**Vaccines: The Week in Review** 

6 June 2011

**Center for Vaccine Ethics & Policy (CVEP)** 

http://centerforvaccineethicsandpolicy.wordpress.com/

A program of

- Center for Bioethics, University of Pennsylvania http://www.bioethics.upenn.edu/

- The Wistar Institute Vaccine Center

http://www.wistar.org/vaccinecenter/default.html

 Children's Hospital of Philadelphia, Vaccine Education Center http://www.chop.edu/consumer/jsp/microsite/microsite.jsp

This weekly summary targets news and events in global vaccines ethics and policy gathered from key governmental, NGO and industry sources, key journals and other sources. This summary supports ongoing initiatives of the Center for Vaccine Ethics & Policy, and is not intended to be exhaustive in its coverage. Vaccines: The Week in Review is now also posted in pdf form and as a set of blog posts at <a href="http://centerforvaccineethicsandpolicy.wordpress.com/">http://centerforvaccineethicsandpolicy.wordpress.com/</a>. This blog allows full-texting searching of some 1,600 items.

Comments and suggestions should be directed to
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**UNICEF said it is improving transparency around vaccine supply by making vaccine prices available on its website**. As the largest buyer of children's vaccines, UNICEF noted that the action is in line with its "commitment to ensure that vaccine supply is sustainable and affordable." Information on market dynamics that influence vaccine uptake "will be more publicly available, starting with prices at which companies sell vaccines to UNICEF." Shanelle Hall, Director of Supply Division, UNICEF, said, "Transparency is a core principle in itself and will support governments and partners in making more informed decisions. Transparency will also help foster a competitive, diverse supplier base for global public goods."

UNICEF said it "undertook a consultation with all suppliers to ensure understanding and acceptance of the new policy prior to publishing vaccine prices online. All recent and future tenders include a clause that enables UNICEF to make awarded vaccine prices publicly available, in addition to pricing and contracting information already in the public domain on UNICEF's website." The procurement of vaccines is UNICEF's largest procurement activity, worth US\$757 million in 2010. Last year, UNICEF provided 2.5

billion doses of vaccines to 99 countries, reaching an estimated 58 per cent of the world's children.

http://www.unicef.org/media/media 58692.html

# **UNICEF Vaccine Price Data** [full text]

UNICEF has a significant role within vaccine procurement for children. In recognition of this and in an attempt to be fully transparent UNICEF is now publishing a retrospective of vaccine prices.

This overview has been prepared following consultations with vaccine suppliers to UNICEF on making pricing information more transparent. A few suppliers are at this stage not able to share their price information but we hope to add this information in the future.

The vaccine prices received by UNICEF from industry are based on the UNICEF mandate, UNICEF aggregated quantities, commercial terms, reliability of forecasts, timelines of payment, and long standing relationship with industry.

Awarded Prices

The below links provide an overview of prices contracted with suppliers by UNICEF per vaccine.

http://www.unicef.org/supply/index 57476.html

**UNICEF said Executive Director Anthony Lake joined world leaders at a meeting hosted by the Government of Japan** "to discuss how focusing investment on the most vulnerable can improve human security and accelerate global progress toward meeting the Millennium Development Goals." A Plenary session of the meeting "discussed the disturbing evidence that disparities between the richest and poorest children have widened, even as the world has made progress since the 2000 Millennium Declaration." Director Lake said, "Progress, measured by national averages, can conceal huge local disparities, and statistical success can mask moral failure. We need to come together as a global community and fully commit ourselves to reaching the hardest to reach...With the 2015 deadline for achieving the MDGs fast approaching, we must find new ways to do more with the resources we have, achieving not only more money for development, but also more development for the money." <a href="http://www.unicef.org/media/media/s8756.html">http://www.unicef.org/media/media/s8756.html</a>

