24th PIDSP Annual Convention

February 15-17, 2017 Crown Plaza Galieria Manila Ortigas Avenue oor ADB Ave. Q.C. Pediatric Infectious Disease: Showcasing Trends, Achievements & Researches

2016 Highlights in Pediatric Infectious Disease

Ma. Líza Antoínette M. Gonzales, MD, Msc,

Fellow, PPS President, PIDSP







- Trends in infectious diseases in 2016
- ARSP summary report
- PIDSP partnerships and collaborations
- PIDSP Statement on Use of the Dengue Vaccine
- Childhood Immunization
 Calendar 2017 Highlights

New bugs...Bad bugs ...Super bugs...

- Zika virus
- HIV
- **TB**
- "Superbugs"



Global Distribution of Zika Virus Infection





Zika outbreak: how an obscure disease became a global health emergency





Zika declared a Public Health Emergency of International Concern

Moderate Microcephaly



Zika virus: A New Global Threat for 2016

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL REPORT

Zika Virus and Birth Defects — Reviewing the Evidence for Causality

Sonja A. Rasmussen, M.D., Denise J. Jamieson, M.D., M.P.H., Margaret A. Honein, Ph.D., M.P.H., and Lyle R. Petersen, M.D., M.P.H.

The NEW ENGLAND JOURNAL of MEDICINE

BRIEF REPORT

Zika Virus Infection with Prolonged Maternal Viremia and Fetal Brain Abnormalities

R.W. Driggers, C.-Y. Ho, E.M. Korhonen, S. Kuivanen, A.J. Jääskeläinen, T. Smura,
A. Rosenberg, D.A. Hill, R.L. DeBiasi, G. Vezina, J. Timofeev, F.J. Rodriguez,
L. Levanov, J. Razak, P. Iyengar, A. Hennenfent, R. Kennedy, R. Lanciotti,
A. du Plessis, and O. Vapalahti



International Journal of Environmental Research and Public Health

MDPI

Review Zika Virus Infection and Microcephaly: Evidence for a Causal Link

Jin-Na Wang and Feng Ling *



Zika and the Risk of Microcephaly

Michael A. Johansson, Ph.D., Luis Mier-y-Teran-Romero, Ph.D., Jennita Reefhuis, Ph.D., Suzanne M. Gilboa, Ph.D., and Susan L. Hills, M.B., B.S.

The NEW ENGLAND JOURNAL of MEDICINE

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Guillain–Barré Syndrome Associated with Zika Virus Infection in Colombia

Beatriz Parra, Ph.D., Jairo Lizarazo, M.D., Jorge A. Jiménez-Arango, M.D., Andrés F. Zea-Vera, M.D., Ph.D., Guillermo González-Manrique, M.D., José Vargas, M.D., Jorge A. Angarita, M.D., Gonzalo Zuñiga, M.D., Reydmar Lopez-Gonzalez, M.D., Cindy L. Beltran, M.D., Karen H. Rizcala, M.D., Maria T. Morales, M.D., Oscar Pacheco, M.D., Martha L. Ospina, M.D., Anupama Kumar, M.B., B.S., David R. Cornblath, M.D., Laura S. Muñoz, M.D., Lyda Osorio, M.D., Ph.D., Paula Barreras, M.D., and Carlos A. Pardo, M.D.

Guillain-Barré Syndrome outbreak associated with Zika virus infection in French Polynesia: a case-control study

Van-Mai Cao-Lormeau^{*}, Alexandre Blake^{*}, Sandrine Mons, Stéphane Lastère, Gaudine Roche, Jessica Vanhomwegen, Timothée Dub, Laure Baudouin, Anita Teissier, Philippe Larre, Anne-Laure Vial, Christophe Decam, Valérie Choumet, Susan K Halstead, Hugh J Willison, Lucile Musset, Jean-Claude Manuguerra, Philippe Despres, Emmanuel Fournier, Henri-Pierre Mallet, Didier Musso, Arnaud Fontanet^{*}, Jean Neil^{*}, Frédéric Ghawché^{*}



Zika Virus RNA Replication and Persistence in Brain and Placental Tissue

Research

JAMA | Original Investigation

Birth Defects Among Fetuses and Infants of US Women With Evidence of Possible Zika Virus Infection During Pregnancy

Margaret A. Honein, PhD; April L. Dawson, MPH; Emily E. Petersen, MD; Abbey M. Jones, MPH; Ellen H. Lee, MD; Mahsa M. Yazdy, PhD; Nina Ahmad, MD; Jennifer Macdonald, MPH; Nicole Evert, MS; Andrea Bingham, PhD; Sascha R. Ellington, MSPH; Carrie K. Shapiro-Mendoza, PhD; Titilope Oduyebo, MD; Anne D. Fine, MD; Catherine M. Brown, DVM; Jamie N. Sommer, MS; Jyoti Gupta, MPH; Philip Cavicchia, PhD; Sally Slavinski, DVM; Jennifer L. White, MPH; S. Michele Owen, PhD; Lyle R. Petersen, MD; Coleen Boyle, PhD; Dana Meaney-Delman, MD; Denise J. Jamieson, MD; for the US Zika Pregnancy Registry Collaboration

CONCLUSIONS AND RELEVANCE Among pregnant women in the United States with completed pregnancies and laboratory evidence of possible recent Zika infection, 6% of fetuses or infants had evidence of Zika-associated birth defects, primarily brain abnormalities and microcephaly, whereas among women with first-trimester Zika infection, 11% of fetuses or infants had evidence of Zika-associated birth defects. These findings support the importance of screening pregnant women for Zika virus exposure.

Localization of Zika virus RNA brain tissues from infants with microcephaly



Localization of Zika virus RNA in placental tissues of women after spontaneous abortion

Downloaded From: http://jamanetwork.com/ on 12/28/2016

Bhatnagar J et al. Emerg Infect Dis. 2017 Mar

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Zika virus in Asia

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^bGlaxoSmithKline Vaccines, R&D Asia-Pacific, 150 Beach Road, 189720, Singapore

populations do not face any risk of a Zika epidemic. Based on the volume of travellers arriving from airports in countries where ZIKV is circulating, the resident population at risk for ZIKV exposure, and health expenditure per capita, a recent model has suggested that India, the Philippines, Indonesia, Pakistan, and Bangladesh are at a high risk of ZIKV importation with a possible significant health impact on the population.⁹⁶ For example, in India, an estimated 1.2 billion people are susceptible to ZIKV exposure during the peak seasonal risk (August). Combined with the continuous growth of the population, globalization, urbanization, climate change, and the lack of effective vector control measures, Asian countries may well be exposed to Zika outbreaks in the near future.

