

# The Year in Review: Pediatric Infectious Disease Highlights

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*U E R M M M C*

# Pediatric Infectious Disease Highlights

- I. **Antimicrobial Resistance Rates (2006)**
- II. 2008 Recommendations on Immunizations
- III. Infectious Disease Outbreaks in 2007
- IV. The Good News

# Antimicrobial Resistance Rates 2006

The Antimicrobial Resistance Surveillance  
Program Progress Report  
(January-December 2006)

By: Celia C. Carlos, MD

- Resistance data from 25,768 isolates
- 17 sentinel sites all over the Philippines

# Antimicrobial Resistance Rates(%)

|                             | Ampicillin | Chloram | Cipro | Cotri | Tetracycline | Nalidixic Acid |
|-----------------------------|------------|---------|-------|-------|--------------|----------------|
| <b>A. ENTERIC PATHOGENS</b> |            |         |       |       |              |                |
| Salmonella typhi            | 0.62       | 0.8     |       | 1     |              |                |
| Non Typhoidal Salmonella    | 12         | 10      | 2     | 17    |              |                |
| Shigella                    | 76         | 67      | 6     | 79    |              | 0              |
| Vibrio cholera              |            | 0       |       | 9     | 0            |                |

# Antimicrobial Resistance Rates(%)

|                          | Penicillin | Ampicillin | Chloram | Cotri | Co-Amox |
|--------------------------|------------|------------|---------|-------|---------|
| <b>B. ARI PATHOGENS</b>  |            |            |         |       |         |
| Streptococcus pneumoniae | 6          |            | 5       | 14    |         |
| Haemophilus influenzae   |            | 9          | 14      | 16    |         |
| Moraxella catarrhalis    |            | 15         |         | 59    | 5       |

# Antimicrobial Resistance Rates(%)

|   | Ampicillin | Cotrimoxazole | Oxacillin | Vancomycin |
|---|------------|---------------|-----------|------------|
| <b>C. STAPHYLOCOCCI AND ENTEROCOCCI</b> |            |               |           |            |
| Staphylococcus aureus                   |            | 8             | 30        | 0          |
| Staphylococcus epidermidis              |            | 45            | 53        | 0          |
| Enterococci faecalis                    | 9          |               |           | 1          |

# Antimicrobial Resistance Rates(%)

|                             | Amikacin | Ampicillin<br>Sulbactam | Cefuroxime | Cefepime | Imipenem |
|-----------------------------|----------|-------------------------|------------|----------|----------|
| <b>D. ENTEROBACTERICEAE</b> |          |                         |            |          |          |
| Escherichia coli            | 8        | 24                      | 17         | 6        |          |
| Klebsiella                  | 15       | 30                      | 29         | 10       | 0.6      |
| Enterobacter                | 9        |                         |            | 9        | 2        |

# Antimicrobial Resistance Rates(%)

|   | Amik | Cefepime | Cefta | Pip-Tazo | Cipro | Imipenem |
|---|------|----------|-------|----------|-------|----------|
| <b>E. GRAM NEGATIVE, NON FERMENTATIVE BACILLI</b> |      |          |       |          |       |          |
| Pseudomonas aeruginosa                            | 14   | 11       | 15    | 20       | 23    | 14       |

|                                | Cefixime | Ceftriaxone | Cipro | Spectinomycin | Penicillin |
|--------------------------------|----------|-------------|-------|---------------|------------|
| <b>F. NEISSERIA GONORRHEAE</b> |          |             |       |               |            |
| Neisseria gonorrhoeae          | 0        | 0           | 66    | 2             | 83         |

Celia C. Carlos, MD  
ARSP Progress Report 2006

# Pediatric Infectious Disease Highlights

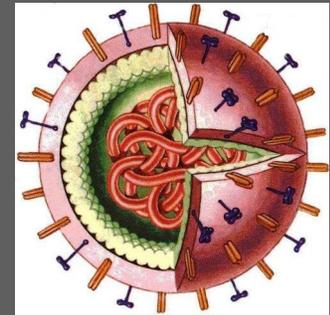
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# 2008 Recommendations on Immunization