## The MMWR Weekly for June 3, 2011 / Vol. 60 / No. 21 includes:

- <u>Vaccination Coverage Among Children in Kindergarten --- United States, 2009--10</u> School Year
- <u>Update: Influenza Activity --- United States, 2010--11 Season, and Composition of the 2011--12 Influenza Vaccine</u>

http://www.cdc.gov/mmwr/pdf/wk/mm6021.pdf

The **Weekly Epidemiological Record (WER) for 3 June 201**1, vol. 86, 23 (pp 233–240) includes: Targeting influenza in Africa: strategic actions for assessing the impact of the disease and for developing control measures; Surveillance of drug resistance in leprosy: 2010 <a href="http://www.who.int/entity/wer/2011/wer8623.pdf">http://www.who.int/entity/wer/2011/wer8623.pdf</a>

## Twitter Watch

A selection of items of interest this week from a variety of twitter feeds. This capture is highly selective and by no means intended to be exhaustive.

## **PIH** Partners In Health

"Health care programs can and should be made w/ the system as a whole in mind" <a href="http://ow.ly/58MKg">http://ow.ly/58MKg</a> #HIV #AIDS #Haiti

## **PATHtweets PATH**

Read our China program leader Jack Zhang's comments on China's emerging role in #globalhealth and vaccine production. http://ow.ly/577IJ

## **GAVIAlliance GAVI Alliance**

Vaccine alliance seeks \$3.7 bln from London meeting <a href="http://ht.ly/56wlL">http://ht.ly/56wlL</a>

### Journal Watch

[Editor's Note]

Vaccines: The Week in Review continues its weekly scanning of key journals to identify and cite articles, commentary and editorials, books reviews and other content supporting our focus on vaccine ethics and policy. **Journal Watch** is **not intended to be exhaustive**, **but indicative of themes and issues the Center is actively tracking.** We selectively provide full text of some editorial and comment articles that are specifically relevant to our work. Successful access to some of the links provided may require subscription or other access arrangement unique to the publisher. If you would like to suggest other journal titles to include in this service, please contact David Curry at: <a href="mailto:david.r.curry@centerforvaccineethicsandpolicy.org">david.r.curry@centerforvaccineethicsandpolicy.org</a>

## **Annals of Internal Medicine**

May 17, 2011; 154 (10) http://www.annals.org/content/current [Reviewed earlier]

#### **British Medical Bulletin**

Volume 97 Issue 1 March 2011 <a href="http://bmb.oxfordjournals.org/content/current">http://bmb.oxfordjournals.org/content/current</a> [Reviewed earlier]

#### **British Medical Journal**

4 June 2011 Volume 342, Issue 7809 <a href="http://www.bmj.com/content/current">http://www.bmj.com/content/current</a> [No relevant content]

#### **Clinical Infectious Diseases**

Volume 52 Issue 12 June 15, 2011 <a href="http://www.journals.uchicago.edu/toc/cid/current">http://www.journals.uchicago.edu/toc/cid/current</a>

ARTICLES AND COMMENTARIES

Pieter Uys, Ben J. Marais, Simon Johnstone-Robertson, John Hargrove, and Robin Wood **Transmission Elasticity in Communities Hyperendemic for Tuberculosis** Clin Infect Dis. (2011) 52(12): 1399-1404 doi:10.1093/cid/cir229 *Abstract* 

Backround. Despite consistently meeting international performance targets for tuberculosis case detection and treatment success, areas where tuberculosis is hyperendemic fail to achieve the predicted epidemiological impact. In this article, we explore the anomalous relationship between defined performance targets and actual reduction in tuberculosis transmission.

Methods. In areas where tuberculosis is endemic, poorly ventilated social gathering places such as shebeens (informal alcohol drinking places), minibus taxis, and clinic waiting rooms are all potential transmission hot spots. We modeled the transmission reduction achieved by removal of infectious persons in settings with different tuberculosis prevalence rates to demonstrate the concept of transmission elasticity. We then applied this concept to real-life data from a hyperendemic community in Cape Town, South Africa.

