

Evaluation.

Fellows will be evaluated annually by their faculty mentor. There will be monitoring and ongoing feedback by the Fellowship Director and the primary faculty mentor throughout the fellowship as outlined above. Fellows will also provide semi-annual evaluations of the fellowship.

PEDIATRIC COMPETENCIES

Competency 1: Patient Care

Provide family-centered patient care that is development- and age-appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

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| 1. Use a logical and appropriate clinical approach to the care of patients in a developing country setting, utilizing locally available resources , and applying principles of evidence-based decision-making and problem-solving. |
| 2. Understand the approach to pediatric patients with the following presentations in developing countries and initiate appropriate work-up and management:
HIV/AIDS
Diarrhea/dehydration
Respiratory Distress and Infections
Fever
Malnutrition (including Severe Acute Malnutrition) |
| 3. Provide culturally sensitive care and support to patients and their families. |
| 4. Participate in health promotion and injury/disease prevention activities in an international setting, utilizing local guidelines and practices. |

Competency 2: Medical Knowledge.

Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care and community health.

Epidemiology/Public Health:

1. Describe the epidemiology, trends, and major causes of **infant and child mortality and morbidity** in a developing country, and contrast to that in developed countries.
2. Recognize the **major underlying socioeconomic and political determinants of infant/child health**, and how these impact inequities in child survival and healthcare access in developing countries.
3. Describe **known effective interventions, including prevention and treatment**, for reducing under 5 mortality and morbidity (e.g., vitamin A supplementation, exclusive breastfeeding, etc.).
4. Describe the epidemiology of **neonatal mortality**, and compare/contrast common causes including perinatal asphyxia and neonatal infections to under-five mortality. Identify **prevention and treatment strategies** (e.g., skilled delivery at birth) specifically aimed at reducing neonatal morbidity and mortality.
5. Understand the impact of **environmental factors**, including safe water supply, sanitation, indoor air quality, vector control, industrial pollution, climate change and on child health in developing countries.
6. Demonstrate a basic understanding of **health indicators** and **epidemiologic tools and methods**, and how they may be used in settings with limited resources to monitor and evaluate the impact of public health interventions.
7. Understand the common childhood **injuries, including drowning, ingestions, burns and motor vehicle accidents that** contribute to childhood morbidity and disability in the developing world, and describe prevention strategies.

Malnutrition and Infectious Diseases:

8. Recognize signs and contrasting features of:

Underweight

Stunting (chronic malnutrition)

Acute Malnutrition – severe/moderate, complicated/uncomplicated

Micronutrient deficiencies (iron, vitamin A, iodine, zinc)

Low birth weight and associated maternal risk factors

Understand and compare the different **anthropometric measures** used to diagnose malnutrition, and principles of **prevention and management** of these different disorders.

9. Describe the **interaction between malnutrition/micronutrient deficiencies** and infectious diseases in infants and young children.

10. Become familiar with the presentation, diagnosis, management, and prevention strategies of the following specific diseases in resource-limited settings, based on local and international guidelines:

Malaria - uncomplicated and complicated/severe (e.g. Cerebral malaria)

Pneumonia/Lower Respiratory Infections

Diarrhea and dysentery

Measles

Neonatal infections including neonatal tetanus

HIV/AIDS and related infections/complications

Tuberculosis

Dengue Fever

11. List the **vaccine-preventable diseases** and the immunizations available in developing countries, and know the current international vaccine policies and recommendations.

12. Identify conditions that contribute to **morbidity and impaired cognitive development** in the developing world such as intestinal parasites, hearing loss, birth complications, anemia, infections (e.g. cerebral malaria), nutritional deficiencies, injuries, and environmental toxin exposures.

Specific Populations

14. Describe common health issues faced by **immigrant and refugee populations** in developing nations.

15. Describe health issues of children in the developing world affected by humanitarian crisis, including **refugees, internally displaced, and orphans**.