- Influenza Vaccine ( 6 mos-5 years)
- Varicella Vaccine
- HPV Vaccine
- Rabies Vaccine

# INFLUENZA VACCINE

2008 Recommendations on Immunization



# Recommendations for Influenza Immunization 2008

- should be given to children 6 months to 5 years
- Children aged 6 mos to 8 years who received only one (1) dose of influenza vaccine should receive two (2) doses of the vaccine the following year

# Recommendations for Influenza Immunization 2008

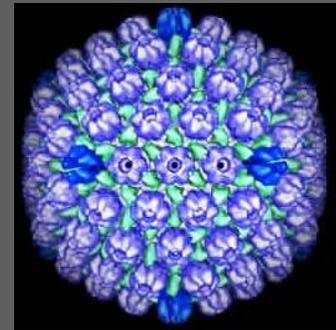
- All persons who want to reduce the risk of becoming ill with influenza or transmitting influenza to others should be vaccinated
- Primary health care provider should offer influenza vaccine throughout the influenza season

# Recommendations for Influenza Immunization 2008

- Administer two (2) doses of the vaccine to children aged 6 months to 8 years if they have not been previously vaccinated at any time (doses separated by 4 weeks or longer)
- Children recommended for vaccination who are on their third or more year of being vaccinated and who received only one dose in each of the first two years of being vaccinated should continue receiving a single annual dose

# VARICELLA VACCINE

2008 Recommendations on Immunization

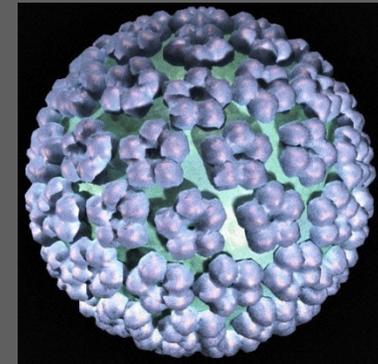


# Recommendations for Varicella Vaccine Immunization 2008

- Two (2) dose vaccine: first dose administer at age 12-15 months and second dose at 4 to 6 years
- A second catch up vaccination for children, adolescents and adults who previously received only 1 dose of the vaccine is also recommended
- All individuals aged 13 years and above without previous evidence of immunity should likewise receive 2 doses of varicella vaccine given at least 4 weeks apart

# HUMAN PAPILLOMA VIRUS VACCINE

2008 Recommendations on Immunization



# Recommendations for HPV Immunization 2008

- HPV is the essential cause of cervical cancer (83% of cervical CA occur in developing countries)

*(Ref. J. Ferlay et al. GLOBOCAN 2002 [2004] )*

- HPV is transmitted by genital contact. At least 50% of sexually active males and females will contract HPV in their lifetime
- HPV 16 & 18 : Cause 70% of cervical CA

# HPV

## NONENVELOPED DOUBLE-STRANDED DNA VIRUS<sup>1</sup>



- >100 types identified<sup>2</sup>
- 30–40 anogenital<sup>2,3</sup>
  - 15–20 oncogenic<sup>\*,2,3</sup> types, including 16, 18, 31, 33, 35, 39, 45, 51, 52, 58<sup>4</sup>
    - HPV 16 (54%) and HPV 18 (13%) account for the majority of worldwide cervical cancers.<sup>5</sup>
  - Nononcogenic<sup>†</sup> types include: 6, 11, 40, 42, 43, 44, 54<sup>4</sup>
    - HPV 6 and 11 are most often associated with external genital warts.<sup>3</sup>

\*High risk; †Low risk

1. Howley PM. In: Fields BN, Knipe DM, Howley PM, eds. Philadelphia, Pa: Lippincott-Raven; 1996:2045–2076. 2. Schiffman M, Castle PE. *Arch Pathol Lab Med.* 2003;127:930–934. 3. Wiley DJ, Douglas J, Beutner K, et al. *Clin Infect Dis.* 2002;35(suppl 2):S210–S224. 4. Muñoz N, Bosch FX, de Sanjosé S, et al. *N Engl J Med.* 2003;348:518–527. 5. Clifford GM, Smith JS, Aguado T, Franceschi S. *Br J Cancer.* 2003;89:101–105.