Results. In a hyperendemic area, reducing the number of infectious people by a given percentage results in a smaller percentage decrease in the annual risk of infection (ARI) compared with a nonendemic area; for example, removing 10% of infectious persons could result in as little as a 5% reduction in the ARI. With use of real-life data and removal of 60% of infectious individuals with tuberculosis, as would be achieved by meeting current performance targets of 70% case detection and 85% cure, the estimated ARI reduction is 50%.

Conclusions. The relationship between the number of infectious people removed and the decrease in ARI is nonlinear. The concept of transmission elasticity has important implications for the formulation of universal performance targets, since hyperendemic areas would require more stringent targets to achieve comparable transmission reduction.

## **Cost Effectiveness and Resource Allocation**

(accessed 5 June 2011)
<a href="http://www.resource-allocation.com/">http://www.resource-allocation.com/</a>
[No relevant content]

# **Emerging Infectious Diseases**

Volume 17, Number 6–June 2011 http://www.cdc.gov/ncidod/EID/index.htm [Reviewed last week]

#### **Health Affairs**

May 2011; Volume 30, Issue 5

Environmental Challenges For Health

<a href="http://content.healthaffairs.org/content/current">http://content.healthaffairs.org/content/current</a>

[Reviewed earlier; No relevant content]

## **Health Economics, Policy and Law**

Volume 6 - Issue 02

http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue [Reviewed earlier; No relevant content]

#### **Human Vaccines**

Volume 7, Issue 6 June 2011

http://www.landesbioscience.com/journals/vaccines/toc/volume/7/issue/5/

Parents' vaccination concerns are about more than risk and benefit

Open Access Article Anna K. Mikulak [No abstract]

### Meeting Report

# How will diagnostics create new opportunities for prophylactic and therapeutic vaccines?

Niranjan Y. Sardesai

The Phacilitate Vaccine Forum in Washington DC (Jan 24-26, 2011) brought together vaccine stakeholders from industry, government and non-government organizations to discuss broad current issues covering the spectrum of vaccine policy, funding, research and clinical development, manufacturing, regulatory, and post marketing safety and surveillance. While the conference is held annually and the topics generally discussed reflect the emerging trends, case studies, and best practices of current interest to the vaccine industry, this year's meeting had a new plenary session focusing on the intersection of diagnostics and vaccine development. The session was chaired by Dr. Una Ryan (President and CEO, Diagnostics for All) with the provocative title "How will diagnostics create new opportunitites for prophylactic and therapeutic vaccines?" and was followed by a panel discussion amongst industry leaders discussing the key diagnostic applications gaining interest in the vaccine industry. A common theme running through the session was the increasingly significant role of companion diagnostics and immune monitoring to facilitate and accelerate vaccine development. Indeed the recent examples from pneumococcal and meningococcal vaccine development where the developers and regulatory agencies have considered the use of diagnostic assays and immune markers to assess efficacy of the candidate vaccines in regards to licensure strategies for expanding the serotypes covered, can be considered as breakthrough events for the diagnostics developers. As such the meeting and the

session was timely in presenting current progress and for soliciting a convergence of opinions amongst the vaccine industry and the regulatory agencies.

## Commentary

## Synthetic biology: Impact on the design of innovative vaccines

Kathrin Kindsmüller and Ralf Wagner

Conventional vaccine design strategies mainly focus on live-attenuated vaccines, inactivated microorganisms, and subunits thereof comprising purified components or recombinantly expressed proteins, mostly formulated with adjuvants. Although generally very efficient, these approaches are suboptimal or unfeasible for some infectious diseases. Over the past years new technologies to vaccine development have evolved, often utilizing design principles and construction technologies of synthetic biology. The contribution of synthetic biology to vaccine development comprises algorithms for accelerated in silico identification of relevant protein candidates, in silico design of novel immunogens with improved expression, safety and immunogenicity profiles as well as in silico design of (1) nucleic acid based, (2) vectored and (3) live-attenuated vaccines. Furthermore, synthetic biology enables economic and rapid chemical synthesis of DNA encoding the immunogens designed in silico, and their efficient assembly with delivery systems to obtain vectored vaccines. Altogether, synthetic biology can help to develop improved vaccine candidates in considerably less time compared to conventional approaches.