ZIKV strains are divided into two major lineages: the African lineage and the Asian/American lineage. These two lineages differ in approximately 90% of their nucleotide sequence.² Strains belonging to the Asian/American lineage have been isolated in Southeast Asia, in the Pacific Islands, and in the Americas. Within the Asian/American lineage, the strains from the Americas have formed a new American cluster.^{97–99} Molecular analysis of strains



Figure 2, Map of Asian countries in which Zika virus circulation has been reported up to September 1, 2016,

Zika Cases in the Philippines

PH records 53 Zika cases in 2016

The Department of Health announced a total of 53 Zika cases were recorded in the Philippines in 2016. Of the number 60 percent were female, aged 7 to 59 years. The last case of the year was reported on December 23.

The World Health Organization classified the infection as an "international emergency" by February 2016, owing to the outbreaks in several Latin American countries. It has since downgraded classification to "significant enduring public health challenge" as the number of infections have tapered off.

Of the reported cases in the Philippines, four were pregnant women, one of whom already gave birth. The baby is being closely monitored by the health agency, as with the remaining expectant mothers.



Locally Confirmed Zika Cases, Feb. 18, 2016 to Jan. 19, 2017 RITM (n=56)

- Age range: 7 59 years old (median=17 years)
- Female = 38; Male=18
- Pregnant = 7 cases (3 NCR, 2 IV-A, 2 VII)
- Asymptomatic = 3

 (household members of confirmed cases)

WHO Downgrades Zika: 'No Longer an Emergency'

GENEVA (ChurchMilitant.com) - The World Health Organization (WHO) is downgrading the Zika virus from being a "public health emergency" to that of a "long-term problem."

At WHO's meeting in Geneva Friday, November 18, Dr. David Heymann, chairman of the WHO's Emergency Committee, announced that the Zika virus considered "under International Health Regulations" (IHR) doesn't meet the requirements of a "Public Health Emergency of International Concern PHEIC."



World Health Organization Downgrades Zika's Status From Global International Health Emergency The original WHO emergency was instituted in February 2016 in response to increasing Zika caseloads in Brazil with concurrent cases of microcephaly birth defects in newborns. The change in WHO status for Zika is due, in part, to the much lower rate of infections, death and deformities attributed to the Zika versus what was originally projected after the health emergency was declared.

While Zika still remains problematic in areas which have not yet been infected, public health experts point out that when a large portion of a population has been infected with a virus and has recovered, rising "herd immunity" usually ends the transmission of the virus for several years, until enough susceptible victims are born. Significant progress has also been made in <u>the development of a Zika</u> <u>vaccine</u>, now anticipated to be available as soon as 2018. With more than a dozen companies as well as the National Institutes of Health (NIH) vying for the prize of a successful vaccine, the race is on to bring a vaccine to market. An experimental DNA-based vaccine from NIH is already being tested in clinical trials with volunteers.



2015 Global HIV/AIDS



36.7 MILLION

people worldwide are currently living with HIV/AIDS.

1.8 MILLION CHILDREN

worldwide are living with HIV. Most of these children were infected by their HIV-positive mothers during pregnancy, childbirth or breastfeeding. The vast majority of people living with HIV are in low- to middle-income countries, particularly in Sub-Saharan Africa.



THE GLOBAL HIV/AIDS EPIDEMIC



...one of the world's most serious health and development challenges

Number of new HIV infections in 2015 and change since 2010

2.1 million people newly infected in 2015 globally

Decrease in number of infections globally since 2010:



AVERT.org Source: UNAIDS 2016







- Decline in HIV prevalence and new HIV cases since 2010 due to:
 - Prevention strategies
 - Increased ARV treatment, including in resource-poor countries
- Progress made in preventing mother-to-child transmission of HIV and keeping mothers alive.
 - In 2015, 77% of pregnant women living with HIV globally had access to antiretroviral medicines to prevent transmission of HIV to their babies
- New HIV infections among children have declined by 50% since 2010.



Cumulative Number of HIV Cases in the Philippines (Jan 1984 - Oct 2016)

Figure 3. Number of HIV Cases Reported in the Philippines by Year, January 1984 to October 2016 (N=38,114)*





Number of Newly Diagnosed HIV Cases per Day



Source: National HIV/AIDS & STI Surveillance and Strategic Information Unit Epidemiology Bureau, Department of Health





DIAGNOSED HIV CASES IN THE PHILIPPINES Jan1984-Oct 2016

Demographic Data	Cumulative Jan 1984 – Oct 2016
Total Reported Cases	38,114
Asymptomatic	34,607 (91%)
AIDS	3,507 (9%)
Male	35,353 (93%)
Female	2,750
Age Range (Median)	1-82 (28)
<15 yrs	110
15-24 yrs	10,279 (27%)
25-34 yrs	19,578 (51%)
35-49 yrs	7,020 (18%)
≥ 50 yrs	1,053
Total PLHIV on ART	15,035
Reported Deaths	1,912



The Growing HIV Epidemic among Adolescents in the Philippines

Figure 1. Number of newly diagnosed HIV cases among adolescents by mode of transmission, 2011-2015 HIV/AIDS & ART Registry of the Philippines (HARP)





sg.news.yahoo.com

Philippines only country in Asia where teen pregnancy rising

MANILA, Philippines (AP) — The Philippines is the only Asia-Pacific country where the rate of teen pregnancies rose over the last two decades and the slow decline of its overall fertility rate may deprive the country of the faster economic growth expected in places that have more working-age people than younger and older dependents, the U.N. Population Fund said Thursday.

Girls aged 15 to 19 make up 10 percent of the country's population of 100 million and one out of 10 of them have already given birth, UNFPA country representative Klaus Beck said. That fertility rate in that age group is 57 births for every 1,000 girls as of 2013 — higher than rates found by surveys every five years from 1998.

He emphasized the urgency of fully implementing a reproductive health law, investing in quality education and health services for teenage girls, and increasing jobs for youth.

The cost of not finishing high school education over the lifetime of young people would be equivalent to about 1 percent of the country gross domestic product, he added.

