

CURRENT SITUATION & EPIDEMIOLOGY OF DENGUE IN SRI LANKA



Media Seminar for Dengue Week
September 09, 2009

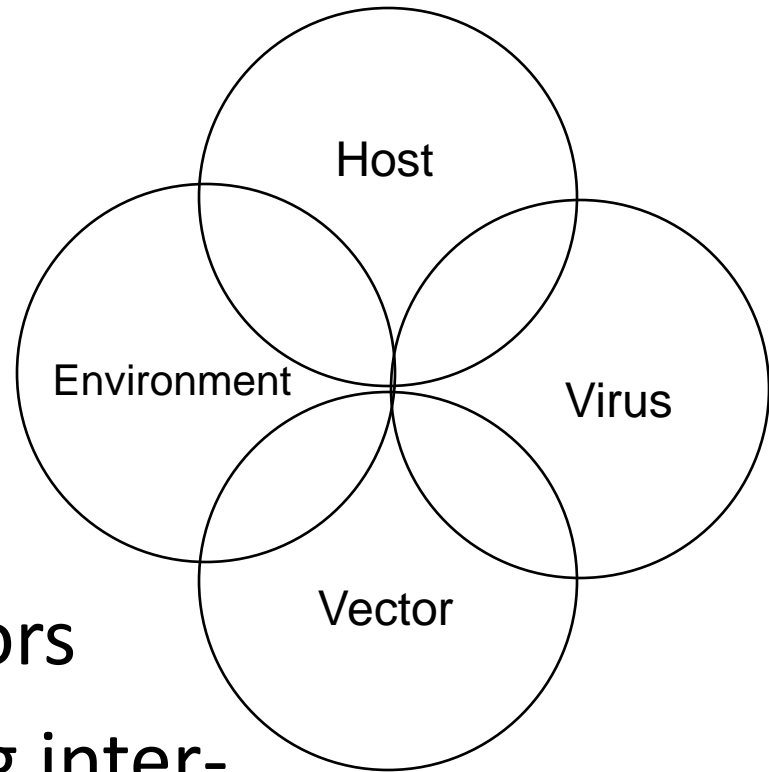
Dengue: a complex disease

Effective control needs

Good understanding of

- entomological
- human
- virological
- and environmental factors

Surveillance and control during inter-epidemic period

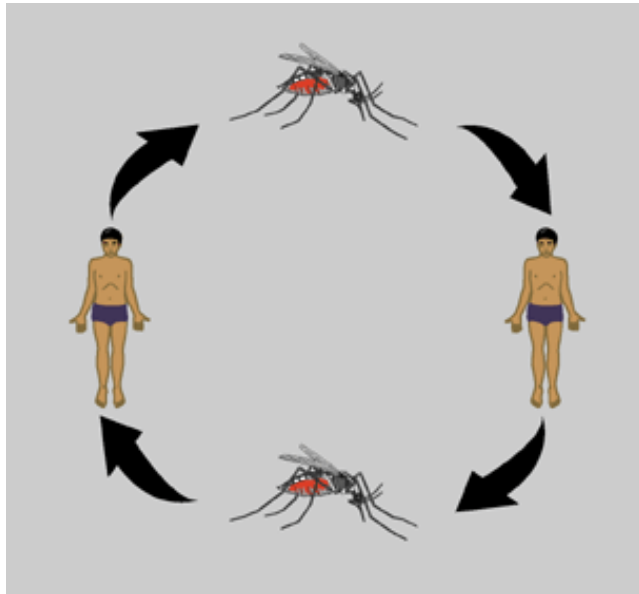


Dengue illness

- High morbidity, relatively low mortality disease
- **Dengue Fever** - sudden onset, high fever of 3-5 days, intense headache, myalgia, retro-orbital pain, anorexia, Gastro-Intestinal disturbances and rash – *self limiting*
- **Dengue Haemorrhagic Fever** - increased vascular permeability, hypovolaemia and abnormal blood clotting mechanisms – *death could follow if not supported*
- Wide spectrum of infection outcomes
Asymptomatic infection → Death

Vector

- *A. aegypti* – wide spread and well established in urban areas
- *A. albopictus* – becoming more important vector in rural settings (?)