# HPV and Anogenital Warts

- HPV 6 and 11 responsible for >90% of anogenital warts<sup>1</sup>
- Peak prevalence<sup>2</sup>
  - Women 20–24 years of age (6.2/1,000 person years)
  - Men 25–29 years of age (5.0/1,000 person years)
- Clinically apparent in ~1% of sexually active US adult population<sup>3</sup>



Perianal warts

1. Jansen KU, Shaw AR. *Annu Rev Med.* 2004;55:319–331. 2. Insinga RP, Dasbach EF, Myers ER. *Clin Infect Dis.* 2003;36:1397–1403. 3. Koutsky L. *Am J Med.* 1997;102:3–8.

# Human Papilloma Virus (HPV) Vaccination in Cancer Prevention

- HPV 6 & 11 : Cause 90% of genital warts (men & women)
- Quadrivalent vaccine targeting HPV 6, 11, 16 & 18 should reduce the HPV burden
- Gardasil™, a quadrivalent HPV (Types 6, 11, 16 & 18) L1 virus-like-particle (VLP) vaccine expressed in yeast & formulated on aluminum adjuvant

# HPV Vaccines:

## Highly purified virus-like particles

- MSD's "Gardasil": quadrivalent
  - HPV 6, 11, 16 & 18
  - 0.5 ml IM (deltoid or thigh), at 0,2 & 6 mos
- GSK's "Cervarix": bivalent
  - HPV 16 & 18
  - 0.5 ml IM (deltoid)m at 0, 1 & 6 months

# Percentage of Sexually Active Adolescents aged 15-24 (YAFS)

- More teenagers are sexually active
- In 1994: 18%
  - Male: 26%
  - Female: 10%
- In 2002: 23%
  - Male: 31%
  - Female: 15%

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# Emergence of New Infectious Diseases

- Environmental changes
  - Global warming
- Shifts in human population
- International travel and commerce
- Changes in technological / Industrial practices
- Microbial adaptation
- Breaks (breaches) in public health system

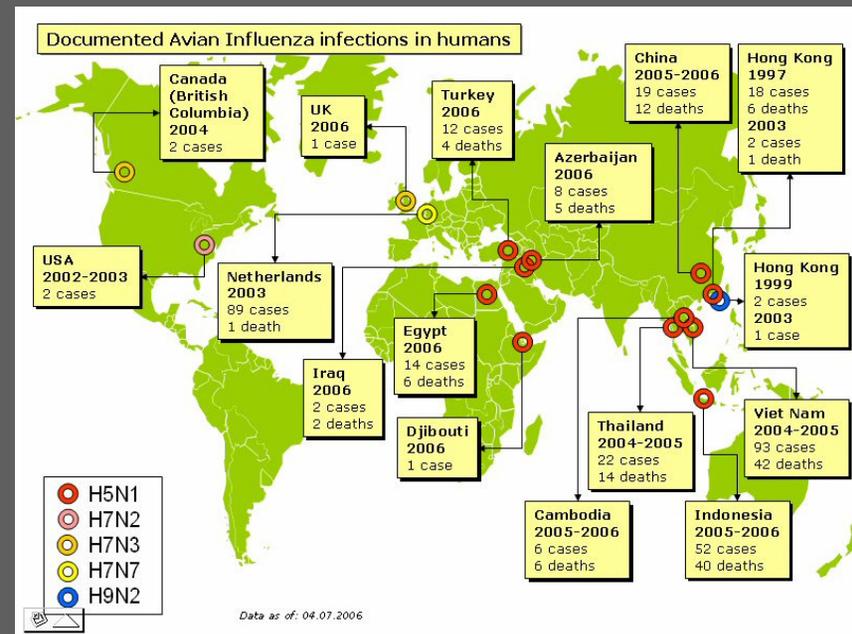
# Infectious Disease Outbreaks in 2007

# Avian Flu

## H5N1: 2007

| Country      | Cases     | Deaths    |
|--------------|-----------|-----------|
| Cambodia     | 1         | 1         |
| China        | 5         | 3         |
| Egypt        | 25        | 9         |
| Indonesia    | 42        | 37        |
| Laos         | 2         | 2         |
| Myanmar      | 1         | 0         |
| Nigeria      | 1         | 1         |
| Pakistan     | 1         | 1         |
| Vietnam      | 8         | 5         |
| <b>TOTAL</b> | <b>86</b> | <b>59</b> |