Associated Press 7 July 2016



World Health Organization

GUIDELINES

CONSOLIDATED GUIDELINES ON THE USE OF ANTIRETROVIRAL DRUGS FOR TREATING AND PREVENTING HIV INFECTION

RECOMMENDATIONS FOR A PUBLIC HEALTH APPROACH

SECOND EDITION 2016

- "Treat-all" recommendation: All populations and age groups (adults, adolescents, children, infants) are now eligible for treatment, including pregnant women, regardless of WHO clinical stage or at any CD4 cell count
- ART should be initiated in **all children living** with HIV, regardless of WHO clinical stage or at any CD4 cell count
- New PMCT recommendations
 - **Dual prophylaxis** with AZT (twice daily) and NVP (once daily) for the first 6 weeks of life in infants born to HIV(+) mothers and who are at **high risk** of acquiring HIV
 - Breastfed infants who are at high risk of acquiring HIV should continue infant prophylaxis for an additional 6 weeks (total12 wks of infant prophylaxis) using either AZT (twice daily) and NVP (once daily) or NVP alone



- Infant feeding practices recommended to HIV-infected mothers should support the greatest likelihood of HIV-free survival of their children and not harm the health of mothers.
- In settings where maternal, newborn and child health services promote and support breastfeeding and ART in order to increase HIV-free survival among infants born to mothers living with HIV:
 - Mothers should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months or beyond (similar to the general population) while being fully supported for ART adherence

Global TB Epidemic

- In 2015: 10.4 million new TB cases worldwide, including
 - **9.4 M (90%)** in adults
 - **1.0 M (10%) in children**
 - 1.2 M (11%) in people living with HIV
 - 480 000 new cases of MDRTB and an additional 100,000 people with rifampicinresistant TB (RR-TB)
- TB is one of the top 10 causes of death worldwide; caused more deaths than HIV and malaria
- 1.8 million TB deaths, including 0.4 million deaths in HIV-positive people
- An estimated 480 000 people developed MDR-TB and an additional100,000 people with rifampicin-resistant TB





Estimated number of deaths from HIV/AIDS and TB in 2015. Deaths from TB among HIV-positive people are shown in grey.^{a,b}





TB in Children

- Approximately 1 M children develop TB disease each year and at least 14% die
- **TB** accounts for 136,000 deaths in children
 - **3% likely have MDRTB**
 - 40,000 in HIV-infected children
- TB is a major or contributory cause of many deaths in children under 5 years old and is in the top ten causes of global mortality in children
- Recent work has shown that TB is an underlying cause of a substantial proportion of pneumonia deaths in TBendemic countries.
- TB is a preventable and treatable disease from which no child should die.

A New Era of Global TB Monitoring

Countries in the three TB high-burden country lists that will be used by WHO during the period 2016-2020, and their areas of overlap





WHO End TB Strategy (2016-2035):

target under the Sustainable Development Goal (SDG3)

SDG3: Ensure healthy lives and promote well-being for all at all ages









Global strategy and targets for tuberculosis prevention, care and control after 2015



VISION	A world free of tuberculosis – zero deaths, disease and suffering due to tuberculosis			
GOAL	End the global tuberculosis epidemic			
IN DICATORS	MILESTONES		TARGETS	
INDICATORS	S 2020		SDG 2030	END TB 2035
Reduction in number of TB deaths compared with 2015 (%)	35%	75%	90%	95%
Reduction in TB incidence rate compared with 2015 (%)	20% (<85/100 000)	50% (<55/100 000)	80% (<20/100 000)	90% (<10/100 000)
TB-affected families facing catastrophic costs due to TB (%)	Zero	Zero	Zero	Zero

Global trends in the estimated number of incident TB cases and the number of TB deaths, 2000-2015.



Desired decline in global TB incidence rates to reach the 2035 targets





In 2016, four diagnostic tests were reviewed and recommended by WHO: the loop-mediated isothermal amplification test for TB (known as TB-LAMP), two line probe assays (LPAs) for the detection of resistance to the first-line anti-TB drugs isoniazid and rifampicin, and an LPA for the detection of resistance to second-line anti-TB drugs.

There are nine anti-TB drugs in advanced phases of clinical development for the treatment of drug-susceptible, multidrug-resistant TB or latent TB infection (LTBI), of which six are new and three are already approved or repurposed. The six new compounds are bedaquiline, delamanid, PBTZ169, pretomanid, Q203 and sutezolid. The three approved or repurposed drugs undergoing further testing ar rifampicin, rifapentine and linezolid.



(NExT Trial)

WHO treatment guidelines for drugresistant tuberculosis

2016 update





The WHO treatment guidelines for drugresistant tuberculosis 2016 update

In May 2016, WHO revised its policy recommendations for the treatment of drug-resistant TB.^a The main changes in the 2016 recommendations were as follows:

- A shorter MDR-TB treatment regimen is now recommended for patients (other than pregnant women) with pulmonary RR or MDR-TB that is not resistant to second-line drugs.^b
- All RR-TB cases are to be treated with a MDR-TB regimen, regardless of isoniazid susceptibility.
- The design of longer MDR-TB regimens uses a different regrouping of component medicines, based on current evidence on their effectiveness and safety. Clofazimine and linezolid are now recommended as core secondline medicines in the MDR-TB regimen, whereas p-aminosalicylic acid is an add-on agent. Macrolides are no longer indicated for MDR-TB regimens.
- Specific recommendations are made on the treatment of children with MDR/RR-TB based on a first-ever meta-analysis of individual-level paediatric patient data for treatment outcomes.
- Evidence-informed recommendations on the role of partial resection surgery are now included.