Environmental Factors

- Seasonality – temperature, humidity, rainfall

Sri Lanka:

- South-western monsoons rains – first seasonal epidemic period
- North-eastern monsoon rains – second seasonal epidemic period

Countries /areas at risk of dengue transmission, 2006



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

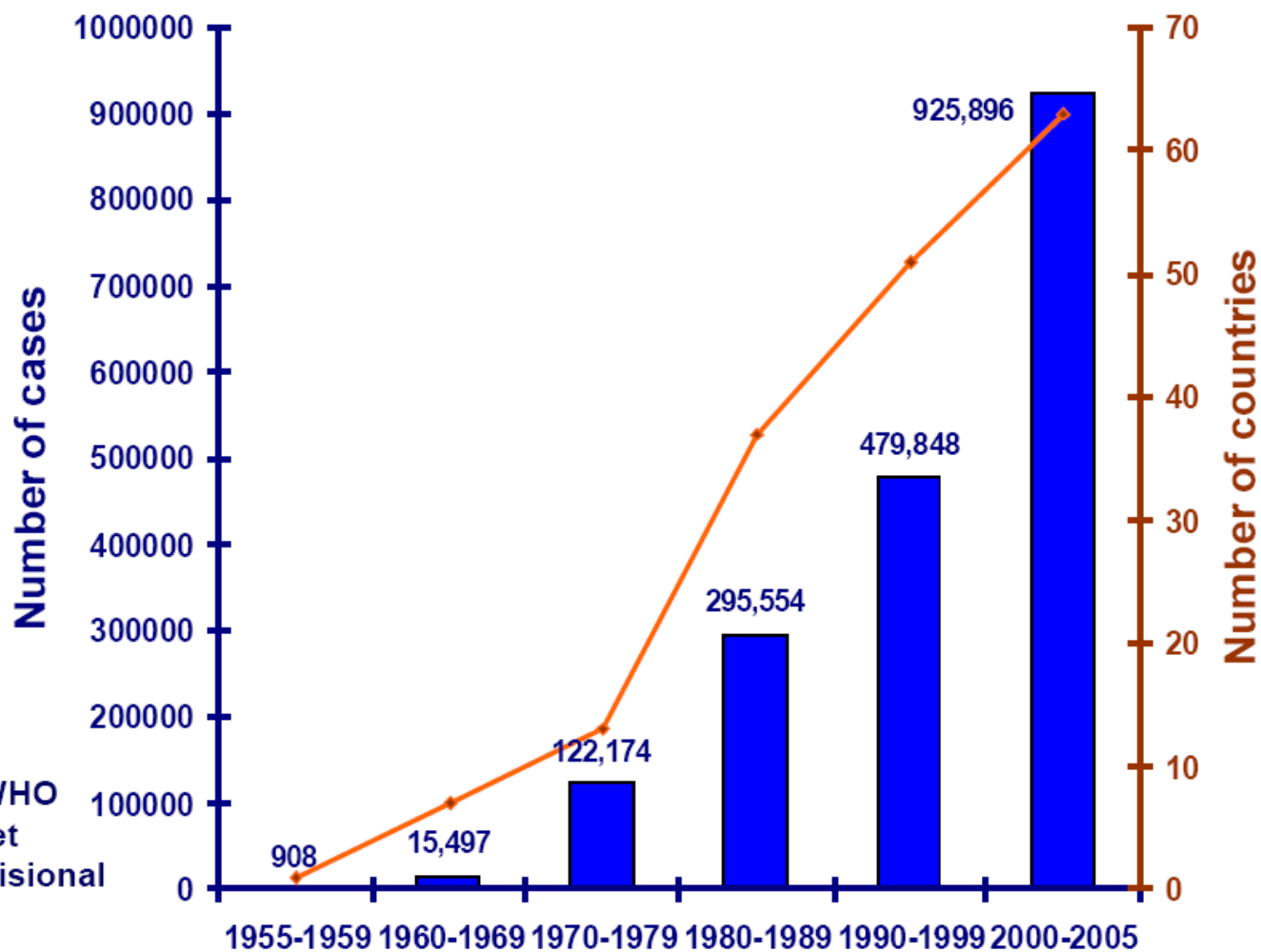
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Data Source: WHO

Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS) World Health Organization

WHO estimates that 40% of the world's population lives in Dengue endemic region, and that there are more than 50 million people stricken by Dengue each year

Global increase in cases and in number of countries affected



Source: WHO
DengueNet
2005 provisional
data

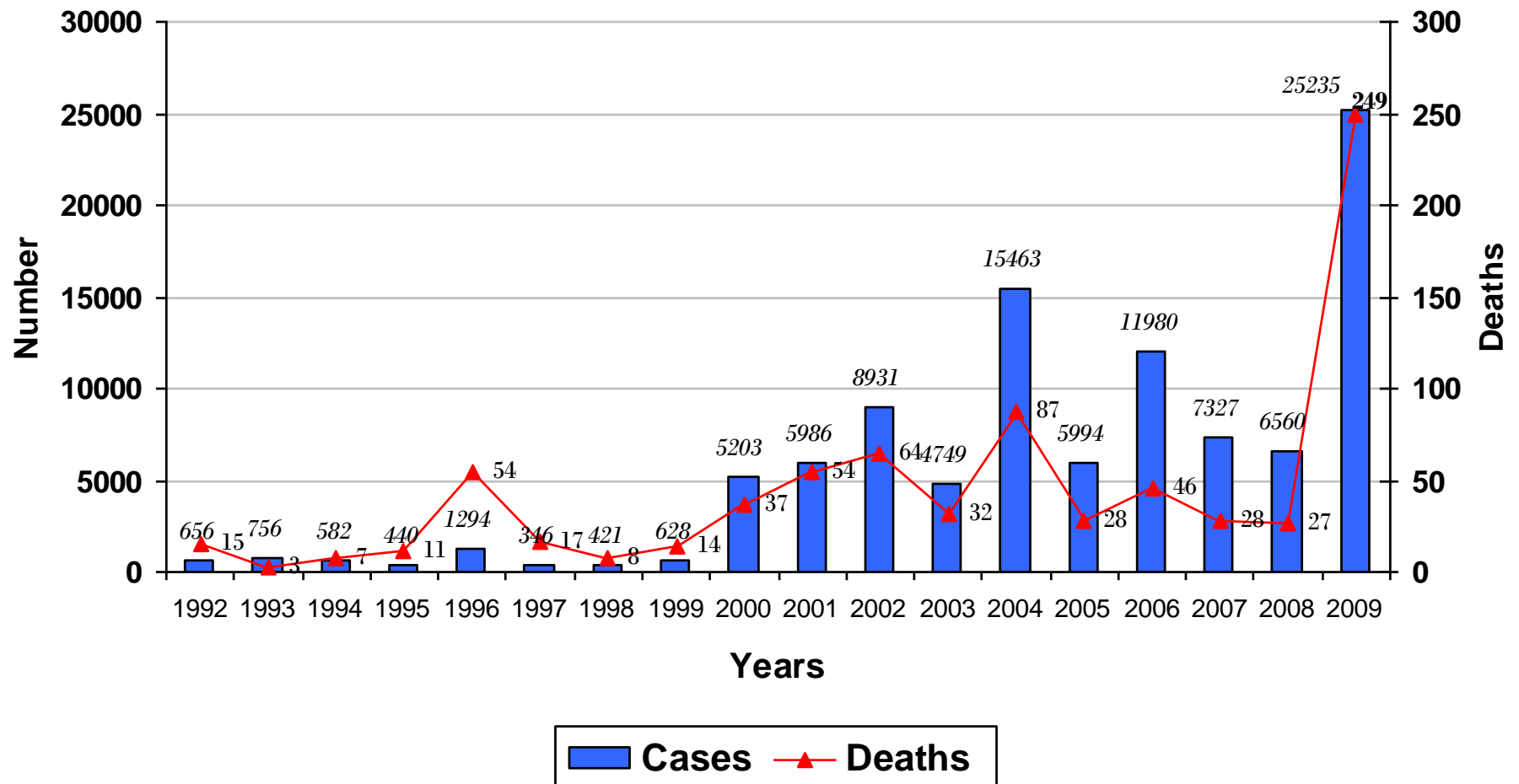
Global update - Sept 7, 2009

- Brazil – cases have tripled in 2009 compared to same period in 2008
- Puerto Rico – 150 new cases in past week; total for 2009 3256
- Pakistan (Karachi) – 500 suspected cases in 2009
- Thailand – shift in age distribution of dengue cases - decrease in birth and death rates

