

The Respiratory Diseases Branch (RDB) Get Smart: Know When Antibiotics Work campaign continues to educate pharmacists, healthcare providers and the general public about the importance of appropriate antibiotic use and the growing threat of antibiotic resistance.

One of many ways the Get Smart campaign increases awareness is by working with state-based appropriate antibiotic use campaigns and with both non- and for-profit partners during the annual observance, Get Smart About Antibiotics Week (GSW).

The take home messages of GSW 2009 were that antibiotics will not cure viral infections and pharmacists can play an important role in educating patients about appropriate antibiotic use (including prescription adherence, adverse drug events and symptomatic therapy). National and local media outlets provided news coverage on the importance of appropriate antibiotic use based on a GSW press release.

The campaign's partners distributed messages, and there was a strong internet presence, including Facebook and Twitter. NCIRD collaborated with NCHM to produce a new CDC-TV video ("Snort. Sniffle. Sneeze. No Antibiotics Please!"). A partnership with the CDC Federal Credit Union resulted in Atlanta branches distributing educational materials to their members and holding a raffle with Get Smart promotional items.

This year, the Get Smart campaign hosted its first Retail Pharmacy Summit for representatives from national retail pharmacy chains, non-profit and advocacy organizations, and CDC staff. Attendees included: Rite-Aid, Kroger, Giant Eagle, Giant/Stop and Shop, Medicine Shoppe International, National Association of Chain Drug Stores, IMS Health®, Alliance for the Prudent Use of Antibiotics, as well as universities and other organizations.

The one-day meeting featured presentations on the latest science on antibiotic use and resistance, discussions on the important role pharmacists and retail pharmacies can play in educating patients, and specific and successful strategies that can enhance social responsibility and profitability through partnerships with the Get Smart campaign.

At the end of the day, attendees pledged to "Get Smart" and share information from the Retail Pharmacy Summit within their companies and explore future opportunities to partner with the campaign. Attendees were excited that CDC had provided this forum for meeting and exchanging ideas with others working on the campaign. The Get Smart campaign is currently focusing its efforts



on implementing strategies to continue to leverage partnerships – including those with retail pharmacies – and exploring ways to gain greater exposure for Get Smart messages.

Photo: Laura Conklin in Nairobi, Kenya - where she took her winning photo for the 2009 CDC Connects Public Health in Action Photo Contest.



atrocities against members of the Kikuyu tribe that lived there were haunting as we walked among the houses on our way to the local clinic. We had to wear tall rubber boots because of the mud, and must have stood out quite a bit. At one point, a little boy came out of his house to see what we were doing. I'm just an amateur photographer, but I liked the angle of the shot because you could really get a sense of what life in Kibera is like, and the contrast with the apartment buildings in the background."

2009 Epi-AIDS

- Increased incidence of *Haemophilus influenzae* type b, Minnesota Feb 2009
- School-based cluster of suspected pertussis cases, Georgia Feb 2009
- Streptococcus pneumoniae* meningitis, Missouri Feb 2009
- Legionnaires' disease on a cruise ship, New York July 2009
- Increase of pertussis in La Plata County, Colorado Aug 2009
- Legionnaires' disease in an apartment complex for seniors, Baltimore Oct 2009
- Increase in invasive pneumococcal disease, Denver Nov 2009
- Pertussis increase in two counties, Florida Nov 2009
- Legionnaires' disease on a cruise ship, Miami Nov 2009
- Legionnaires' disease cluster on a cruise ship, Los Angeles Nov 2009

Awards

Matthew Moore has been awarded a PHS Outstanding Service Medal in recognition of outstanding leadership in the prevention of pneumococcal disease.

Ryan Novak has been awarded the Commendation Medal for exemplary performance fostering international collaborations and building vaccine-preventable disease surveillance capacity in developing countries. He was also awarded the Hazardous Duty Award for efforts to reduce vaccine-preventable diseases during assignments in Pakistan collaborating with the Pakistan National Institutes of Health staff and the Pakistan Field Epidemiology and Laboratory Training Program.