16. Understand the challenges faced by children living with **disabilities** in resource-poor settings, and describe prevention strategies and models of support.

Competency 3: Interpersonal Skills and Communication

Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families, their communities, and professional associates.

1. Appropriately **utilize interpreters and communicate effectively** with families who are non-English speaking.

2. **Communicate effectively and respectfully with physicians, nurses and other health professionals** in a global healthcare setting, in order to share knowledge and discuss management of patients.

3. Develop **effective strategies for teaching** health professionals, students, colleagues and other community members in settings with varying levels of knowledge or understanding of pediatric healthcare and medical English.

4. Demonstrate awareness of **effective communication approaches** for delivery of health care and educational materials in communities with **limited literacy and education**.

Competency 4: Practice-based Learning and Improvement

Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

1. Identify **standardized guidelines** (e.g., WHO/UNICEF/IMCI) **for diagnosis and treatment** of conditions common to developing countries and adapt them to the individual needs of specific communities and patients.

2. Know and/or access **appropriate medical resources** and apply them to the care of patients in the developing country setting.

3. Understand the principles of **evidence-based medicine** and apply them when reviewing recent

literature and considering the implications for impact on practice in resource limited settings.

4. **Work collaboratively and cross-culturally with health care team members** to assess, coordinate, and improve patient care practices and outcomes in settings with limited resources.

5. Apply and improve upon **physical examination skills and clinical diagnosis** in settings where diagnostic studies are limited.

6. Establish **individualized learning objectives** and focus for the Global Health Fellowship and strategies for completing scholarly activity.

7. Identify and utilize the **resources needed to prepare for Global Health clinical work** in a less developed country.

Competency 5: Professionalism.

Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity when caring for patients in a developed *or* developing country setting.

1. Demonstrate a commitment to **professional behavior** in cross cultural interactions with staff and professional colleagues and be respectful of differences in knowledge level and practices.

2. Give examples of **cultural differences** relevant to care of international populations and how **traditional medicine** and Western/scientific medicine can conflict with or complement one another.

3. Identify **common ethical dilemmas and challenges** confronted when working in a setting with limited resources or different cultural values.

4. Understand the **ethical standards and review processes for research** with human subjects carried out in developing countries.

5. **Recognize personal biases** in caring for patients of diverse populations and different backgrounds and how these biases may affect care and decision-making.

6. Understand and be sensitive to the profound **inequities in global health** and how individuals and health delivery systems can contribute to diminishing these disparities.

Competency 6: Systems-based Practice

Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

1. Compare and contrast different **health care delivery settings in the developing world**, including hospitals, clinics and the community centers, and the roles of different health care workers as they apply to patients in developing countries, such as the physician, nurse, community health worker, traditional birth attendant, etc.
2. Identify the **major governmental and non-governmental organizations** active in international child health, and give examples of initiatives and programs that impact child health (WHO, UNICEF, Global Fund, GAVI, etc.).
3. Describe international goals and strategies for improving child and maternal health (such as the **Millennium Development Goals**), and how these have impacted policy, funding and development of newborn, child and maternal health programs worldwide.
4. Develop understanding and awareness of the **health care workforce crisis in the developing world**, the factors that contribute to this, and strategies to address this problem.
5. Identify different **health care systems and fee structures between and within countries**, including the **public and private sectors**, and understand the impact of these systems on access to patient care and quality of care.
6. Demonstrate sensitivity to the **costs of medical care** in countries with limited resources and how these costs impact choice of diagnostic studies and treatment plans for individual patients.
7. Contrast the advantages and disadvantages of different approaches to implementing **health care interventions in developing countries**, disease focused vs. comprehensive, facility-based vs. community. Describe the **WHO Integrated Management of Childhood Illness (IMCI)** program as an example.
8. **Advocate** for families, such as recent immigrants to a developing country, who need assistance to deal with system complexities, such as lack of insurance, multiple appointments, transportation, or language barrier.
9. Understand the pediatrician's role in **advocating for health policy** efforts locally and internationally that can reduce inequities and improve health of children in developing countries.