## DISTRIBUTION MAP



[http://www.who.int/csr/disease/avian\\_influenza/en](http://www.who.int/csr/disease/avian_influenza/en)

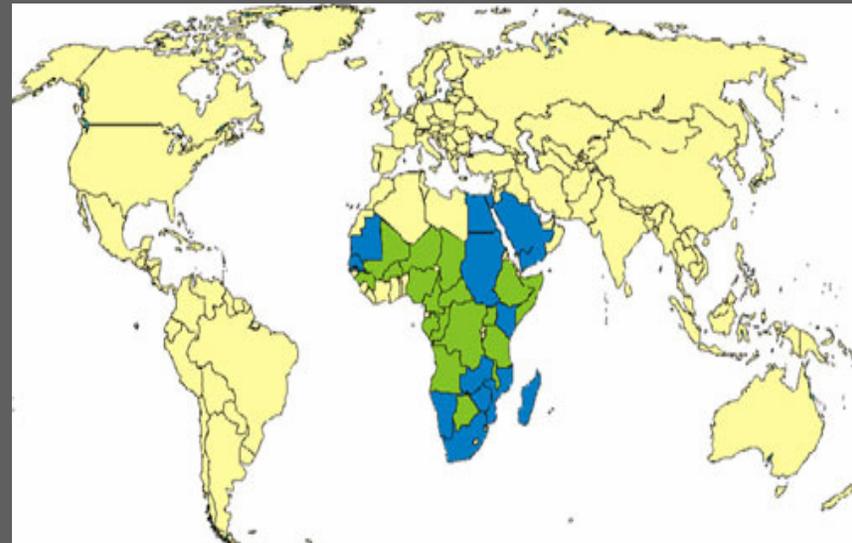
# Rift Valley Fever (Sub – Saharan Africa)

- Caused by RVF virus
- Transmission
  - Mosquito bite (flood water breeding Aedes mosquito)
  - Close contact with blood of infected domestic livestock or fresh carcasses
- Signs and symptoms
  - Fever, retinitis (10%), hemorrhage, jaundice, hepatitis, encephalitis

# Rift Valley Fever (Sub – Saharan Africa)

| Country  | Cases | Deaths | CFR (%) |
|----------|-------|--------|---------|
| Sudan    | 601   | 211    | 33      |
| Kenya    | 684   | 155    | 23      |
| Somalia  | 114   | 51     | 45      |
| Tanzania | 264   | 109    | 41      |

[www.who.int/csr/don/er/](http://www.who.int/csr/don/er/)



**Countries with endemic disease and substantial outbreaks of RVF:**

Gambia, Senegal, Mauritania, Namibia, South Africa, Mozambique, Zimbabwe, Zambia, Kenya, Sudan, Egypt, Madagascar, Saudi Arabia, Yemen

**Countries known to have some cases, periodic isolation of virus, or serologic evidence of RVF:**

Botswana, Angola, Democratic Republic of the Congo, Congo, Gabon, Cameroon, Nigeria, Central African Republic, Chad, Niger, Burkina Faso, Mali, Guinea, Tanzania, Malawi, Uganda, Ethiopia, Somalia

# Meningococcal Disease

## N. meningitidis Type A

| Country                          | Cases   | Deaths | CFR(%) |
|----------------------------------|---------|--------|--------|
| Burkina Faso<br>(Jan – Apr 2007) | 22, 255 | 1490   | 7      |
| Congo<br>(Jan 2007)              | 53      | 6      | 11.3   |
| Sudan<br>(Jan – Feb 10,<br>2007) | 1, 129  | 96     | 8.5    |