#### **JAMA**

June 8, 2011, Vol 305, No. 22, pp 2257-2368 http://jama.ama-assn.org/current.dtl

#### **Commentaries**

## A Strategic Approach to Therapeutic Cancer Vaccines in the 21st Century

Matthew M. Davis, Elias J. Dayoub

JAMA. 2011;305(22):2343-2344.doi:10.1001/jama.2011.814

Extract: First 150 words

Prophylactic vaccines have forever reduced the burden of disease in the United States and around the world. 1 One of the critical keys to success for prophylactic vaccines was that scientists set their sights on high-burden infectious diseases—frequently with high incidence, and often with high rates of mortality and morbidity and minimally effective therapeutic options at the time vaccines were developed.

Now, in the midst of a golden era of continuing prophylactic vaccine successes, 2 therapeutic vaccines for cancer are being developed. Currently available treatments with surgery, chemotherapy, and radiation therapy help about 2 of every 3 patients diagnosed with cancer survive for at least 5 years in the United States, 3 but many of those patients experience treatment complications and morbidities that reduce their quality of life. Therapeutic vaccines that trigger individuals' targeted immune response against tumor-specific antigens and tumor-associated antigens may offer patients with cancer dual benefits of ...

## **Journal of Infectious Diseases**

Volume 204 Issue 1 July 1, 2011 <a href="http://www.journals.uchicago.edu/toc/jid/current">http://www.journals.uchicago.edu/toc/jid/current</a>

#### MAJOR ARTICLES AND BRIEF REPORTS: PARASITES

Philip Bejon, Jackie Cook, Elke Bergmann-Leitner, Ally Olotu, John Lusingu, Jedidah Mwacharo, Johan Vekemans, Patricia Njuguna, Amanda Leach, Marc Lievens, Sheetij Dutta, Lorenz von Seidlein, Barbara Savarese, Tonya Villafana, Martha M. Lemnge, Joe Cohen, Kevin Marsh, Patrick H. Corran, Evelina Angov, Eleanor M. Riley, and Chris J. Drakeley

# Effect of the Pre-erythrocytic Candidate Malaria Vaccine RTS,S/AS01E on Blood Stage Immunity in Young Children

J Infect Dis. (2011) 204(1): 9-18 doi:10.1093/infdis/jir222 *Abstract* [Free full text]

Background. RTS,S/AS01E is the lead candidate malaria vaccine and confers preerythrocytic immunity. Vaccination may therefore impact acquired immunity to bloodstage malaria parasites after natural infection.

Methods. We measured, by enzyme-linked immunosorbent assay, antibodies to 4 Plasmodium falciparum merozoite antigens (AMA-1, MSP-142, EBA-175, and MSP-3) and by growth inhibitory activity (GIA) using 2 parasite clones (FV0 and 3D7) at 4 times on 860 children who were randomized to receive with RTS,S/AS01E or a control vaccine. Results. Antibody concentrations to AMA-1, EBA-175, and MSP-1 42 decreased with age during the first year of life, then increased to 32 months of age. Anti–MSP-3 antibody concentrations gradually increased, and GIA gradually decreased up to 32 months. Vaccination with RTS,S/AS01E resulted in modest reductions in AMA-1, EBA-175, MSP-142, and MSP-3 antibody concentrations and no significant change in GIA. Increasing anti-merozoite antibody concentrations and GIA were prospectively associated with increased risk of clinical malaria.

Conclusions. Vaccination with RTS,S/AS01E reduces exposure to blood-stage parasites and, thus, reduces anti-merozoite antigen antibody concentrations. However, in this study, these antibodies were not correlates of clinical immunity to malaria. Instead, heterogeneous exposure led to confounded, positive associations between increasing antibody concentration and increasing risk of clinical malaria.