Acknowledgement:

Competencies adapted from The AAP Section of International Child Health resident education subgroup, Kittredge, D., Baldwin, C. D., Bar-on, M. E., Beach, P. S., Trimm, R. F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website.

Reference and Reading List

The following reference and reading list has been selected by the University of Pennsylvania and Children's Hospital faculty for those who seek a general bibliography in global health. Readings are divided into two categories: a set of journal articles and a selection of books in print.

Website References

<http://www.unicef.org/sowc08/report/report.php>

The State of the World's Children 2008. Unicef.

<http://www.who.int/en/> The World Health Organization. International health guidelines, recommendations, statistics, etc.

<http://www.paho.org/> The Pan-American Health Organization. Health statistics, data, disease information for countries in the Americas.

<http://www.cdc.gov/> The Centers for Disease Control and Prevention. US department of Health and Human Services. Travel health recommendations, disease preventions, etc.

<http://www.domrep.org/home.htm> The Embassy of the Dominican Republic in the US. General information about the Dominican Republic.

<http://www.unicef.org/> UNICEF. The United Nations Children's Fund. International efforts and information about the state of international children's health.

<http://www.aap.org/sections/ich/default.htm> The AAP Section on International Child Health. AAP section information, resources for pediatricians, residents, and others interested in international children's health.

<http://medicinesforhumanity.org/> Medicines for Humanity. A partner organization supporting our outreach in the Dominican Republic. Programs supporting children in many countries.

http://medicinesforhumanity.org/dominican_republic.htm Background information on the partner programs in the Dominican Republic.

<http://www.careusa.org/> CARE USA. Tools, guidelines, best practice documents available for downloading for professional.

<http://www.bateyrelief.org/> Another organization working in the bateyes of the DR.

<http://www.uphs.upenn.edu/idd/bots.html> Penn Botswana Program

<http://botswana.usembassy.gov/> The US Embassy in Botswana in the US.

<http://www.botswanaembassy.org/> The Botswana embassy in the US. General information about the Dominican Republic.

<http://www.careusa.org/> CARE USA. Tools, guidelines, best practice documents available for downloading for professional.

<http://bayloraids.org/> Baylor AIDS International Initiative website. A wealth of information, case studies, etc.

Journal articles

General

- Benatar SR. Moral imagination: the missing component in global health. *PLoS Medicine* 2005, 2: 1207-1210.
- Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *The Lancet* 2003, 361: 2226-2234.
- Cohen J. The new world of global health. *Science* 2006, 311: 162-167.
- Gandy M. Deadly alliances: death, disease, and the global politics of public health. *PLoS Medicine* 2005, 2: 9-11.
- Garrett L. The challenge of global health, with comments from JD Sachs, P Farmer, R Bate, K Boateng, A de Waal. *Foreign Affairs*, January, 2007.
- Guerrant RL, Blackwood BL. Threats to global health and survival. *Clinical Infectious Diseases* 1999, 28: 966-986.
- Light, D.W. Is G8 putting profits before the world's poorest children? *Lancet* 2007, 370: 297-298.
- Madon T, et al. Implementation science. *Science* 2007, 318: 1728-1729.
- Mullan F. A conversation with Paul Farmer. *Health Affairs*, 2007, 26: 1062-1068.

Careers

- Keusch GT. Global health, personal action. *Clinical Infectious Diseases* 2004, 38: 879-880.
- Panosian C, Coates TJ. The new medical "missionaries" – grooming the next generation of global health workers. *New England J Medicine* 2006, 354: 1771-1773.

