

Division Photo



Division Data Summary

Research and Training Details

Number of Faculty	3
Number of Support Personnel	8
Direct Annual Grant Support	\$1,919,467
Direct Annual Industry Support	\$257,000
Peer Reviewed Publications	11

Significant Publications

Zaman K, Roy E, Arifeen SE, Rahman M, Raqib R, Wilson E, Omer SB, Shahid NS, Breiman RF, Steinhoff MC. (2008). Effectiveness of maternal influenza immunization in mothers and infants. *N Engl J Med.* 359:1555-64.

First randomized trial of immunization of pregnant women with influenza vaccine. The data showed that both mother and infant are protected.

Division Collaboration

Collaboration with Infectious Diseases

Collaborating Faculty: Mark Steinhoff; David Bernstein

Design of influenza vaccine clinical trials

Collaboration with Infectious Diseases

Collaborating Faculty: Mark Steinhoff; Beverly Connelly

Collaboration with Biostatistics & Epidemiology

Collaborating Faculty: Adekunle Dawodu; Ardythe Morrow

Research into vitamin D status of breastfeeding mothers

Faculty Members

Mark Steinhoff, MD, Professor ; *Division Director, Global Child Health*

Steven Black, MD, Adjunct Professor

Adekunle Dawodu, MD, Professor ; *Director, International Patient Care and Education*

Significant Accomplishments

Vaccine Research

The Global Health Center continues to be active in the field of vaccine research. Additional findings from Dr. Mark Steinhoff's Mother'sGift Study show that receipt of influenza vaccine in pregnancy of mothers led to an increased birth weight in the infants. This suggests that influenza may be a more important factor in pregnancy than previously realized. The finding that use of flu vaccine throughout a 12 month period was beneficial for most of the maternal recipients was reported in Bangkok. A new finding that the pneumococcal vaccine given to Bangladesh infants results in greater weight and height gain in those infants compared to a control group is another important unique Mother'sGift finding.

Dr. Steinhoff presented this new information arising out of the Mother'sGift vaccine trial in Bangladesh, at the National Foundation for Infectious Disease Annual Meeting, the Pediatric Academic Society Meeting, and the Bangkok Meeting of Respiratory Virology.

In December 2008, Dr. Steinhoff was awarded a substantial grant from the Bill & Melinda Gates Foundation to carry out a large field trial of maternal immunization with influenza vaccine in Bhaktapur, Nepal. Field work has been initiated and we expect to begin immunizing pregnant women in 2010.

Dr. Steven Black and Dr. Steinhoff, with colleagues in Suzhou, China have analyzed hospital admissions with influenza virus, and showed influenza is an important cause of hospital admission, and that influenza is active all year round in parts of China. This preliminary data will be presented to the Centers for Disease Control and Prevention in China as a first step in a series of studies including an influenza vaccination field trial.

Vitamin D Research

Now in the second year of Dr. Adekunle Dawodu's Thrasher funded study entitled "A randomized controlled trial of prenatal vitamin D supplementation in the United Arab Emirates." 100 of the expected 180 patients for the study of high-dose vitamin D supplementation during pregnancy have been enrolled. So far, the findings indicate that 98% of the subjects with available vitamin D results were vitamin D deficient on enrollment. This extraordinarily high prevalence of vitamin D deficiency during pregnancy could have significant adverse effect on the mother and the growing fetus. The study is on-going without reportable adverse events to determine the efficacy of high dose vitamin D to prevent vitamin D deficiency in mothers and their newborn infants in this high risk population.

In April 2009, the Qatar National Research Fund awarded Dr. Dawodu a research grant under the National Priorities Research Program (NPRP). NPRP funds original, competitively selected research in natural sciences, engineering and technology, medical and health sciences, agricultural sciences, social sciences and humanities. This project, to begin in Fall 2009, will investigate the role of low- and high- dose Vitamin D supplementation to prevent childhood Vitamin D deficiency in Qatar. This is a two-year project working with Hamad Medical Corporation in Qatar.

Global Education

The Bang Bao Educational program, now in its 5th year, was born of a shared vision between CCHMC and the Pampers brand of The Procter & Gamble Company (P&G) to promote the healthy development of infants and children in China.

To-date, Bang Bao has provided 15 scholarships for outstanding, young Chinese doctors from leading hospitals. Our conservative estimates are that each Bang Bao scholar directly impacts the health and well being of no less than 1,700 children annually and, indirectly, via their teaching and other "ripple" effects within their home hospitals of an additional 18,000 lives. Thus, we estimate an ongoing benefit of Bang Bao on no less than 300,000 Chinese children, annually.

Such is the multiplicative power of education as a means to improve the lives of children around the world. Such also is

the mission of Bang Bao: to harness the power of education and international collaboration to help improve the standards of care for children in China. In this aim, Bang Bao serves not as a closed end process, but rather, as a mechanism that triggers a self-sustaining, virtuous cycle of medical cooperation and advancement which converges on the common objective to give children a better opportunity to live a healthy and productive life.