#### The Lancet

Jun 04, 2011 Volume 377 Number 9781 Pages 1891 - 1976 <a href="http://www.thelancet.com/journals/lancet/issue/current">http://www.thelancet.com/journals/lancet/issue/current</a> [No relevant content]

## **The Lancet Infectious Disease**

Jun 2011 Volume 11 Number 6 Pages 417 - 488 <a href="http://www.thelancet.com/journals/laninf/issue/current">http://www.thelancet.com/journals/laninf/issue/current</a> [Reviewed last week]

## **Medical Decision Making (MDM)**

May/June 2011; 31 (3) <a href="http://mdm.sagepub.com/content/current">http://mdm.sagepub.com/content/current</a> [Reviewed last week]

#### **Nature**

Volume 474 Number 7349 pp5-120 2 June 2011 <a href="http://www.nature.com/nature/current\_issue.html">http://www.nature.com/nature/current\_issue.html</a> [No relevant content]

#### **Nature Medicine**

May 2011, Volume 17 No 5 <a href="http://www.nature.com/nm/index.html">http://www.nature.com/nm/index.html</a> [Reviewed earlier]

## **New England Journal of Medicine**

June 2, 2011 Vol. 364 No. 22 <a href="http://content.nejm.org/current.shtml">http://content.nejm.org/current.shtml</a>
[No relevant content]

#### The Pediatric Infectious Disease Journal

June 2011 - Volume 30 - Issue 6 pp: A9-A10,451-542,e88-e108 http://journals.lww.com/pidi/pages/currenttoc.aspx

#### **Original Studies**

# <u>Early Estimate of the Effectiveness of Quadrivalent Meningococcal Conjugate</u> Vaccine

MacNeil, Jessica R.; Cohn, Amanda C.; Zell, Elizabeth R.; Schmink, Susanna; Miller, Elaine; Clark, Thomas; Messonnier, Nancy E.; for the Active Bacterial Core surveillance (ABCs) Team and MeningNet Surveillance Partners

Pediatric Infectious Disease Journal. 30(6):451-455, June 2011.

doi: 10.1097/INF.0b013e31820a8b3c

Abstract:

Background: In January 2005, a quadrivalent meningococcal conjugate vaccine (MenACWYD) was licensed for use in the United States. The Advisory Committee on Immunization Practices recommends MenACWYD for all adolescents 11 to 18 years of age and others at increased risk for meningococcal disease.

Methods: Reports of breakthrough meningococcal disease after vaccination with MenACWYD were collected. A simulation approach was used to estimate the expected number of cases in vaccinated persons.

Results: Between 2005 and 2008, 14 breakthrough cases, including 3 deaths occurred. At a vaccine effectiveness (VE) of 90%, 7 breakthrough cases would be expected (range, 1–17); at VE of 85%, 11 cases (range, 2–30); at VE of 80%, 15 cases (range, 5–28); and at VE of 75%, 18 cases (range, 7–32) would be expected. The probability of the ≥14 observed cases occurring was 2.9% at VE of 90%, 29.3% at VE of 85%, 66.1% at VE of 80%, and 83.0% at VE of 75%.

Conclusions: This report provides an early estimate of MenACWYD effectiveness within 3 to 4 years after vaccination, and suggests that MenACWYD effectiveness is 80% to 85%, similar to the VE reported for meningococcal polysaccharide vaccine.

# **Current Abstracts**

## **Implementation of Cocooning Against Pertussis in a High-risk Population**

Pediatric Infectious Disease Journal. 30(6):500, June 2011.

doi: 10.1097/INF.0b013e318218ef05

#### **Pediatrics**

June 2011, VOLUME 127 / ISSUE 6

http://pediatrics.aappublications.org/current.shtml

#### **Articles**

# Immunogenicity and Safety of H influenzae Type b—N meningitidis C/Y Conjugate Vaccine in Infants

Kristina A. Bryant, Gary S. Marshall, Colin D. Marchant, Noris Pavia-Ruiz, Terry Nolan, Stephen Rinderknecht, Mark Blatter, Emmanuel Aris, Pascal Lestrate, Dominique Boutriau, Leonard R. Friedland, and Jacqueline M. Miller

Pediatrics 2011; 127:e1375-e1385

**Abstract** 

BACKGROUND: Meningococcal disease incidence is highest in children younger than 2 years of age, yet there is no US-licensed vaccine for this age group. A phase III study evaluated the immunogenicity and safety of an investigational Haemophilus influenzae type b (Hib)—Neisseria meningitidis serogroups C and Y-tetanus toxoid conjugate vaccine (HibMenCY).