Economics, demography, social sciences

- Airhihenbuwa CO. On being comfortable with being uncomfortable: centering an Africanist vision in our gateway to global health. *Health, education and behavior* 2007, 34: 31-42.
- Cohen JE. Human population: the next half century. *Science* 2003, 302: 1172-1175.
- Marmot M. Social determinants of health inequalities. *Lancet* 2005, 365: 1099-1104.
- Murray CJL, et al. Mortality by cause for eight regions of the world. *Lancet* 1997, 349: 1269-1276.
- Sachs J. Can extreme poverty be eliminated? *Scientific American* 2005, 293: 56-65.
- Sachs JD, McArthur JW. The millennium project: a plan for meeting the millennium development goals. *Lancet* 2005, 365: 347-353.
- Sachs JD. A new global commitment to disease control in Africa. *Nature medicine* 2001, 7: 521-524.

Sachs J. Ending extreme poverty, improving the human condition. *JAMA* 2007, 298: 1849-1851.

Tomlin S. Harvest of hope. *Nature* 2006, 442: 22-25.

Wagstaff A. Poverty and health sector inequalities. *Bulletin World Health Organization* 2002, 80: 97-105.

Primary care and health systems

Gostin, L.O. Meeting the Survival Needs of the World's Least Healthy People. *Journal of the American Medical Association* 2007, 298(2): 225-228

Perry H, et al. Reducing under-five mortality through Hopital Albert Schweitzer's integrated system in Haiti. *Health policy and planning* 2006, 21: 217-230.

Starfield B, et al. Contribution of primary care to health systems and health. *Milbank Quarterly* 2005, 83: 457-502.

Environment

Ahmed MF, et al. Ensuring safe drinking water in Bangladesh. *Science* 2006, 314 1687-1688.

Bierbaum RM, et al. A two-pronged climate strategy. *Science* 2007, 316: 17.

Clasen T, et al. Interventions to improve water quality for preventing diarrhoea. *Brit Med J* 2007, 334: 782.

Cohen JE. Human population: the next half century. *Science* 2003, 302: 1172-1175.

Hopkin M. Climate takes aim. *Nature* 2007, 446: 706-707.

Hardin G. The tragedy of the commons. *Science* 1968, 162 1243-1248.

Fewtrell L, et al. Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis. *Lancet infectious diseases* 2005, 5: 42-52.

Nature. Water under pressure. 2008, 452: 253-310.

Medicines

Attaran A. How do patents and economic policies affect access to essential medicines in developing countries? *Health Affairs* 2004, 23: 155-166.

Chirac P, Torreele E. Global framework on essential R & D. *Lancet* 2006, 367: 1560-1561.

Quick JD. Essential medicines twenty-five years on: closing the access gap. *Health policy and planning* 2003 18: 1-3.

Reich MR. The global drug gap. *Science* 2000, 287: 1979-1981.

Funders

Birn A-E. Gates' grandest challenge: transcending technology as public health ideology. *Lancet* 2005, 366: 514-519.

Maciocco G, et al. From Alma Ata to the global fund: the history of international health policy. *Social Medicine* 2008, 3: 36-49.

McCoy, D. The World Bank's new health strategy: reason for alarm? *Lancet*, 2007, 369: 1499-1501.

Pauly, M.V., Zweifel, P., Scheffler, R.M., Preker, A.S., Bassett, M. Private Health Insurance in Developing Countries. *Health Affairs* 2006, 25(2): 369-379.

Ruger JP. The changing role of the World Bank in global health. *Am J Public Health* 2005, 95: 60-70.

Manpower

Chen L, et al. Human resources for health: overcoming the crisis. *Lancet* 2004, 364: 1984-1990.

Cooper RA. Physician migration: a challenge for America, a challenge for the world. *J Continuing education in the health professions* 2005, 25: 8-14.

Mullan F. The metrics of the physician brain drain. *New England J Medicine* 2005, 353: 1810-1818.

Technology

Daar AS, et al. Top ten biotechnologies for improving health in developing countries. *Nature genetics* 2002, 32: 229-232.