The **Unexplained Respiratory Disease Outbreaks Website** was awarded the Unit Commendation for development and implementation of a website housing clinical, epidemiologic, laboratory and communication tools for use by public health partners to investigate respiratory outbreaks of unknown etiology.

Laura Conklin shared first place in the 2009 CDC Connects Public Health in Action Photo Contest. Her award was in the International People category for her photo of a young child in a slum outside Nairobi, Kenya. About the photo, Laura said, "The post-election violence had recently ended, but the stories of the

ACIP: Updates from October 21-22, 2009 Meeting

DBD participated in the meeting during the following sessions: (1) Meningococcal Vaccines: Information & Discussion - Epidemiology of meningococcal disease in infants and young children - Jessica MacNeil; Considerations in the use of meningococcal conjugate vaccines in infants - Amanda Cohn; and (2) 13-Valent Pneumococcal Conjugate Vaccine (PCV13): Information & Discussion - PCV13: draft recommendations and immunization schedules - Pekka Nuorti.

Hib Shortage Resolved – New Vaccine Comes to Market

On August 19, 2009 FDA licensed Hiberix, a Hib conjugate vaccine. Hiberix is licensed for use as the booster dose of the Hib vaccine series for children 15 months through 4 years of age who have previously received the primary series of Hib vaccination. With an increased vaccine supply, children with a deferred booster dose due to the shortage can now receive it. Vaccination providers are recommended to begin recall of children in need of the booster dose when feasible and monovalent Hib vaccine supply in the office is adequate.

DBD

BULLETIN

regards from
Rana...

Dear colleagues,

As I was getting ready to write this note, I paused a bit to reflect on the division's work over the last 12 months. What a busy and extremely productive year this had been! Our division staff just finished a major clinical trial for anthrax vaccine that will make this vaccine easier to administer and impact millions of military personnel. We have investigated at least ten Epi-AIDS and assisted in even more outbreaks, covering a spectrum of diseases including multiple pertussis and Legionnaires' disease ones, but also group A streptococcal, meningococcal and pneumococcal diseases. We have attended numerous meetings and published countless papers to ensure the knowledge we gain from our work is shared and quickly communicated.

With regard to vaccine-preventable diseases in the U.S., we dealt with a Hib vaccine shortage and worked closely with ACIP to help them make policies that will improve the control of pertussis, pneumococcal, meningococcal, and Hib diseases. Globally, we worked closely with GID, WHO and our various partners internally and externally, to accelerate the introduction of Hib and pneumococcal vaccines and significantly reduce the burden of pneumonia, which remains a major killer of children in developing countries. We also helped prepare countries in the African meningitis belt for the introduction of meningococcal group A vaccine and initiated a study with PAHO to improve pertussis control in South America. In addition, our staff have helped support a variety of surveillance and evaluation studies worldwide that are crucial to strengthening the epidemiological and laboratory capacity of countries to help them better control diseases. We have continued to be actively involved in vaccine development, including some promising new ones such as pneumococcal protein vaccines.

We have contributed to the success of important health observances such as World Meningitis Day and World Pneumonia Day, which were both first time events, along with the second annual Get Smart About Antibiotics Week, some of which you'll read about in this issue. When the H1N1 pandemic started in April, DBD staff were among



MVPDB Laboratories Step Up to the H1N1 Challenge

Beginning in June, the Division of Bacterial Diseases (DBD) was requested to provide assistance for a wide range of laboratory activities to support CDC's response to the emerging H1N1 influenza pandemic. Many laboratory and epidemiology staff willingly gave their time and expertise to assist in this high profile activity – one of CDC's highest current priorities.

Fresh from their successful contributions to the CDC Anthrax Vaccine Research Program (AVRP), the DBD Microbial Pathogenesis and Immune Response (MPIR) Laboratory – one part of the Meningitis and Vaccine Preventable Diseases Branch (MVPDB) Vaccinology Laboratories group – joined the H1N1 response effort.