Development of a new FDC

Simple to use, affordable, "child-friendly" formulations

- In Dec. 2015, first manufacturer Macleods made available new child-friendly correctlydosed fixed-dosed combinations of the generic drugs used to treat TB:
 - Rifampicin 75 mg + Isoniazid 50 mg + Pyrazinamide 150 mg (two-month intensive phase)
 - Rifampicin 75 mg + Isoniazid 50 mg (fourmonth continuation phase)
- Product attributes: Correct, WHOrecommended doses, Dispersible in liquid, Palatable fruit flavors
- The average treatment costs is \$15.54 through the Global Drug Facility (GDF)



Slides from lecture of S .Graham on Treatment of childhood TB: issues and controversies 23rd PHILCAT Annual convention, Manila 19th August 2016

Availability of Child-friendly FDCs

- Market now more responsive to children with TB
- Procurement available through the Global Drug Facility and using Global Fund grants.
- WHO Prequalification of Macleods FDCs anticipated in 2016
- Macleods is pursuing additional regulatory filings across HBCs to ensure broad market access
- Development underway of dispersible isoniazid and ethambutol





Slides from lecture of S .Graham on Treatment of childhood TB: issues and controversies 23rd PHILCAT Annual convention, Manila 19th August 2016



"Biggest threat to Medicine" – United Nations

Medical Definition of superbug

1.: a pathogenic microorganism and especially a bacterium that has developed resistance to the medications normally used against it <The rise of superbugs that can survive multiple antibiotics—such as MRSA, the notorious "flesh-eating bacterium"—has turned once-trivial infections into persistent problems.—Valerie Ross, Discover, 7 Sept. 2010>



Woman dies from extensively drug-resistant superbug in the US

News (http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,pagePK:34382~piPK:34439~theSitePK:4607,00.html)

PRESS RELEASE

By 2050, drug-resistant infections could cause global economic damage on par with 2008 financial crisis

Superbugs a growing concern in Southeast Asian hospitals

28 Dec 2016, Teo Jun Hong



Hospitals should be a sanitary place for the recuperation of illnesses however, some hospital systems fail to achieve that standard



Definitions

- Multi Drug Resistant (MDR) organisms resistant to at least one agent in three or more antimicrobial categories, which are potentially active against the respective GNB.
- Extended Drug Resistant (XDR) organisms –resistant to at least one agent in all but two or fewer antimicrobial categories, which are potentially active against the respective GNB.
- Pan drug resistant (PDR) organisms resistant to all agents in all antimicrobial categories for this isolate

Siegel JD. HICPAC Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006; Magiorakos AP et al. Clin. Microbiol. Infect. 18(3), 268–281 (2012).



Multidrug-resistant organisms: "ESKAPE"

E	Enterococcus faecium; Enterococcus faecalis (VRE)
S	Staphylococcus aureus (MRSA)
К	Klebsiella pneumoniae
Α	Acinetobacter baumannii
Р	Pseudomonas aeruginosa (CR)
E	Enterobacter sp. (ESBLs, CREs)



Rice LB. Federal funding for the study of antimicrobial resistance in nosocomial pathogens: No ESKAPE. J Infect Dis. 2008;197:1079–81

Factors that contribute to AMR

HEALTHCARE PROVIDERS Inappropriate Treatment Regimens

AMR

- Absence of guidelines
- Noncompliance with guidelines
- Lack of training
- No treatment monitoring
- Poor infection control practices

in

INDUSTRY Poor Integrity of the Supply Chain

- Poor quality of drugs
- Unavailability of drugs
- Poor storage conditions
- Wrong dose or combinations
- High drug costs

PATIENTS Irrational Drug Use

- Poor adherence
- Prescription-sharing
- Self prescription
- Treatment interruptions
- Social and Economic Barriers
- Health illiteracy

U.N. Pledges To Fight Antibiotic Resistance In Historic Agreement

World leaders pledge to tackle superbugs, but set no specific targets



September 21, 2016, the President of the UN General Assembly convened an one-day high-level meeting at the UN Headquarters in New York Nations and drug companies commit to fight antibiotic resistance after U.N. assembly

23 Sep 2016, Brenda Lau

ng on Sept. 2



Outline

- Trends in infectious diseases in 2016
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ANTIMICROBIAL RESISTANCE SURVEILLANCE PROGRAM 2015 Data Summary Report

Antimicrobial Resistance Surveillance Reference Laboratory Research Institute for Tropical Medicine Department of Health Philippines

Percentage resistance of Respiratory Pathogens Jan-Dec 2015



- Cumulative resistance rate of *S. pneumoniae* isolates from all specimen: 7.6% (9% for invasive (blood and CSF) isolates but only 1% penicillin resistance rate for non-invasive isolates (non-CSF and non-blood)
- Resistance rates for *H. influenzae* isolates: 8.9% for ampicillin, 3.4% for ampicillin-sulbactam, and 5.7% for chloramphenicol.
- Infections secondary to S. pneumoniae can still be covered with penicillin or one of the antipneumococcal macrolides; however due to high resistance rate of H. influenzae to ampicillin, recommended empiric treatment for suspected H. influenzae infections may consist of beta-lactambeta-lactamase inhibitor combinations and extended spectrum oral cephalosporins.

Data Summary Report 2015

Antimicrobial Resistance Surveillance Program - Philippines

Percentage Resistance of *S. aureus* ARSP 2015



- The 2015 resistance rate of *S. aureus* against the oxacillin is at 62.6% (range 34.4% to 83.6%)
- Continued high rates of methicillin/oxacillin resistance among staphylococci may indicate need to shift empiric treatment of suspected staphylococcal infections from oxacillin to alternative agents, ex. clindamycin, linezolid, vancomycin



Percentage Resistance of *S. typhi* ARSP 2015



- *S. typhi* isolates have remained susceptible to first line agents with resistance rates to ampicillin at 2.6%, co-trimoxazole at 2.5%, and chloramphenicol at 0.9%
- Empiric treatment for suspected uncomplicated typhoid fever could still consist of either chloramphenicol, co-trimoxazole or amoxicillin/ampicillin.

Data Summary Report 2015

Percentage Resistance of *Escherichia coli* in Urine specimens Jan-Dec 2015

Table 10. Percentage of urinary Escherichia coli, all ARSP sites, Jan-Dec 2015						
	Outpatient			Inpatient		
Antimicrobial	N	%R	%R 95% C.I.	N	%R	%R 95% C.I.
Ampicillin	750	77.5	74.3-80.4	2074	83.9	82.2-85.4
Co-amoxiclav	927	23.5	20.8-26.4	2209	31.6	29.7-33.6
Cefuroxime	407	21.9	18.0-26.3	990	38.1	35.1-41.2
Ciprofloxacin	798	42.7	39.2-46.2	2096	43.4	41.3-45.6
Co-trimoxazole	800	57.1	53.6-60.5	2058	67.9	65.8-69.9
Nitrofurantoin	814	3.1	2.1-4.6	1585	6.5	5.4-7.9
Intravenous Agents						
Pip/Tazobactam	864	3.9	2.8-5.5	2048	10.7	9.4-12.1
Ceftriaxone	816	29.9	26.8-33.2	1973	40.4	38.2-42.6
Ertapenem	387	0.5	0.1-2.0	1241	5.7	4.5-7.2
Amikacin	793	4.8	3.5-6.7	2105	4.2	3.4-5.2