Juma C, Yee-Cheong L. Reinventing global health: the role of science, technology, and innovation. *Lancet* 2005, 365: 1105-1107.

Udin M, Guillemin M, Chirac P. Neglected tests for neglected diseases. *Nature* 2006, 441: 283-284.

Willyard C. Simpler tests for immune cells could transform AIDS care in Africa. *Nature medicine* 2007, 13: 1131.

Non-infectious diseases

Ameratunga S, et al. Road-traffic injuries: confronting disparities to address a global-health problem. *Lancet* 2006, 367: 1533.

Black R. Micronutrient deficiency – an underlying cause of morbidity and mortality. *Bulletin World Health Organization* 2003 81: 79.

Buse K, et al. Management of the policies of evidence-based sexual and reproductive health policy. *Lancet* 2006, 368: 2101.

Daar AS, et al. Grand challenges in chronic non-communicable diseases. *Nature* 2007, 450: 494-496.

Estupinan-Day S, Baez R, Horowitz H, Warpeha R, Sutherland B, Thames M. Salt fluoridation and dental caries in Jamaica. *Community dentistry and oral epidemiology* 2001, 29: 247-252.

Germain A. Reproductive rights and human rights. *Lancet* 2004, 363: 65-66.

Hofman K, et al. Addressing the growing burden of trauma and injury in low- and middle-income countries. *Am J Public Health* 2005, 95: 13-17.

Jinabhai CC, et al. Changing patterns of under- and over-nutrition in South African children – future risks of non-communicable diseases. *Annals of Tropical Paediatrics* 2005, 25: 3-15.

Khan KS, et al. WHO analysis of causes of maternal death: a systematic review. *Lancet* 2006 367: 1066.

Lando HA, et al. The landscape in global tobacco control research: a guide to gaining a foothold. *Am J Public Health* 2005, 95: 939-945.

Mascie-Taylor CGN, Karim E. The burden of chronic disease. *Science* 2003, 302: 1921-1922.

Monteiro CA, et al. Socioeconomic status and obesity in adult populations of developing countries: a review. *Bulletin WHO* 2004, 82: 940-946.

Nour NM. Health consequences of child marriage in Africa. *Emerging infectious diseases* 2006 12: 1644-1649.

Paluzzi P. Reproductive rights: a call to action. *J Midwifery & women's health* 2006, 51: 397.

Yach D, et al. Global chronic diseases. *Science* 2005, 307: 317.

Yach D, Hawkes C, Gould L, Hofman K. The global burden of chronic diseases: overcoming impediments to prevention and control. *J American Medical Association* 2004, 291: 2616-2622.

Infectious diseases

Aylward RB, Sutter RW, Heymann DL. OPV cessation – the final step to a “polio-free” world. *Science* 2005 310: 625-626.

Barnett T, Parkhurst J. HIV/AIDS: sex, abstinence, and behaviour change. *Lancet infectious diseases* 2005, 5: 590-593.

Bielik R, Madema S, Taloe A, et al. First five years of measles elimination in Southern Africa: 1996-2000. *The Lancet* 2002, 359: 1564-1568.

Chen X, Zhao F, Duanmu H, Wan L, Wang L, Du X, Chin DP. The DOTS strategy in China: results and lessons after 10 years. *Bulletin World Health Organization* 2002, 80: 430-436.

Cohen J. Prevention cocktails: combining tools to stop HIV's spread. *Science* 2005, 309: 1002-1005.

Coovadia HM, Hadingham J. HIV/AIDS: global trends, global funds and delivery bottlenecks. *Globalization and health* 2005, 1: 13-22.

Dowdle WR. The principles of disease elimination and eradication. *Morbidity and mortality weekly reports* 1999, 48: SU01: 2307.

Farmer P. The major infectious diseases in the world – to treat or not to treat. *New England J Medicine* 2001, 345: 208-210.