The Influenza Division's Immunology and Pathogenesis Branch (IPB), Pandemic Preparedness Team (PP Team) faced the enormous task of testing and analyzing thousands of pandemic H1N1 serum samples. The MPIR Lab, fuelled by this exciting challenge, integrated forces with the PP Team, and provided highly skilled critical staff, equipment, expertise and laboratory surge capacity to handle both the immediate needs, and the anticipated surge of specimen testing.

The MPIR Lab collaborated directly with the PP Team to attack three high priority goals: to collate, organize and prepare for testing the backlog of serum samples received at CDC; to use existing expertise with STARLIMS – a laboratory information management system – for sample management and data storage; and to establish a

the first to assist in the response and have continued providing support. As part of the Recovery Act, huge efforts were invested by our staff to initiate various studies, contributing to the nation's economic recovery. I can go on and on, but these are just some of DBD's recent highlights. As 2009 draws to an end, we should all be very proud of what we have accomplished this year, and recognize that our work has not only increased the public health knowledge, but has also made the U.S. and the world better prepared to prevent and control diseases and overall healthier. I wish you all happy and restful holidays!

Rana

this issue

MVPDB Laboratories Step Up to H1N1 P.1

The First World Pneumonia Day P.2

Vaccine Effectiveness Analysis for MCV4 P.3

Celebrating Get Smart Week 2009 P.4

Photo: Members of MVPDB's Microbial Pathogenesis and Immune Response Lab and Immunology Labs group, along with researchers from the Influenza Division and NICPHI. Not pictured are members of the Microbial Pathogenesis and Immune Response and Immunology group (VL) (Specimen Management team and the QA team).

sustainable capacity for high throughput, high efficiency testing and results reporting. The MPIR Lab seized this opportunity to assist and integrate to the fullest extent possible – and for the highest public health impact – their key skills and expertise. A highly effective collaboration with the PP Team emerged.

The MPIR Lab capabilities were developed for the CDC AVRP and honed in the evaluation of anthrax vaccines, therapeutics and in clinical diagnostics. The capabilities derive from a cadre of highly trained laboratory team members with subject matter expertise in five key areas: high volume/high throughput specimen handling, quality controlled high volume serological testing, large volume data analysis and reporting, relational database management (STARLIMS), and an overarching quality management system (QMS). While it took the MPIR Lab several years to design, build and implement these key success factors for anthrax, it has taken only 4 months in collaboration with the PP Team to redirect, develop and implement most aspects of this sustainable system to support the H1N1 surge activity.

The MPIR Lab's specimen management team, NCIRD volunteers and new IPB recruits provided the capacity and discipline to organize and handle large numbers of specimens quickly and accurately. The MPIR Lab data analysis team created standardized, high throughput SAS® based macro programs for rapid collation, analysis, interpretation and reporting of assay results. The MPIR Lab quality assurance (QA) team continues to work closely with the Influenza Division's QA Unit to develop a QMS that not only is customized for the PP Team but also aligns with the NCIRD vision of a center-wide QMS. Two experienced laboratorians from the MPIR Lab and one from the MVPDB Immunology Labs received assay-specific training and joined forces with the PP Team to carry out the enormous task of running the assays to detect anti-H1N1 antibodies.

In a 'mentoring' capacity for STARLIMS implementation, the MPIR Lab assisted the PP Team by providing the STARLIMS MPIR unit as an immediate and efficient tool to accession all H1N1 serology samples. The MPIR Lab and PP Teams are working with the STARLIMS implementation

(Continued on page 3...)

PUBLICATIONS (Just a sampling)

CDC. Bacterial coinfections in lung tissue specimens from fatal cases of 2009 pandemic influenza A (H1N1) United States, May--August 2009. MMWR 2009;58(Early Release);1-4.