Figure 58. Yearly ampicillin-sulbactam, amikacin and gentamicin resistance rates of Acinetobacter baumannii, ARSP, 2006-2015





Figure 59. Yearly ciprofloxacin, imipinem and meropenem resistance rates of Acinetobacter baumannii. ARSP, 2006-2015

Yearly resistance rates of A. baumanii to selected antibiotics, 2006-2015 Yearly resistance rates of Ps. aeruginosa selected antibiotics, 2006-2015

- Resistance rates generally did not differ between 2014 and 2015, with significant increase in resistance rates to some antibiotics
- Treatment recommendations for the *Enterobacteriaceae* should be based on their institution's prevailing resistance patterns

Data Summary Report 2015

Antimicrobial Resistance Surveillance Program - Philippines

Figure 50. Yearly carbapenems resistance rates of *Klebsiella pneumoniae*, ARSP, 2006-2015

2010

2012

2011

2013

2014

2015

2006 2007

2008

2009

Yearly resistance rates of K. pneumoniae selected antibiotics, 2006-2015

Multidrug-resistant Pathogens

Table 12: MDR and Possible XDR Pseudomonas aeruginosa and Acinetobacter baumannii, all ARSP sites, Jan- Dec 2015

Organism	Number of isolates tested	Percentage MDR	Percentage Possible XDR
Pseudomonas aeruginosa			
All isolates	4430	22%	18%
Blood isolates	213	43%	20%
Acinetobacter baumannii			
All isolates	3575	66%	48%
Blood isolates	435	60%	35%

- Increasing resistance among the bacterial organisms *Pseudomonas aeruginosa* and *Acinetobacter baumannii* continues to be a concern
- Prudent antimicrobial use, monitoring of resistance patterns and antimicrobial use along with improved standards of infection control are essential in addressing this clinical and public health concern.



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• DOH

- AMS
- Nagcom
- NITAG
- HIV-MTCT
- PhilCAT
- PSMID
- RITM
- Hepatology Society of the Philippines

23rd PHILIPPINE COALITION AGAINST TUBERCULOSIS (PhilCAT) ANNUAL CONVENTION

in partnership with the

PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES (PIDSP)

and the

DEPARTMENT OF HEALTH (DOH)





Philippine Clinical Practice Guidelines 2016

August 18-19, 2016 Crowne Plaza Manila Galleria Ortigas Ave. cor. ADB Ave., Quezon City



Republic of the Philippines Department of Health OFFICE OF THE SECRETARY

16 December 2016

DEPARTMENT PERSONNEL ORDER No. 2016 - <u>4918</u>

SUBJECT:

Creation of a Steering Committee for the Implementation of the Antimicrobial Stewardship (AMS) Program in all hospitals in the Philippines

In 2014, the Office of the President has signed the Administrative Order no. 42 entitled "Creating an Inter-Agency Committee for the Formulation and Implementation of a National Plan to Combat Antimicrobial Resistance in the Philippines" to bring together all key partners across many sectors towards identifying and implementing concrete national efforts and plans to mitigate and control antimicrobial resistance (AMR) in the Philippines. The National Action Plan has identified the national implementation of Antimicrobial Stewardship (AMS) program in health facilities as one of the fundamental country strategies aimed at ensuring rational prescribing, dispensing and use of antimicrobials towards successfully addressing AMR. The



Republic of the Philippines Department of Health OFFICE OF THE SECRETARY

16 December 2016

Likewise, the following societies and stakeholders shall provide their respective representative and alternate in the AMS-Steering Committee every year or as applicable:

- 1. Philippine Medical Association (PMA)
- 2. Pediatric Infectious Disease Society of the Philippines (PIDSP)
- 3. Philippine Society for Microbiology and Infectious Disease (PSMID)
- 4. Philippine College of Physicians (PCP)
- 5. Philippine Hospital Infection Control Society (PHICS), Inc.
- 6. Philippine Hospital Infection Control Nurses (PHICNA), Inc.
- 7. Philippine Society of Pathologists(PSP)
- 8. Philippine Pharmacists Association (PPhA)
- 9. Philippine Society of Hospital Pharmacist (PSHP)
- 10. Philippine Association of Medical Technologist/(PAMET)
- 11. Philippine Hospital Association (PHA)
- 12. Private Hospital Association of the Philippines (PHAPi)



ANTIMICROBIAL STEWARDSHIP PROGRAM IN HOSPITALS

Manual of Procedures



NATIONAL ANTIMICROBIAL STEWARDSHIP (AMS) PROGRAM

The National Antimicrobial Stewardship (AMS) Program is the concerted implementation of systematic, multi-disciplinary, multipronged interventions in both public and private hospitals in the Philippines to improve appropriate use of antimicrobials, which is essential for preventing the emergence and spread of antimicrobial resistance (AMR).



Philippines launches the Antimicrobial Stewardship Toolkit during the Antibiotics Awareness Week



POINT PREVELANCE SURVEY ON ANTIMICROBIAL USE IN SELECTED PHILIPPINE HOSPITALS

A Collaborative Project of PSMID, PIDSP and RITM

Objectives

3.1. General

3.1.1. To describe antimicrobial use in select hospitals in the Philippines

3.2. Specific

- 3.2.1. To determine the prevalence of inpatient antimicrobial use in selected hospitals in the Philippines
- 3.2.2. To determine the variation in drug, dose, indications for antimicrobial prescribing in different patient types, hospitals and geographic locations
- 3.2.3. To identify targets for improvement in quality of antimicrobial prescribing
- 3.2.4. To guide policy makers develop interventions to promote prudent antimicrobial use

	Government	Private
Metro	1) Philippine General Hospital	1) University of Perpetual Help Dalta
Manila	2) Research Institute for Tropical	Medical Center
	Medicine	2) The Medical City
		3) Makati Medical Center
		4) St Luke's Medical Center QC
		5) Asian Medical Center
Luzon	1) Jose B Lingad Memorial Medical	1) St. Louis Hospital, Baguio
	Center, Pampanga	
	2) Bicol Regional Teaching and	
	Training Hospital	
Visayas	1) Corazon Locsin Montelibano	1) Chong Hua Hospital, Cebu
	Memorial Medical Center, Bacolod	2) Iloilo Doctors Hospital, Iloilo
Mindanao	1) Southern Philippines Medical	1) Zamboanga Peninsula Medical Center
	Center- Davao City	