Ferguson NM, et al. Strategies for mitigating an influenza pandemic. *Nature* 2006, 442: 448.

Fewtrell L, Kaufmann RB, Kay D, Enanoria W, Haller L, Colford Jr JM. Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis. *Lancet infectious diseases* 2005, 5: 42-52.

Fontaine O, Newton C. A revolution in the management of diarrhea. *Bulletin World Health Organization* 2001, 79: 471-472.

Gibbs EPJ. Emerging zoonotic epidemics in the interconnected global community. *Veterinary record* 2007, 157: 673-679.

Greenwood BM, et al. Malaria. *Lancet* 2005, 365: 1487-1498.

Henderson DA. Lessons from the eradication campaigns. *Vaccine* 1999, S3: S53-S55.

Hoerauf A, Buttner DW, Adjei O, Pearlman E. Onchocerciasis. *British Medical Journal* 2003, 326: 207-210.

Hopkins DR, Ruiz-Tiben E, Diallo N, Withers PC, Maguire JH. Dracunculiasis eradication: and now, Sudan. *American J Tropical Medicine and Hygiene* 2002, 67: 415-422.

Hotez PJ, et al. Control of neglected tropical diseases. *New England J Medicine* 2007, 357: 1018-1027.

Kosek M, Bern C, Guerant RL. The global burden of diarrheal disease, as estimated from studies published between 1992 and 2000. *Bulletin World Health Organization* 2003, 81: 197-204.

McCaskey JW, Knirsch CA, Kumaresan JA, Cook JA. The possibility of eliminating blinding trachoma. *The Lancet* 2003, 3: 728-734.

New York Times, March and April, 2006. Five articles on global infectious diseases.

Roberts L. Polio eradication: is it time to give up? *Science* 2006, 312: 832-836.

Roberts L. Battling over bed nets. *Science* 2007, 318: 556-559.

Shann F, Steinhoff MC. Vaccines for children in rich and poor countries. *The Lancet* 1999, 354: SII: 7-11.

Stover J, et al. The global impact of scaling up HIV/AIDS prevention programs in low- and middle-income countries. *Science* 2006, 311: 1474-1476.

Taylor LH, et al. Risk factors for human disease emergence. *Phil Trans Royal Society* 2001, 356: 983-989.

Webster RG, Govorkova EA. H5N1 influenza – continuing evolution and spread. *New England J Medicine* 2006, 355: 2174.

Weiss R, McMichael AJ. Social and environmental risk factors in the emergence of infectious diseases. *Nature medicine* 2004, 10: S60-S70.

Wellings K, et al. Sexual behaviour in context: a global perspective. *Lancet* 2006, 368: 1706-1728.

Library in Global Health

The following books are available through online booksellers.

General treatises

Skolnik R. Essentials of global health. Jones and Bartlett Publishers, Sudbury, Massachusetts, 2008.

- [A brief and useful introductory text in global health.](#)

Garrett L. Betrayal of trust. The collapse of global public health. Hyperion, New York, 2000.

- [A long monograph on global health and its current status, by a journalist turned advocate.](#)

Levine R. Millions saved: proven successes in global health. Center for Global Development, Washington, DC, 2007.

- [Case studies of successful interventions in global health, an important message.](#)

Careers in global health

Evert J, et al, editor. Developing global health curricula at US medical schools. A collaboration of AMSA, GHEC, IFMSA-USA, R4WH, 2006 (pdf on Global Health Consortium website).

- [This student pamphlet summarizes a variety of programs in global health offered at selected medical schools in the USA, and gives a good sense of their diversity.](#)

Kidder T. Mountains beyond mountains: the quest of Dr. Paul Farmer, a man who would cure the world. Random House, New York, 2004.

- [The inspiring story of Paul Farmer, who has pioneered an outreach clinic in Haiti to deliver health care against overwhelming odds.](#)

McKenna M. Beating back the devil. On the front lines with the disease detectives of the Epidemic Intelligence Service. Free Press, New York, 2004.