In June 2009, CCHMC's Global Health Center and P&G agreed to expand this program into other areas of the world. Over the next year, four promising health investigators and physicians from women's and children's hospitals in Egypt, Morocco, Pakistan, and/or Nigeria will come to CCHMC to engage in clinical, academic, and research interactions with senior Faculty.

Division Publications

1. Sundberg JP, Silva KA, Zhang W, Sundberg BA, Edwards K, King LE, Davis RL, Black S. [Recombinant human hepatitis B vaccine initiating alopecia areata: testing the hypothesis using the C3H/HeJ mouse model](#). *Vet Dermatol*. 2009; 20: 99-104.
2. Harris K, Baggs J, Davis RL, Black S, Jackson LA, Mullooly JP, Chapman LE. [Influenza vaccination coverage among adult solid organ transplant recipients at three health maintenance organizations, 1995-2005](#). *Vaccine*. 2009; 27: 2335-41.
3. Saadi HF, Dawodu A, Afandi B, Zayed R, Benedict S, Nagelkerke N, Hollis BW. [Effect of combined maternal and infant vitamin D supplementation on vitamin D status of exclusively breastfed infants](#). *Matern Child Nutr*. 2009; 5: 25-32.
4. Grant GB, Campbell H, Dowell SF, Graham SM, Klugman KP, Mulholland EK, Steinhoff M, Weber MW, Qazi S. [Recommendations for treatment of childhood non-severe pneumonia](#). *Lancet Infect Dis*. 2009; 9: 185-96.
5. Batuwanthudawe R, Karunarathne K, Dassanayake M, de Silva S, Lalitha MK, Thomas K, Steinhoff M, Abeysinghe N. [Surveillance of invasive pneumococcal disease in Colombo, Sri Lanka](#). *Clin Infect Dis*. 2009; 48 Suppl 2: S136-40.
6. Shah AS, Knoll MD, Sharma PR, Moisi JC, Kulkarni P, Lalitha MK, Steinhoff M, Thomas K. [Invasive pneumococcal disease in Kanti Children's Hospital, Nepal, as observed by the South Asian Pneumococcal Alliance network](#). *Clin Infect Dis*. 2009; 48 Suppl 2: S123-8.
7. Minz S, Balraj V, Lalitha MK, Murali N, Cherian T, Manoharan G, Kadirvan S, Joseph A, Steinhoff MC. [Incidence of Haemophilus influenzae type b meningitis in India](#). *Indian J Med Res*. 2008; 128: 57-64.
8. Dawodu A, Bener A, Koutouby GA, Varady E, Abdulrazzaq Y. [Size at birth in a rapidly developing economy: intrauterine growth pattern of UAE infants](#). *Ann Hum Biol*. 2008; 35: 615-23.
9. Omer SB, Sutanto A, Sarwo H, Linehan M, Djelantik IG, Mercer D, Moniaga V, Moulton LH, Widjaya A, Muljati P, Gessner BD, Steinhoff MC. [Climatic, temporal, and geographic characteristics of respiratory syncytial virus disease in a tropical island population](#). *Epidemiol Infect*. 2008; 136: 1319-27.
10. Rimoin AW, Walker CL, Chitale RA, Hamza HS, Vince A, Gardovska D, da Cunha AL, Qazi S, Steinhoff MC. [Variation in clinical presentation of childhood group A streptococcal pharyngitis in four countries](#). *J Trop Pediatr*. 2008; 54: 308-12.
11. Zaman K, Roy E, Arifeen SE, Rahman M, Raqib R, Wilson E, Omer SB, Shahid NS, Breiman RF, Steinhoff MC. [Effectiveness of maternal influenza immunization in mothers and infants](#). *N Engl J Med*. 2008; 359: 1555-64.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

DAWODU, A

High Prevalence of Ricketts and Subclinical Maternal and Childhood Vitamin D Deficiency

Thrasher Research Fund

01/01/08 - 12/31/10

\$117,600 / \$362,284

STEINHOFF, M

Project Subagreement #GAT.1296-07373-SRV

PATH Vaccine Solutions

01/01/07 - 12/31/09

\$43,766 / \$127,885

Mother's Gift 241 Field Trial

Bill & Melinda Gates Foundation

50274 12/01/08 - 11/30/13 \$989,708 / \$6,271,880

Gates Maternal and Infant immunization, Dhaka, Bangladesh

Bill & Melinda Gates Foundation

26748 04/01/09 - 09/30/09 \$617,288 / \$617,288

VIDWAN, N

Fogarty International Clinical Research Fellowship Award

National Institutes of Health (Vanderbilt University)

R24 TW 007988 10/01/08 - 09/30/09 \$151,105 / \$151,105

Current Year Direct \$1,919,467

Industry Contracts

DAWODU, A

Procter & Gamble China Scholars Program \$ 257,000

Current Year Direct Receipts \$257,000

**Total \$
2,433,467**