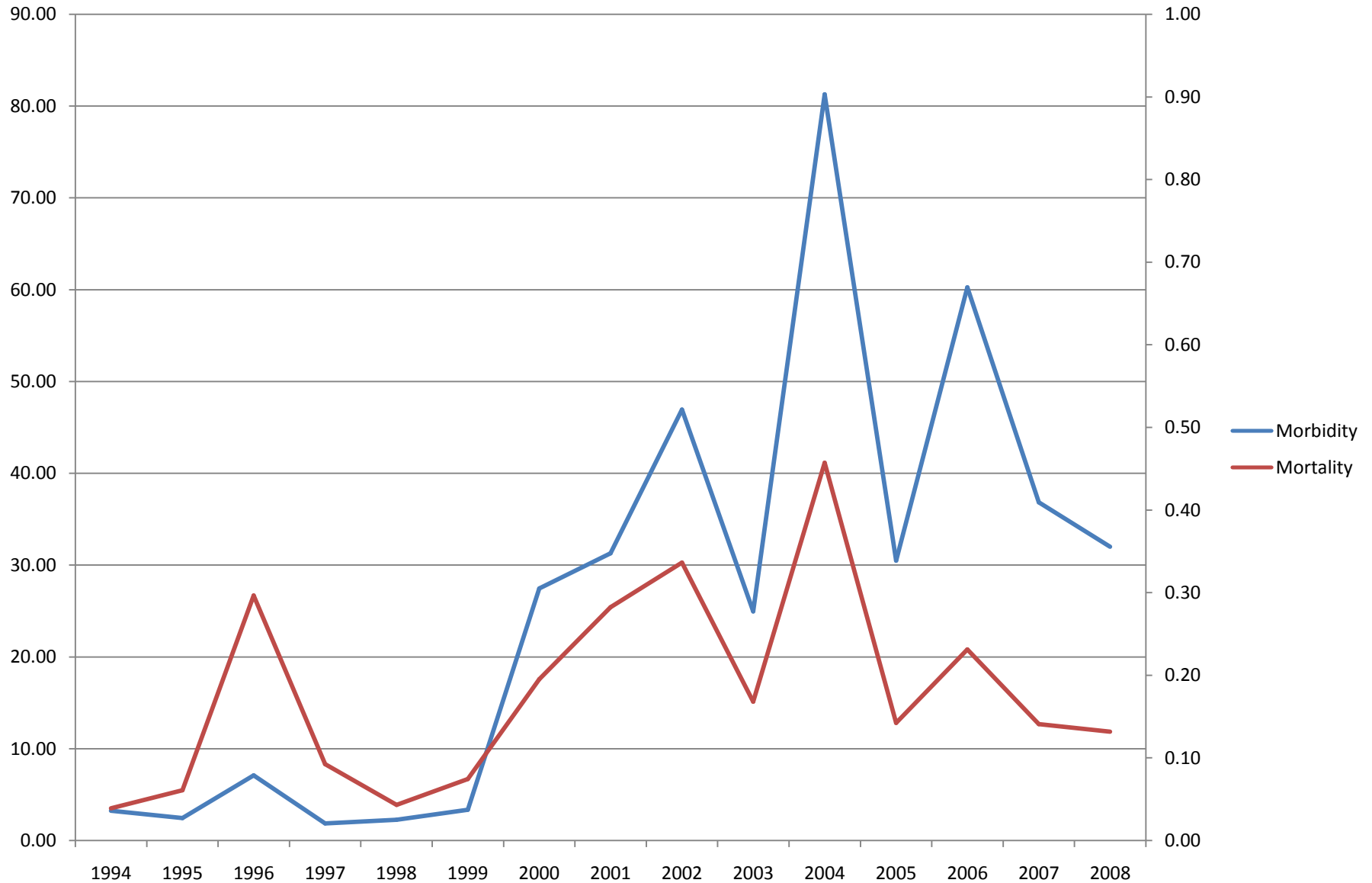
Dengue in Sri Lanka

- Serologically confirmed 1962; first outbreak 1965
- First major epidemic reported in 1989
- Endemic since 1989 with DHF involvement
- Became notifiable disease in 1996
- Since year 2000 approx. 5,000 cases reported annually
- Cyclical epidemics – 2002, 2004, 2006, 2009....