- [Stories from the Centers for Disease Control, the public health service of the United States.](#)

O'Neil Edward Jr. A practical guide to global health service. American Medical Association, 2006.

- [The best current guide to employment opportunities in global health.](#)

Economics and social issues

Calderisi R. The trouble with Africa: why foreign aid isn't working. Palgrave Macmillan, New York, 2006.

- [An economist with a 30 year career in international development summarizes his views.](#)

Collier P. The bottom billion: why the poorest countries are failing and what can be done about it. Oxford University Press, NY, 2007

- [An economist formerly with the World Bank provides a provocative analysis.](#)

Fadiman, A. The Spirit Catches You and You Fall Down.

- [A great description of a true story outlining the clash between western medicine and family culture in pediatric medicine.](#)

Farmer, Paul. The Uses of Haiti.

- [Background of Haiti from the perspective of an American physician](#)

Jamison DT, et al. Priorities in health. World Bank Publications, Washington, DC, 2006.

- [A distillation of a larger tome which aims to identify priorities in international health interventions.](#)

Marmot M. The status syndrome: How social standing affects our health and longevity. Henry Holt, New York, 2004

- [An authoritative analysis of the societal determinants of health and disease.](#)

Prahalad CK. The fortune at the bottom of the pyramid. Eradicating poverty through profits. Wharton School Publishing and Pearson Education, Upper Saddle River, NJ, 2006.

- [A persuasive business school perspective with case studies.](#)

Sachs J. The end of poverty: economic possibilities for our time. Penguin Books, New York, 2005

- [A renowned economist and advocate makes his case for global health.](#)

Yunus M. Banker to the poor: micro lending and the battle against world poverty. Foreign Affairs, New York, 2003

- [A seminal work by an economist recognized by the 2006 Nobel Peace Prize.](#)

Wucker, M. Why the Cocks Fight: Dominicans, Haitians, and the Struggle for Hispaniola.

Health care systems & Practical Guides

Taylor-Ide D, Taylor CE. Just and lasting change: when communities own their futures. Johns Hopkins U Press, Baltimore, 2002

- [A discussion of community-based health care systems in low income countries by two advocates with vast practical experience.](#)

Werner, David, et al. Where There Is No Doctor: A Village Health Care Handbook.

- [A field guide for healthcare in remote/village settings where there is no access to professional medical or nursing care.](#)

Hilts, Philip. Rx for Survival, Why We Must Raise to the Global Health Challenge.

Coovadia, HM et al. Paediatrics and Child Health. Published by Oxford.

- [Highly recommended](#)

Pocket Book of Hospital Care for Children – Guidelines for the Management of Common Illnesses with Limited Resources. WHO

- <http://www.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codcch=0626>

Environmental studies

Gore A. An inconvenient truth: the planetary emergency of global warming and what we can do about it. Rodale Press, NY.

- [A politician turned environmental advocate provides data and proposes interventions.](#)

Kennedy D, et al, editors. State of the planet, 2006-2007. Island Press, Washington, 2007.

- [Reprints from Science magazine, probably the best primer on the impending ecological armageddon](#)

Infectious diseases

Abraham T. Twenty-first century plague. The story of SARS. Johns Hopkins University Press, Baltimore, 2005.

- [A journalist's account of the SARS outbreak, a modern day "microbe hunters" story.](#)

Desowitz RS. New Guinea tapeworms and Jewish grandmothers. WW Norton, New York, 1981.

- [Stories about international infectious diseases, mainly parasitic, by a tropical medicine physician with vast field experience.](#)

Pleasure

Alvarez, Julia. In the Time of the Butterflies

Danticat, Edwidge. The Farming of Bones.