[www.who.int/csr/don/er/](http://www.who.int/csr/don/er/)

### African Meningitis Belt



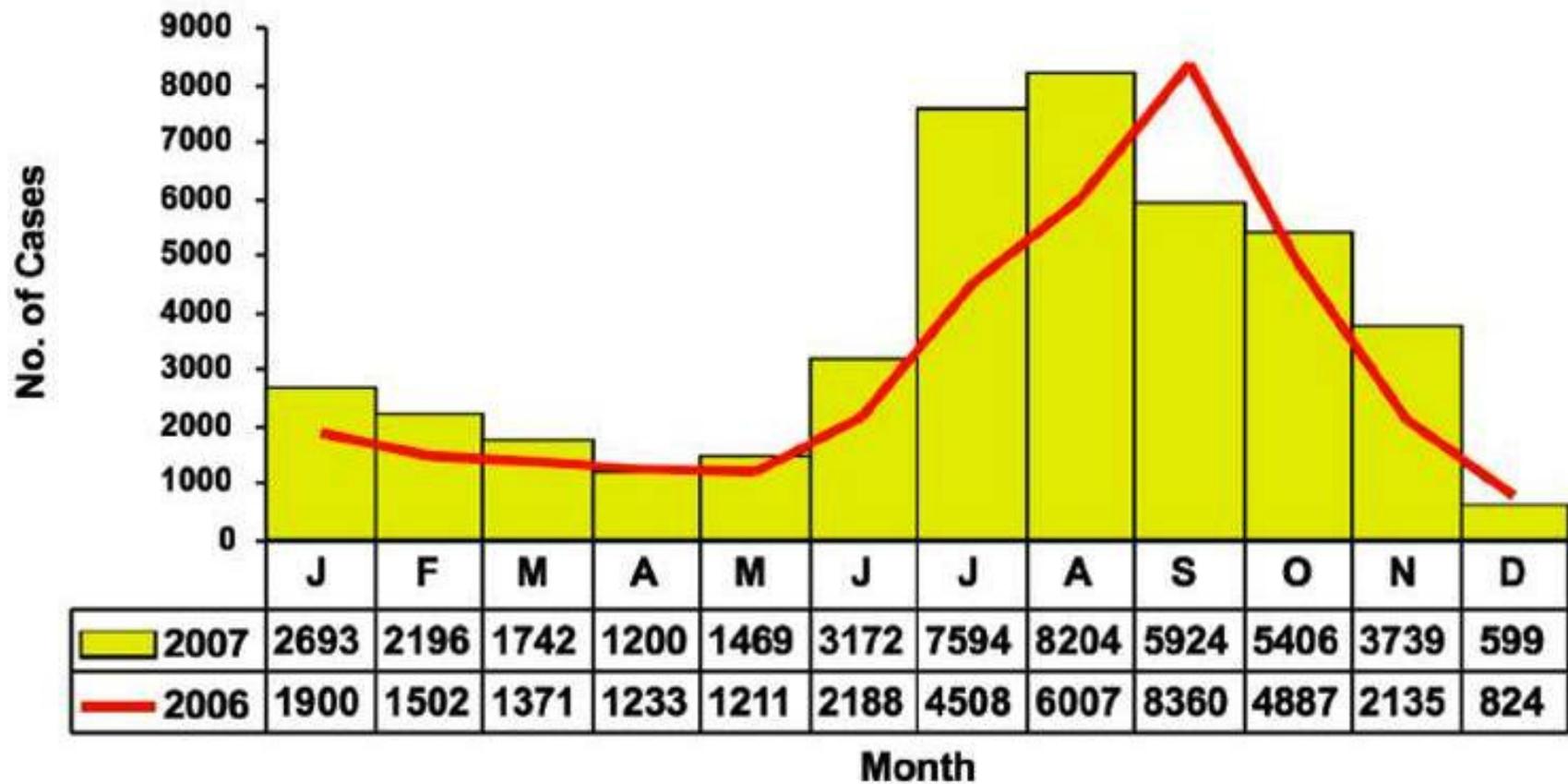
# Cholera in Iraq

- August 2007
  - 9/18 provinces affected
  - Cases: 30, 000 (3,315 (+) for *V. cholerae*)
  - Deaths: 14