Table 1 Participating Tertiary Hospitals on the Pilot AMU PPS



Other DOH-PIDSP partnerships in 2016

Program or Committee	Convenor	Role of PIDSP
Clinical Practice Guideline (CPG) on Common Acute Infectious Diarrhea (Cholera, Amebiasis, Salmonellosis Shigellosis and Rotavirus)	DOH; PSMID	Technical working Group Expert Panel
Viral Hepatitis Prevention and Control Program	DOH; Hepatology Society of the Philippines	Expert panel
National Antibiotic Guidelines Committee	DOH	Technical Working Group Expert Panel



National Immunization Technical Working Group

	Republic of the Philippines Department of Health OFFICE OF THE SECRETARY	(t		
	National Immunization		Nation	al Immunization	Technical
	Committee		L	Working Group	
DEPARTMENT PLANCA No. 2016- 0968		то	: DIR. JOY DR. WILL MS. DUL ENGR. L	CE DUCUSIN DA SILVA CE ELFA UZVIMINDA GARCIA	-FHO -FHO -FHO -FHO

SUBJECT: Reconstitution of the National Immunization Committee (NIC)

The National Immunization Committee (NIC) was created since 1986 under the Ministry Order No. 327-A s.1986 to serve as the advisory committee to the national Expanded Program on Immunization (EPI). Over the years, the NIC was reconstituted to strengthen the implementation of the immunization program of the Department of Health (DOH). The committee provides direction and technical support on policies and plans pertaining to the immunization program. It also provide the forum for coordinating all aspects of the immunization program.

II. Composition

Chairperson:	Assistant Secretary of Health, Office for Technical Services
Co-chairperson:	Director, Women, Men and Children's Health Division
Core Members:	

- 1. Representative, National Institutes for Health, University of the Philippines
- 2. Representative, Philippine Pediatric Society (PPS)
- 3. Representative, Pediatric Infectious Disease Society of the Philippines (PIDSP)
- 4. Representative, Philippine Medical Association (PMA)
- 5. Representative, Philippine Society for Microbiology and Infectious Disease (PSMID)
- 6. Representative, Child Neurology Society of the Philippines (CNSP)
- 7. Representative, National AEFI Committee (NAEFIC)

The committee shall meet at least bi-annually every 3rd Thursday of the months of March and September every year. The NIC may also convene as necessary to discuss urgent issues or those with significant public health impact.

:	DIR. JOYCE DUCUSIN	-FHO
	DR. WILDA SILVA	-FHO
	MS. DULCE ELFA	-FHO
	ENGR. LUZVIMINDA GARCIA	-FHO
	DR. MAY MONTELLANO	-FEU-NRM
	DR. SALVACION GATCHALIAN	-MDH
	DR. SHELLY DE LA VEGA	-MDH
	DR. ANNA LENA LOPEZ	-UP-NIH
	DR. HILTON LAM	-UP-NIH
	DR. BUENALYN TERESITA RAMOS-MORTEL	-UP-CPH
	DR. CECILIA MONTALBAN	-PFV
	DR. MA. LIZA ANTOINETTE GONZALES	- PIDSP
	DR. MARYSIA RECTO	-AHMC
	DR. FATIMA GIMENEZ	-VRPMC
	DR. RONTGENE SOLANTE	-SLH
	DR. MILAGROS BAUTISTA	-PPS

FROM : GERARDO V. BAYUGO, MD, MPH, CESO III Undersecretary of Health Office for Technical Services

- WHAT : Creation of the National Immunization Technical Advisory Group
- WHEN : October 10, 2016, 9:00am 12:00nn
- WHERE : Office for Technical Services Conference Room, Building, 14, Sanlazaro Compound, Sta. Cruz, Manila



Outline

- Trends in infectious diseases in 2016
- ARSP surveillance report
- PIDSP partnership with
 DOH and other medical societies
- PIDSP Statement on Use of the Dengue Vaccine
- Childhood Immunization
 Calendar 2017 Highlights



PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES, INC. A Subspecialty Society Accredited by PMA and PPS

STATEMENT ON THE USE OF THE DENGUE VACCINE Committee on Immunization Pediatric Infectious Disease Society of the Philippines May 20, 2016

Dengue continues to be a leading cause of morbidity in the Philippines. The disease ranks ninth among the ten leading cause of morbidity (FHSIS 2013), with the majority of cases being reported in the 5-14 years age group (PIDSR 2014). A national dengue seroprevalence data is unavailable, except in two areas (Guadalupe, Cebu and San Pablo, Laguna), which showed 58% of children aged 2-4 years old, 75% of children aged 5-8 years, 89% of children aged 9-12 years old and 93% of children aged 13-14 years old, to be seropositive.¹

There is no specific cure for the disease, thus efforts have been focused on early detection, optimal management and prevention through vector control. The development of vaccines against dengue has long been a priority because these interventions have been met with limited success.

A tetravalent live attenuated dengue vaccine manufactured by Sanofi Pasteur was licensed by the Philippine FDA last December 2015. The Department of Health then planned a program to vaccinate 9 year-old children enrolled in public schools in selected regions which reported the highest number of dengue cases (Regions III, IVA and NCR). The PIDSP interim recommendation was subsequently released on February 2016, to guide private practitioners on the use of the vaccine.



PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES, INC.

A Subspecialty Society Accredited by PMA and PPS

Efficacy of Recombinant Live Attenuated Tetravalent Dengue Vaccine (CYD-TVD) Summary of Evidence

Mantaring JBV III and Lozada C

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	Sabchareon 2012	Capeding 2014	Villar 2015		
Risk in Treatment	45/2669	282/6851	277/13920		
	(0.017)	(0.041)	(0.020)		
Risk in Control	32/1333	299/3424	385/6949		
	(0.024)	(0.087)	(0.05)		
Relative Risk	0.702	0.471	0.346		
	(95% CI .449, 1.1)	(95% CI 0.403, 0.552)	(95% CI 0.309, 0.418)		
Relative Risk Reduction	0.298	0.529	0.641		
	(95% CI -0.10, 0.551)	(95% CI 0.448-0.597)	(95% CI 0.582, 0.691)		
Absolute Risk	0.027	0.046	0.036		
Reduction	(95% CI -0.002, -0.008)	(95% CI -0.036, 0.057)	(95% CI 0.030, 0.042)		
Number needed to treat	140	22	29		
	(95% CI 56, -557)	(95% CI 18, 28)	(95% CI 24, 34)		