CDC. Notice to Readers: Licensure of a *Haemophilus influenzae* type b (Hib) vaccine (Hiberix) and updated recommendations for use of Hib vaccine. MMWR 2009;58(36);1008-9.

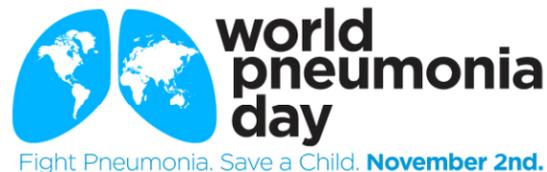
Cho B, Clark TA, Messonnier NE, Ortega-Sanchez IR, Weintraub E, Messonnier ML. MCV vaccination in the presence of vaccine-associated Guillain-Barré syndrome risk: a decision analysis approach. Vaccine. Available online 30 October 2009.

Cutland CL, Madhi SA, Zell ER, Kuwanda L, Laque M, Groome M, Gorwitz R, Thigpen MC, Patel R, Velaphi SC, Adrian P, Klugman K, Schuchat A, Schrag SJ, and the PoPS Trial Team. Chlorhexidine maternal-vaginal and neonate body wipes in sepsis and vertical transmission of pathogenic bacteria in South Africa: a randomised, controlled trial. Lancet. Available online 19 October 2009.

Steer AC, Law I, Matatolu LR, Beall B, Carapetis JR. Global *emm* type distribution of group A streptococci: systematic review and implications for vaccine development. Lancet Infect Dis. 2009;9:611-16.

Whitney AM, Coulson GB, von Gottberg A, Block C, Keller N, Mayer LW, Messonnier NE, Klugman KP. Genotypic comparison of invasive *Neisseria meningitidis* serogroup Y isolates from the United States, South Africa, and Israel, isolated from 1999 to 2002. J Clin Microbiol. 2009;47:2787-93.

November 2nd Marked the First World Pneumonia Day



Pneumonia is a leading killer of both children and adults around the globe. Perhaps until November 2nd, 2009, few knew that pneumonia kills approximately 2 million children under the age of five years worldwide each year.

To establish November 2nd as a worldwide observance, a diverse group of global health, humanitarian, business and industry, advocacy, faith-based and community organizations worked as a coalition to increase worldwide awareness about the global burden of pneumonia and prevention and treatment options, with CDC and UNICEF providing technical assistance. Activities such as forums, rallies and sporting events took place around the globe to commemorate the day, including the first Global Pneumonia Summit held in New York City.

Gathering at the Asia Society in New York City on November 2nd to begin to change the way the world responds to a leading killer of children – pneumonia – were a host of influential persons, including: Professor Jeffrey Sachs, Director of The Earth Institute at Columbia University and Special Advisor to United Nations Secretary-General, Beninirose singer-songwriter and UNICEF Goodwill Ambassador Angelique Kidjo, and ABC News' Senior Health and Medical Editor Dr. Rich Besser, along with more than 150 global health experts, philanthropists, faith-based leaders, corporate representatives and child advocates.

Twenty internationally recognized speakers addressed topics ranging from the importance of clean water and vaccines to maternal and child health interventions to prevent and control pneumonia. It will take many different approaches to reduce the burden of pneumonia, and the Summit served as a platform for the release of the new World Health Organization/UNICEF led Global Action Plan for the Prevention and Control of Pneumonia (GAPP) (www.who.int/bulletin/volumes/86/5/08-053348/en), which outlines a six-year plan for the worldwide scale-up of a comprehensive set of interventions to control the disease. DBD's director, Rana Hajjeh, was among the speakers and Marsha Houston, DBD's policy officer, was the chair of the international workgroup responsible for organizing the Summit.

Nearly everyone attending the Summit wore blue jeans as part of a global campaign to raise awareness about child pneumonia deaths. Blue is the official color for the fight against pneumonia, signifying a child's struggle to breathe when battling the disease. Earlier in the day, World Pneumonia Day organizers braved the 5:00am New York City chill to land a prime front row spot in the street audience at the NBC Today Show to promote the day and the significance of people wearing blue jeans.