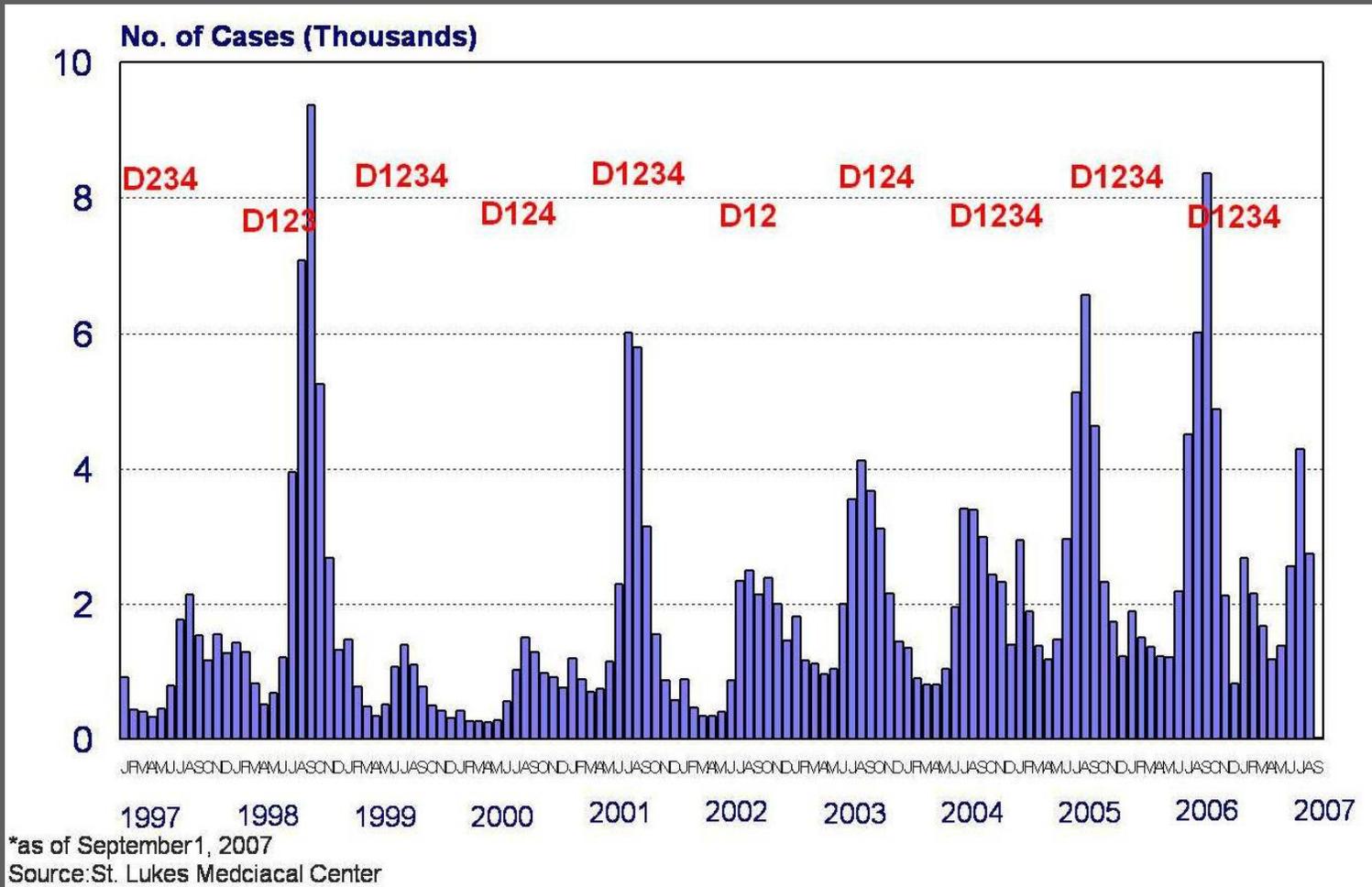


[www.who.int/csr/don/er/](http://www.who.int/csr/don/er/)