MATERIALS AND METHODS: A total of 4180 infants were randomly assigned to receive the HibMenCY at the ages of 2, 4, 6, and 12 to 15 months or the licensed Hib tetanus toxoid conjugate vaccine (ActHIB) at 2, 4, and 6 months and Hib conjugated to N meningitidis outer membrane protein (PedvaxHIB) at 12 to 15 months. Routinely scheduled vaccines were coadministered. Serum bactericidal activity using human complement and anti–polyribosylribitol phosphate antibodies were assessed in 991 subjects. Local and systemic adverse reactions were recorded for 4 days after each dose.

RESULTS: The percentage of HibMenCY recipients with serum bactericidal assay using human complement titers of 1:8 or higher after dose 3 was 98.8% for N meningitidis serogroup C (MenC) and 95.8% for N meningitidis serogroup Y (MenY). After dose 4, the percentages were 98.5% and 98.8%, respectively. The percentage of HibMenCY recipients with postdose 3 anti-polyribosylribitol phosphate antibody levels of  $\geq 1.0$  µg/mL was noninferior to that of control (96.3% vs 91.2%). After dose 4, MenC and MenY serum bactericidal assay using human complement antibody titers increased 12-fold over pre—dose 4 levels. Incidence of pain, redness, and swelling at the HibMenCY injection sites tended to be lower than with Hib type b after the first 3 doses and after the fourth dose. Rates of systemic symptoms were similar across groups.

CONCLUSIONS: The HibMenCY was immunogenic against MenC and MenY and induced anti–polyribosylribitol phosphate antibody levels noninferior to those of licensed Hib conjugate vaccine. The safety profile of the HibMenCY was clinically acceptable and comparable to Hib conjugate vaccine.

#### **Commentaries**

**Bruesewitz v Wyeth: Ensuring the Availability of Children's Vaccines** 

Gary N. McAbee, William M. McDonnell, and Steven M. Donn

Pediatrics 2011; 127:1180-1181

Principles of Pediatric Patient Safety: Reducing Harm Due to Medical Care

# Steering Committee on Quality Improvement and Management and Committee on Hospital Care

Pediatrics 2011; 127:1199-1210

Abstract

Pediatricians are rendering care in an environment that is increasingly complex, which results in multiple opportunities to cause unintended harm. National awareness of patient safety risks has grown in the 10 years since the Institute of Medicine published its report To Err Is Human, and patients and society as a whole continue to challenge health care providers to examine their practices and implement safety solutions. The depth and breadth of harm incurred by the practice of medicine is still being defined as reports continue to uncover a variety of avoidable errors, from those that involve specific high-risk medications to those that are more generalizable, such as patient misidentification. Pediatricians in all venues must have a working knowledge of patient-safety language, advocate for best practices that attend to risks that are unique to children, identify and support a culture of safety, and lead efforts to eliminate avoidable harm in any setting in which medical care is rendered to children.