Table 2. Treatment effect of recombinant live attenuated tetravalent dengue vaccine (CYD-TVD) on occurrence of symptomatic Virologically Confirmed Dengue

Table 3. Treatment Effect of recombinant live attenuated tetravalent dengue vaccine (CYD-TVD) for Hospitalization for Virologically Confirmed Dengue

	Sabchareon 2012	Capeding 2014	Villar 2015
Risk in Treatment	No data	40/6851 (0.006)	277/13920 (0.001)
Risk in Control	No data	61/3424 (0.018)	385/6949 (0.006)
Relative Risk	No data	0.328 (95% CI 0.220, 0.487)	0.197 (95% CI 0.133, 0.346)
Relative Risk Reduction	No data	0.672 (95% CI 0.519, 0.780)	0.803 (95% CI 0.654, 0.887)
Absolute Risk Reduction	No data	0.012 (95% CI 0.008, 0.017)	0.005 (95% CI 0.003, 0.007)
Number needed to treat	No data	84 (95% CI 48, 133)	202 (140, 311)

Summary of Treatment Effect

In summary, the occurrence of symptomatic virologically confirmed dengue, the primary outcome measured in the three studies on the use of recombinant tetravalent dengue vaccine, was significant in the studies of Capeding and Villar. Vaccine efficacy of 52.9% and 64.1%, respectively. The relative risks for hospitalization among the vaccinated groups in these two studies were significant at 0.328 (95% CI 0.220, 0.487) and 0.197 (95% CI 0.113, 0.346) respectively. In the study of Villar vaccine efficacy (RRR) for severe dengue was 95.5% (95% CI 64.9, 99.4). The safety of vaccine in the development of severe adverse events was demonstrated in all the studies. This was significantly lower among the vaccinatedgroup in the study of Capeding. The RRR was 19.5% (95% CI 5.1, 35.1). Only the study of Capeding reported deaths with all 4 cases belonging to the treatment group. The causes of death, however, were not vaccine related in nature.



A Subspecialty Society Accredited by PMA and PPS

Efficacy of Recombinant Live Attenuated Tetravalent Dengue Vaccine (CYD-TVD) Summary of Evidence

Mantaring JBV III and Lozada C

Table 6. Treatment effect of recombinant live attenuated tetravalent dengue vaccine (CYD-TVD) on hospitalization for virologically confirmed dengue among age-specific groups for the Capeding study (CYD14).

	2– 5 years old	6-11 years old	12-14 years old		
Relative Risk	7.45	0.627	0.249		
	(95% CI 0.986, 56.3)	(95% CI 0.248, 1.59)	(95% CI 0.046,1.355)		
Relative Risk Reduction	-6.45	0.373	0.751		
	(95% CI -0.014, 55.33)	(95% CI -0.587, 0.752)	(95% CI -0.355, 0.954)		
Absolute Risk	-0.008	0.002	0.04		
Reduction	(95% CI 0.001, 0.014)	(95% CI -0.002, 0.006)	(95% CI -0.001, 0.012)		
Number Needed to	-126	606	256		
Treat	(95% CI 72, 840)	(163, -648)	(95% CI 83, -1325)		

Table 7. Number of severe hospitalized virologically confirmed dengue cases among the patients given dengue vaccine and placebo from the three trials [from Table S4. Supplementary Appendix]⁵

Trial/Year	Vaccine group (number of severe dengue cases/ number of hospitalized cases)	Control group (number of severe dengue cases/ number of hospitalized cases)		
CYD14/Year 3	11/27	1/13		
CYD15/Year 3	3/16	5/15		
CYD57/Year 3	4/22	0/11		
Total Year 3	18/65	6/39		
CYD57/Year 4	1/16	2/17		
Total	19/81	8/56		

different age groups of the Capeding study (CYD14). The relative risk for virologically confirmed dengue in the 2-5 years is increased in the vaccine group versus that of the placebo. The relative risk for hospitalization was 7.45 (95% CI 0.986, 56.3) in this age group. This was the only age group where the risks were that towards harm with a tendency for statistical significance. For the older age groups, however, the relative risks for virologically confirmed dengue were decreased and towards benefit, with relative risk of 0.627 (95% CI 0.22-1.83) and 0.249 (95% CI 0.02-1.74) among the 6-11 year old and 12-14 year old groups, respectively. These were not statistically significant but the sample size may not have been powered for such a sub-group analysis.

From the above table, for the outcome of hospitalization on long term follow-up, 27/6778 versus 13/3387 were hospitalized. The RR was 1.038 (95% CI 0.54, 2.01), RRR was -0.38 (-0.464, 1.01), ARR -0.00 (-0.003, 0.003) and the NNT was -6884 (392, -352). These results were not statistically significant. For the outcome of hospitalization for severe dengue, 11/6778 versus 1/3387 were reported on long term follow-up. The RR was 5.50 (0.71, 42.6), RRR was -4.50 (-0.29, 41.56), ARR was -0.001 (0, 0.003) and the NNT was -754 (380, -4481). These results are towards harm although not statistically significant but definitely worth considering.



STATEMENT ON THE USE OF THE DENGUE VACCINE Committee on Immunization Pediatric Infectious Disease Society of the Philippines May 20, 2016

The Committee on Immunization hereby recommends the following:

- 1. The vaccine should be administered to children ≥ 9 years old as a Three-dose series given subcutaneously, following a 0-6-12 month schedule.
- 2. Children below 9 years should not receive the vaccine.
- 3. The vaccine should not be given at the same time as other vaccine because data on concomitant administration with other vaccines is not available at this time.
- 4. The need for booster doses is not well defined at this time.

As part of a public health program, the Committee on Immunization suggests the following:

- 1. Enhance the surveillance system that integrates epidemiological, entomological, environmental, clinical and laboratory data to include seroprevalence data.
- 2. Disseminate information, education and communication materials on dengue vaccination for healthcare workers and the public.
- Provide enhanced training for healthcare workers on administering the vaccine, including cold chain management, the informed consent process as well as surveillance for Adverse Events Following Immunization (AEFIs).
- Emphasize the importance of coordinated strategies for dengue control, including vector control, adequate case management, and community programs to prevent transmission of dengue virus.
- Conduct a cost effectiveness study, utilizing local prevalence rates, facility utilization rates, and social costs, in order to justify and prioritize a long term dengue vaccination program.



www.pidsphil.org

FACT SHEET FOR PARENTS AND PATIENTS ON DENGUE VACCINATION

It is important to be aware of the following information if you decide to have your child immunized.