# Dengue Cases by Month Philippines, 2007 vs 2006



# Dengue Cases by Month and Strain, Philippines 1997 - 2007



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## WSPID Convention

November 15 – 18, 2007



*Bangkok  
2007*



**5th WORLD CONGRESS OF THE  
WORLD SOCIETY FOR PEDIATRIC  
INFECTIOUS DISEASES - WSPID**  
Bangkok, Thailand, November 15-18, 2007

# Knockout Tigdas Accomplishment Report

2007



## WE KNOCKED OUT TIGDAS!

MORE THAN 8 MILLION FILIPINO CHILDREN WERE REACHED DURING  
THE 2007 DOH DOOR-TO-DOOR MEASLES ELIMINATION CAMPAIGN!

### KNOCKOUT TIGDAS 2007 ACCOMPLISHMENT REPORT



| Regions | Total Pop  | Elig Pop  | Analysis   |    |
|---------|------------|-----------|--|----|
|         |            |           | No. of 9-48mos old children given Anti-Measles Vaccine | %  |
| I       | 4,875,200  | 475,332   | 425,868  | 90 |
| II      | 3,194,400  | 311,454   | 287,329  | 92 |
| III     | 9,576,900  | 933,748   | 913,938  | 98 |
| IV-A    | 11,152,800 | 1,087,398 | 1,072,478  | 99 |
| IV-B    | 2,792,500  | 272,269   | 242,981  | 89 |
| V       | 5,392,300  | 525,749   | 490,403  | 93 |
| VI      | 7,149,700  | 697,096   | 644,871  | 93 |
| VII     | 6,619,800  | 645,431   | 616,487  | 96 |
| VIII    | 4,187,000  | 408,233   | 366,595  | 90 |
| IX      | 3,284,600  | 320,249   | 312,201  | 97 |
| X       | 4,087,700  | 398,551   | 384,166  | 96 |
| XI      | 4,154,300  | 405,044   | 384,525  | 95 |
| XII     | 3,817,900  | 372,245   | 362,384  | 97 |
| ARMM    | 3,320,600  | 323,759   | 320,309  | 99 |
| CARAGA  | 2,408,400  | 234,819   | 223,267  | 95 |
| CAR     | 1,592,400  | 155,259   | 131,992  | 85 |
| NCR     | 11,099,800 | 1,082,231 | 1,018,068  | 94 |
| PHILS   | 88,706,300 | 8,648,864 | 8,197,860  | 95 |



Our heartfelt thanks to HER EXCELLENCY GLORIA MACAPAGAL- ARROYO for putting our children first and signing

# Knockout Tigdas Accomplishment Report

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PIDSP

**PIDSP**  
Pediatric Infectious Disease Society of the Philippines  
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**Dengue in the New Millennium: Continuing Challenges**

**Complicated Pneumonias: Updates in Management**

**The Other MMR: Malaria, Meningococemia, & Rabies**

TB Diagnostics  
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**WHAT'S HOT AND WHAT'S NOT in Pediatric Infectious Diseases**  
February 6 & 7, 2008  
Crowne Plaza Galleria Manila

**15th ANNUAL CONVENTION**

PRE-REGISTRATION DEADLINE WILL BE ON January 15, 2008.

For more information on the PIDSP Convention, contact the PIDSP Secretariat, Philippine Pediatric Society, Inc. (PPSI), 1000, N. E. Ave. 10, Quezon City, Philippines. Tel: (632) 725-1111. Fax: (632) 725-1112. E-mail: [pidsp@ppsi.org.ph](mailto:pidsp@ppsi.org.ph) Website: [www.ppsipedsoc.org.ph](http://www.ppsipedsoc.org.ph)

**Thank You and Good Day!**