For several months leading up to World Pneumonia Day, Dr. Hajjeh guided DBD and RDB staffers Dr. Adam Cohen, Marsha

Houston, Jennifer Loo and Alison Patti, with assistance from Kristin Pope, NCIRD's associate director for policy, in collaborating with the center's subject matter experts to develop a variety of products to increase awareness about pneumonia, including a web feature on the CDC homepage, a Health-e-Card, an MMWR Announcement, podcasts, and a video screening and reception at CDC.

At the CDC event, NCIRD and DBD leadership provided opening remarks highlighting the burden of pneumonia and CDC's ongoing commitment to address this disease. CDC staff and students from several Atlanta-area universities attended the event.

CDC is actively engaged in the detection, prevention and treatment of pneumonia globally. An array of research and surveillance activities and laboratory training programs to help build capacity in developing countries, global health policy, communication and public health education are underway. The agency is working with countries to help them achieve the United Nations Millennium Development Goal 4, which seeks to reduce mortality by two-thirds by 2015 among children less than five years of age. The November 2nd CDC Connects featured an article profiling a number of CDC's pneumonia activities. Find more information and resources at www.WorldPneumoniaDay.org and www.cdc.gov/ncird/dbd.html.



Photo: CDC's Jennifer Loo, Dr. Larry Anderson (DVD), Marsha Houston and Dr. Rana Hajjeh are pictured here in blue jeans celebrating the success of the first Global Pneumonia Summit with Dr. Mathruam Santosham from Johns Hopkins Bloomberg School of Public Health — the lead organization for World Pneumonia Day.

STAFF NEWS!

- Congratulations to MVPDB's Douglas Avery, who is now an American Society for Quality (ASQ)-Certified Quality Auditor. As such, he has reached a significant level of professional recognition, indicating a proficiency in and a comprehension of quality auditing tools and techniques. To learn more about ASQ's Certified Quality Auditor program, visit www.asq.org/certification/quality-auditor.
- Stephanie Schwartz is now serving in the newly-created role as DBD's Global Laboratory Coordinator. Her primary role at this stage is coordination of laboratory activities for the WHO surveillance networks for vaccine-preventable bacterial diseases. DBD partners with WHO to provide technical assistance for these networks, and has recently signed a contract with WHO to serve as a global reference laboratory for surveillance of these diseases.

Vaccine Effectiveness Analysis for MCV4

Meningococcal disease is a very serious bacterial infection, which progresses rapidly, and is the leading cause of bacterial meningitis in adolescents. The Advisory Committee on Immunization Practices (ACIP) currently recommends routine vaccination of adolescents 11-18 years of age at the earliest opportunity. Vaccination is the best way to prevent meningococcal infections and meningococcal conjugate vaccine (MCV4) works well and protects most people who receive it.

Rates of meningococcal disease are at a historic low in the United States. However, the goal of the meningococcal vaccination program remains to prevent as many cases of meningococcal disease as is possible – because of the sudden onset and rapid progression of meningococcal disease and the continued high case-fatality ratio. A better understanding of the properties of meningococcal conjugate vaccines and the implications of programmatic decisions are needed.

MCV4 was licensed based on safety and immunogenicity data, but there was no clinical effectiveness data collected pre-licensure. CDC typically conducts vaccine effectiveness (VE) studies after licensure of new vaccines when no clinical efficacy studies are done prior to licensure.

The Meningitis and Vaccine Preventable Diseases Branch (MVPDB) is used in the U.S. Supported with American Recovery & Reinvestment Act funds, this study is being conducted in 27 states and is expected to continue through 2011. Enrollment in this case-control study has been slow due to the current low incidence of meningococcal disease. In light of this low incidence, MVPDB conducted a vaccine effectiveness analysis using a simulation approach as a way to get an early estimate of MCV4 effectiveness while the case-control study continues. Results of the simulation approach were presented at the 2009 Infectious Diseases Society of America Annual Meeting.