#### **Pharmacoeconomics**

June 1, 2011 - Volume 29 - Issue 6 pp: 455-547 http://adisonline.com/pharmacoeconomics/pages/currenttoc.aspx [Reviewed earlier]

#### **PLoS Medicine**

(Attempted accessed 5 June 2011: database unavailable) <a href="http://www.plosmedicine.org/article/browse.action?field=date">http://www.plosmedicine.org/article/browse.action?field=date</a>

#### Science

3 June 2011 vol 332, issue 6034, pages 1117-1228 <a href="http://www.sciencemag.org/current.dtl">http://www.sciencemag.org/current.dtl</a>
[No relevant content]

## **Science Translational Medicine**

1 June 2011 vol 3, issue 85 http://stm.sciencemag.org/content/current [No relevant content]

## **Tropical Medicine & International Health**

June 2011 Volume 16, Issue 6 Pages 661–772 <a href="http://onlinelibrary.wiley.com/doi/10.1111/tmi.2011.16.issue-6/issuetoc">http://onlinelibrary.wiley.com/doi/10.1111/tmi.2011.16.issue-6/issuetoc</a> [Reviewed earlier]

## **Vaccine**

Volume 29, Issue 26 pp. 4299-4430 (10 June 2011) http://www.sciencedirect.com/science/journal/0264410X

## Regular Papers

# A survey of children's preferences for influenza vaccine attributes

Pages 4334-4340

Emuella M. Flood, Kellie J. Ryan, Matthew D. Rousculp, Kathleen M. Beusterien, Stan L. Block, Matthew C. Hall, Parthiv J. Mahadevia

**Abstract** 

Background

While annual influenza vaccination is recommended by the CDC for children 6 months and older, vaccination rates remain suboptimal. For healthy, US children 2 years of age and older, influenza vaccine is available as an intramuscular injection (TIV) or an intranasal spray (LAIV), respectively. Little is known about children's experiences and preferences for influenza vaccine attributes.

Objective

To examine preferences for influenza vaccine attributes and their relative importance among children.

Methods

A quantitative web-survey was administered to children aged 8–12 years sampled from a standing online panel representative of the US population. Children were stratified by age, gender and parent's influenza vaccination behavior. The survey included questions to ascertain children's preferences for influenza vaccine attributes, including efficacy, chance of common side effects, and mode of administration. It included conjoint (tradeoff) questions in which children traded-off different attributes in their choice between two influenza vaccines with differing features. We also surveyed children's comprehension of and ability to complete the conjoint questions. Results

544 children completed the survey (response rate 37%). Children most frequently selected efficacy as the most important vaccine attribute followed by mode of administration (45% and 31%, respectively). When asked for their preference to receive influenza vaccine as a "shot" or a "nose spray", the majority (69%) preferred the nose spray. An evaluation of children's ability to complete the conjoint survey demonstrated that 85% of the sample was able to complete the conjoint tasks. Analysis of the conjoint responses demonstrated that mode of administration and efficacy had the greatest impact on preferences, with a relative importance of 40.5% and 30.6%, respectively. In a direct comparison of vaccine profiles representing the efficacy, side effects, and other characteristics of LAIV and TIV, 79% of children preferred the LAIV-like profile. Conclusion

Children in the sample had consistent opinions regarding influenza vaccine attributes and consider vaccine efficacy and mode of administration to be important. Children can be informed participants in influenza prevention and can be included in discussions regarding influenza vaccination.

A method for estimating vaccine-preventable pediatric influenza pneumonia hospitalizations in developing countries: Thailand as a case study

Pages 4416-4421

Fatimah S. Dawood, Alicia M. Fry, Charung Muangchana, Wiwan Sanasuttipun, Henry C. Baggett, Supamit Chunsuttiwat, Susan A. Maloney, James Mark Simmerman Abstract The burden of influenza in children is increasingly appreciated; some middle-income countries are considering support for influenza vaccine programs. To support decision-making, methods to estimate the potential impact of proposed programs are needed. Using Thailand as a case-study, we present a model that uses surveillance data, published vaccine effectiveness estimates, and vaccination coverage assumptions to estimate the impact of influenza vaccination on pediatric influenza pneumonia hospitalizations. Approximately 56,000 influenza pneumonia hospitalizations occur annually among children aged <18 years in Thailand; 23,700 (41%) may be vaccine-preventable. Vaccination of 85% of Thai children aged 7 months–4 years might prevent 30% of all pediatric influenza pneumonia hospitalizations in Thailand.