Dengue Trends in Sri Lanka

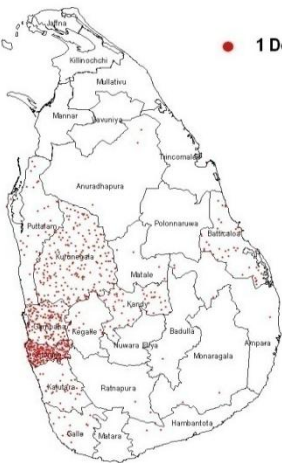


Morbidity & Mortality Rates, 1994 - 2008 (per '000 pop)



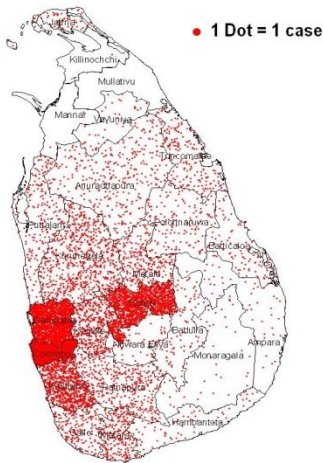
Temporal and Spatial Spread of Dengue Cases, Sri Lanka, 1996 - 2007

1996



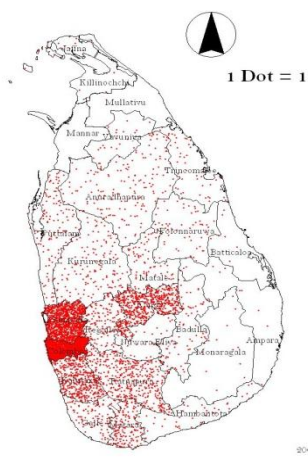
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2004



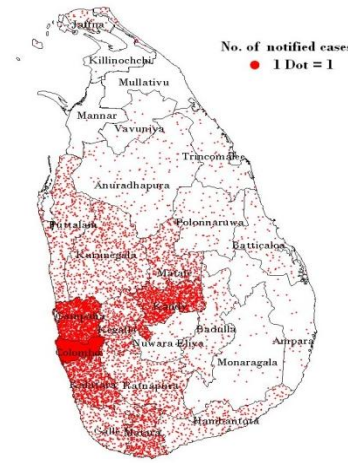
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2005