The MCV4 VE simulation analysis suggests that the vaccine is 80-90% effective against serogroups C and Y meningococcal disease in adolescents. This is similar to the vaccine efficacy reported for polysaccharide vaccine against serogroup C disease. This estimate of MCV4 effectiveness against serogroups C and Y is similar to what might be expected from the immunogenicity data from the clinical trials for the vaccine, but it is lower than other meningococcal conjugate vaccines used in other countries. Only serogroups C and Y were looked at because there is very little serogroup W-135 disease and essentially no serogroup A disease in the U.S. These serogroups are important for persons traveling to other parts of the world where W-135 or A may be endemic. Serogroup Y is not included in conjugate vaccines that are used in other countries.

In addition to conducting a case-control study to determine VE for MCV4 against serogroups C and Y meningococcal disease, MVPDB is developing studies to follow-up with persons who develop meningococcal disease after being vaccinated with meningococcal vaccines. With these studies, researchers hope to understand why some people are not protected after vaccination, and to determine how long protection with MCV4 lasts.

(Continued from page 1...)

team to assure a smooth transition into a PP specific STARLIMS unit.

In approximately 4 months since the start of the MPIR Lab/PP Team collaboration more than 3,100 specimens have been accessioned into STARLIMS, which translates into over 20,000 physical aliquots encompassing 17 separate serological studies. During this same time period, the laboratory team has completed initial testing on approximately 33% of these specimens; a staggering accomplishment of more than 11,000 test samples tested by 2 different serologic assays for 8 of the 17 studies currently in the STARLIMS system.

Eddie Ades, DBD's associate director for laboratory science, commented that, "The collaboration across divisions to support CDC's response to the H1N1 pandemic demonstrates CDC's expertise and dedication in the face of enormous public health challenges and exemplifies what can be achieved when high performing teams share a common goal."

SAVE THE DATE



April 24, 2010

MEETINGS

IEIP Influenza Joint Meeting was held August 24-25, 2009 in Bangkok, Thailand to review status of novel 2009 H1N1 influenza and define priorities and identify activities to contribute to the H1N1 response, to review IEIP and influenza site activities for pneumonia and influenza, and to define priorities and objectives for pneumonia and influenza surveillance for the next 2-3 years; specifically, to define the burden of influenza disease, including 2009 H1N1. Staff from DBD, DVD, and DEISS (IEIP) attended the meeting.

Anthrax Vaccine Research Program Investigators Meeting was held September 9, 2009 in Atlanta, GA. The Anthrax Vaccine Research Program (including: Jennifer Wright, Conrad Quinn, Brian Plikaytis and Chuck Rose) presented findings from the nearly 10 year clinical trial and associated non-human primate studies to key stakeholders.

Get Smart Retail Pharmacy Summit was held October 1, 2009 in Atlanta, GA. Representatives from national retail pharmacy chains, non-profit and advocacy organizations, and CDC staff met for presentations on the latest science on antibiotic use and resistance, discussions on the important role pharmacists and retail pharmacies can play in educating patients, and specific and successful strategies that can enhance social responsibility and profitability through partnerships with the Get Smart campaign.

International Conference on Legionella was held October 13-17, 2009 in Paris, France. The Conference is a premier international meeting held every four years to discuss new findings on *Legionella pneumophila*, other *Legionella*, and the disease caused by these organisms and also to identify knowledge gaps that exist in controlling *Legionella* infections of humans. The 7th International Conference in this series, *Legionella 2009*, addressed a wide range of current research and trends related to *Legionella*. RDB's Barry Fields presented the opening talk. Lauri Hicks, Patrick Yang, Claressa Lucas and Natalia Kozak presented talks and/or posters.

GAVI Board and Partners Meeting was held November 17-19, 2009 in Hanoi, Vietnam. Dr. Hajjeh participated in a panel discussion on "Changing the business of global health and delivering results."