- Vaccination against dengue is recommended for children > 9 years old.
- Vaccination is not recommended for children below 9 years old because of an increased risk of severe dengue and hospitalization for dengue. There is an ongoing 5-year long-term follow-up of these vaccinated children.
- No vaccine is completely safe or completely effective; thus, vaccination does not give 100% protection nor is it 100% safe.
- The vaccine appears to be more effective against dengue in those who were already exposed and are positive for dengue antibodies.
- For children receiving three (3) doses of the dengue vaccine, the chances of getting symptomatic dengue, hospitalization and severe dengue is significantly reduced.
- The most common side effects after vaccination are fever, body weakness, headaches, and pain at the injection site. You should report any side effects following dengue immunization to your doctor.
- Recommendations regarding the vaccine schedule and need for boosters may change as more information come in from ongoing studies.
- Control of dengue is multifactorial. In addition to appropriate clinical case management and vaccination, mosquito control is also important in prevention of dengue.



Presentation of the PIDSP Statement on the Use of the Dengue Vaccine during the 17th Congress Hearing





Senate Hearing On DOH School-Based Dengue Vaccination Program

Dec 06, 2016



FRONT PAGE (HTTP://CNNPHILIPPINES.COM/) / NEWS (HTTP://CNNPHILIPPINES.COM/NEWS/)

Senate probes dengue vaccine program

By Rex Remitio (http://cnnphilippines.com/tags/author/Rex_Remitio), CNN Philippines

Updated 12:05 PM PHT Wed, December 7, 2016





Metro Manila (CNN Philippines) — Senators are questioning the apparent haste in buying dengue vaccines towards the end of the Aquino administration.

Senator Richard Gordon says the project cost was too big and was approved without congressional approval.

The Health Department under then Secretary Janette Garin launched Asia's first public dengue vaccine program last April.

Worth P3.5 billion, the project should protect at least a million young Filipinos from the deadly virus.

But Gordon said the administration party may have used a portion of the fund for the 2016 elections.

Garin is denying the claim.

"However, while questioning the apparent haste with which the anti-dengue vaccine was procured, Gordon said that the legislature will not stand in the way of the government's anti-dengue vaccination program that is already underway."

PH: Dengue vaccination drive to proceed despite CDO on ads airing

10 Jan 2017, Martina C



Schoolchildren given Dengvaxia in Philippines

DOH spokesperson Dr. Eric Tayag maintained the FDA C&D has nothing to do with the Health agency's ongoing vaccination programme so there was no reason to discontinue the public immunisations. He explained to media that the department's use of the vaccine did not constitute an advertisement.



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Childhood Immunization Schedule 2017



ANNOTATIONS:

Bacille Calmette-Guérin (BCG)

Given intradermally (ID)

The dose of BCG is 0.05 ml for children < 12 months of age and 0.1 ml for children > 12 months of age

Given at the earliest possible age after birth preferably within the first 2 months of life

For healthy infants and children > 2 months who are not given BCG at birth, PPD prior to BCG vaccination is not necessary. However, PPD is recommended prior to BCG vaccination if any of the following is present:

Suspected congenital TB

- History of close contact to known or suspected infectious TB cases
- · Clinical findings suggestive of TB and/or chest x-ray suggestive of TB

The dose of influenza vaccine is 0.25 ml for children 6 months to 35 months and 0.5 ml for children 36 months to 18 years.

Children 6 months to 8 years receiving influenza vaccine for the first time should receive 2 doses separated by at least 4 weeks. If only 1 dose was given during the previous influenza season, give 2 doses of the vaccine then 1 dose yearly thereafter. Children aged 9 to 18 years should receive 1 dose of the vaccine yearly. Annual vaccination should begin in February but may be given throughout the year.

Measles Vaccine

Given subcutaneously (SC)

Given at the age of 9 months, but may be given as early as 6 months of age in cases of outbreaks as declared by public health authorities.

DISCLAIMER

The Childhood Immunization Schedule presents recommendations for immunization for children and adolescents based on the knowledge, experience and premises current at the time of publication. The schedule represents a consensus with which physicians may at times disagree. The PPS, PIDSP and PFV acknowledge that individual circumstances may warrant a decision differing from the recommendations given here. This schedule is not absolute. Physicians must regularly update their knowledge about specific vaccines and their use because information about safety and efficacy of vaccines and recommendations relative to their administration continue to develop after a vaccine is licensed.

Schedule ng Pagbibigay ng Bakuna para sa mga Batang Isang Taon Pababa

BAKUNA	SAKIT NA MAIIWASAN	NIREREKOMENDANG EDAD NG BATA				MANE KUMPLETO.		
		PAGKA- Panganak	1 ½ buwan	2 ½ BUWAN	3 ½ BUWAN	9 BUWAN	1 taon	Pag Kumpleto, Protektado
BCG	Tuberkulosis (TB)	1						
HEPATITIS B	Hepatitis B	1						MGA PAALALA
PENTAVALENT VACCINE (DPT-Hep B-HiB)	Dipterya, Tetano, Hepa B, Pertussis, Pulmonya, Meningitis		1	-	>			Nagsisimula ang pagbabakuna ng bata sa
ORAL POLIO VACCINE (OPV)	Polio		-	1	>			kapanganakan.
INACTIVATED POLIO VACCINE (IPV)	Polio				-			bakuna at siguruhing makumpleto
PNEUMOCOCCAL CONJUGATE VACCINE (PCV)	Pulmonya, Meningitis		-	-	>			ang mga ito hanggang sumapit ang kanyang
MEASLES, MUMPS, RUBELLA (MMR)	Tigdas, Beke, German Measles					1	1	Ang mga bakunang hindi

KUMPLETO.

MANIGURADO. MAGPABAKUNA

PAALALA

a bakunang hindi nakalista ay maaring makuha sa pribadong ospital o doktor.



DISEASE SOCIA

Kalusugang Tuloy-Tuloy para sa Pamilyang Pinoy

The Vaccine Introduction in the Philippines



Thank you & Enjoy the convention!

PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES



24TH ANNUAL CONVENTION FEBRUARY 15-17, 2017 CROWNE PLAZA GALLERIA MANILA



PEDIATRIC INFECTIOUS DISEASES: SHOWCASING TRENDS, ACHIEVEMENTS AND RESEARCH