Danticat, Edwidge. Breath, Eyes, Memory

McCall Smith, Alexander. The No.1 Ladies' Detective Agency

Acknowledgement: Gratitude and appreciation to Dr. Neal Nathanson, Associate Dean for Global Health and the Office of Global Health at the University of Pennsylvania School of Medicine who created the first draft of this reading and reference list, and which we have modified for the David N. Pincus Fellowship in Global Health at The Children's Hospital of Philadelphia.

ADMINISTRATIVE INFORMATION

BENEFITS

- Salary Compensation: Children's Hospital standard for academic fellows based on PGY status
- Benefits: Full benefits package standard for academic fellows at The Children's Hospital of Philadelphia; vacation, medical, dental, prescription, disability insurance, travel and evacuation insurance, 403B.
- Travel: Annual roundtrip ticket to global health site.
- Tuition: Reimbursement for required graduate coursework
- Conference attendance registration and travel benefit with approval of the Fellowship Director
- Full tuition for the coursework at the University of Pennsylvania School of Medicine Center for Clinical Epidemiology and Biostatistics

ELIGIBILITY

The Children's Hospital David N. Pincus Global Health Fellowship seeks motivated pediatricians to apply for a two year fellowship. Those who meet minimum requirements will be invited to interview with the faculty and staff in Philadelphia.

Applicants must have an M.D. or D.O. degree and must have completed a pediatric or med-peds residency at an accredited US residency program. Applicants must be Board Certified or Board Eligible. Applicants must hold at license to practice medicine in the State of Pennsylvania and will be appointed to the University of Pennsylvania School of Medicine in the Division of General Pediatrics. In order to obtain their faculty appointment, they will need to satisfy the requirements required by the Division of General Pediatrics and those of the Medical Staff Affairs office at the Children's Hospital of Philadelphia.

APPLICATION PROCESS (necessary documents to submit)

- Application: Candidates must submit a completed electronic application form (including ECFMG certificate number and visa information, if a foreign medical graduate). Applications are available on the Children's Hospital of Philadelphia Global Health website (www.chop.edu/globalhealth) and will only be accepted electronically. **Applications are due by September 30, 2010.**
- Letters of Recommendation: Candidates must provide: three letters of recommendation from professional colleagues familiar with the applicant's recent professional work. At least two of the letters must be from supervisors.
- Medical School Transcript
- Personal Statement: Candidates must submit a one-page summary highlighting their interests, purpose and career goals as they pertain to the fellowship. Discuss in the statement your preference (if any) between the Dominican Republic and Botswana. If you are interested in the serving in the Dominican Republic, please also describe your Spanish language skills.
- Medical License: must submit a current US license to practice medicine and must apply and become licensed in the state of Pennsylvania.

DOCUMENT SUBMISSION

Please submit all documents by **September 30th 2010** to:

Rodney Finalle, MD
Fellowship Director

By email: finalle@email.chop.edu
By fax: 267-426-4991
By regular mail:

(Suite #1300, 3535 Market)
The Children's Hospital of Philadelphia
34th and Civic Center Boulevard
Philadelphia, PA 19104

TIME TABLE

Applications will be available **July 15, 2010 and are due September 30, 2010**. Applicants are encouraged to apply as early as possible. Interviews will be scheduled for qualified applicants only after receipt and review of all application documents. Invited applicants must arrange for an in person interview in Philadelphia unless otherwise approved by the Fellowship administration.

Applicants will be chosen on a rolling admission process. The two-year Fellowship commences on July 1, 2011 at which time the Fellow must be available to begin class work and orientation in Philadelphia with planned departure for Global Health partner site in early August 2011.

For additional information, interested applicants should contact the Fellowship Director Rodney Finalle, M.D. (finalle@email.chop.edu) (267-426-9665)

The Children's Hospital of Philadelphia and the University of Pennsylvania are equal opportunity affirmative action employers. Women and minorities are encouraged to apply.

 **The Children's Hospital of Philadelphia**

A pediatric healthcare network
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