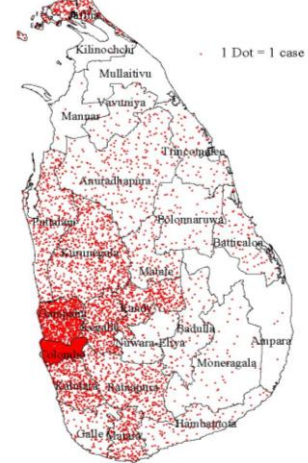
5994

2006



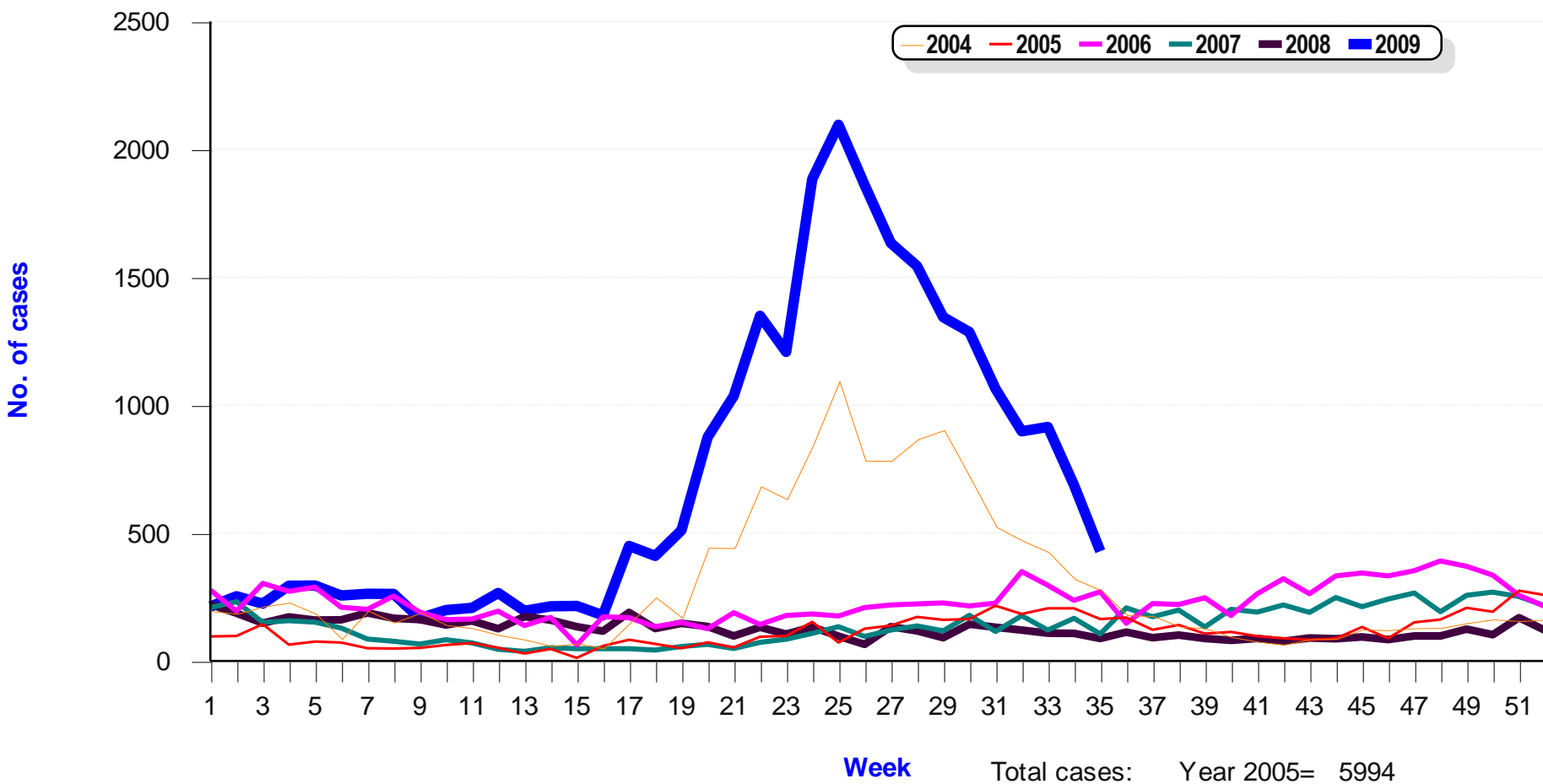
11980

2007



7327

Distribution of DF/DHF cases by weeks, Sri Lanka, 2004 -2009

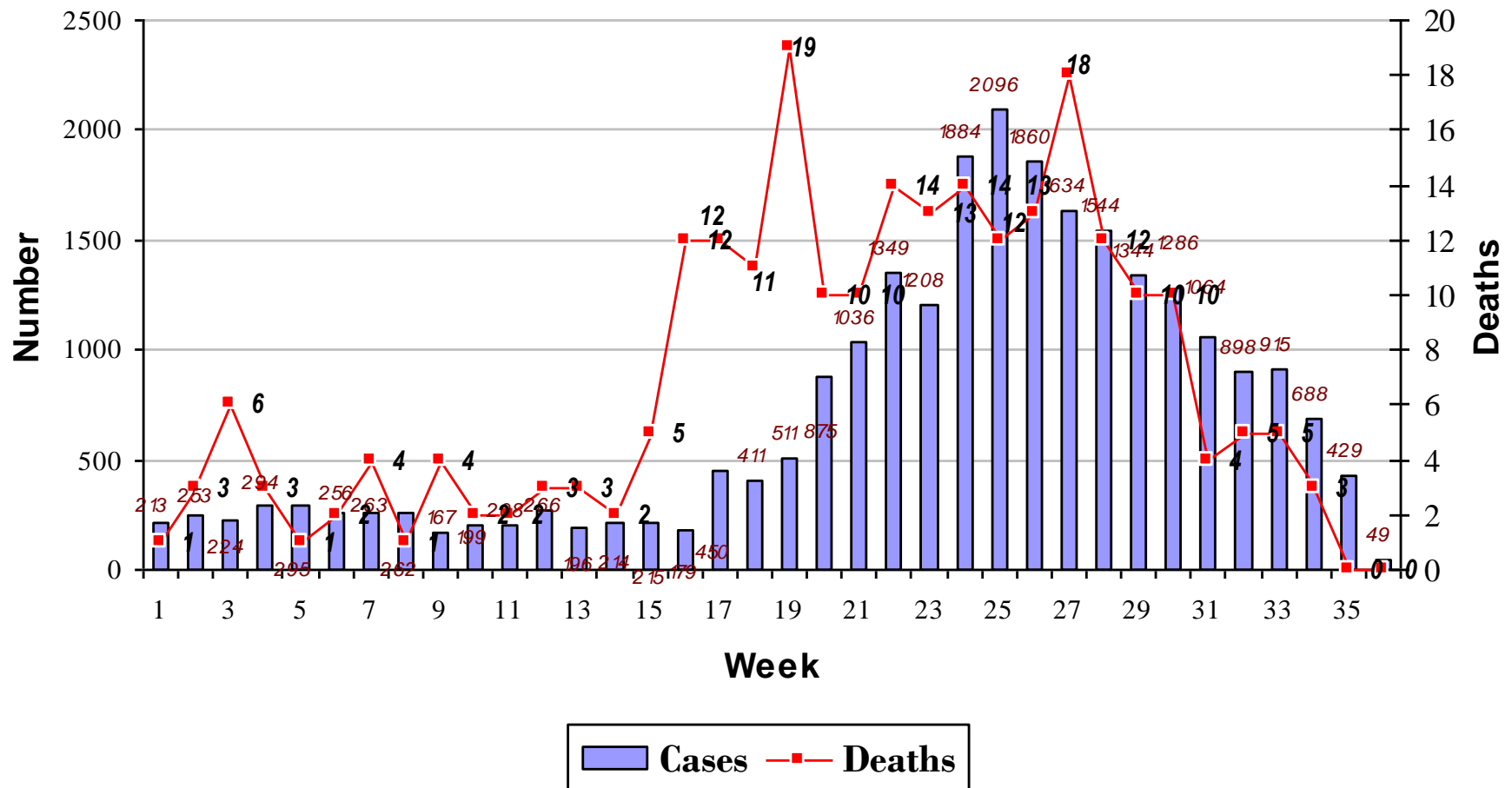


Source: Epidemiological Unit, Sri Lanka

Update date : 07/09/2009

Total cases:
 Year 2005= 5994
 Year 2006= 11980
 Year 2007= 7314
 Year 2008= 6555
 Year 2009= 25235

Distribution of cases by weeks – 2009



District	Cases	%	Deaths
Colombo	3292	13.0	30
Gampaha	3147	12.5	47
Kalutara	1270	5.0	12
Kandy	3448	13.7	36
Matale	1373	5.4	11
Nuwara-Eliya	212	0.8	3
Galle	467	1.9	5
Hambantota	767	3.0	16
Matara	965	3.8	6
Jaffna	12	0.0	0
Kilinochchi	0	0.0	0
Mannar	5	0.0	0
Vavuniya	19	0.1	1
Mullaitivu	0	0.0	0
Batticaloa	497	2.0	16
Ampara	207	0.8	0
Trincomalee	319	1.3	4
Kurunegala	2391	9.5	17
Puttalam	525	2.1	5
Anuradhapura	497	2.0	3
Polonnaruwa	138	0.5	0
Badulla	254	1.0	0
Moneragala	137	0.5	1
Ratnapura	1799	7.1	11
Kegalle	3333	13.2	22
Kalmunai	161	0.6	3
Total	25235	100.0	249

Dengue/DHF cases by District – 2009

Five Key Districts - 62%

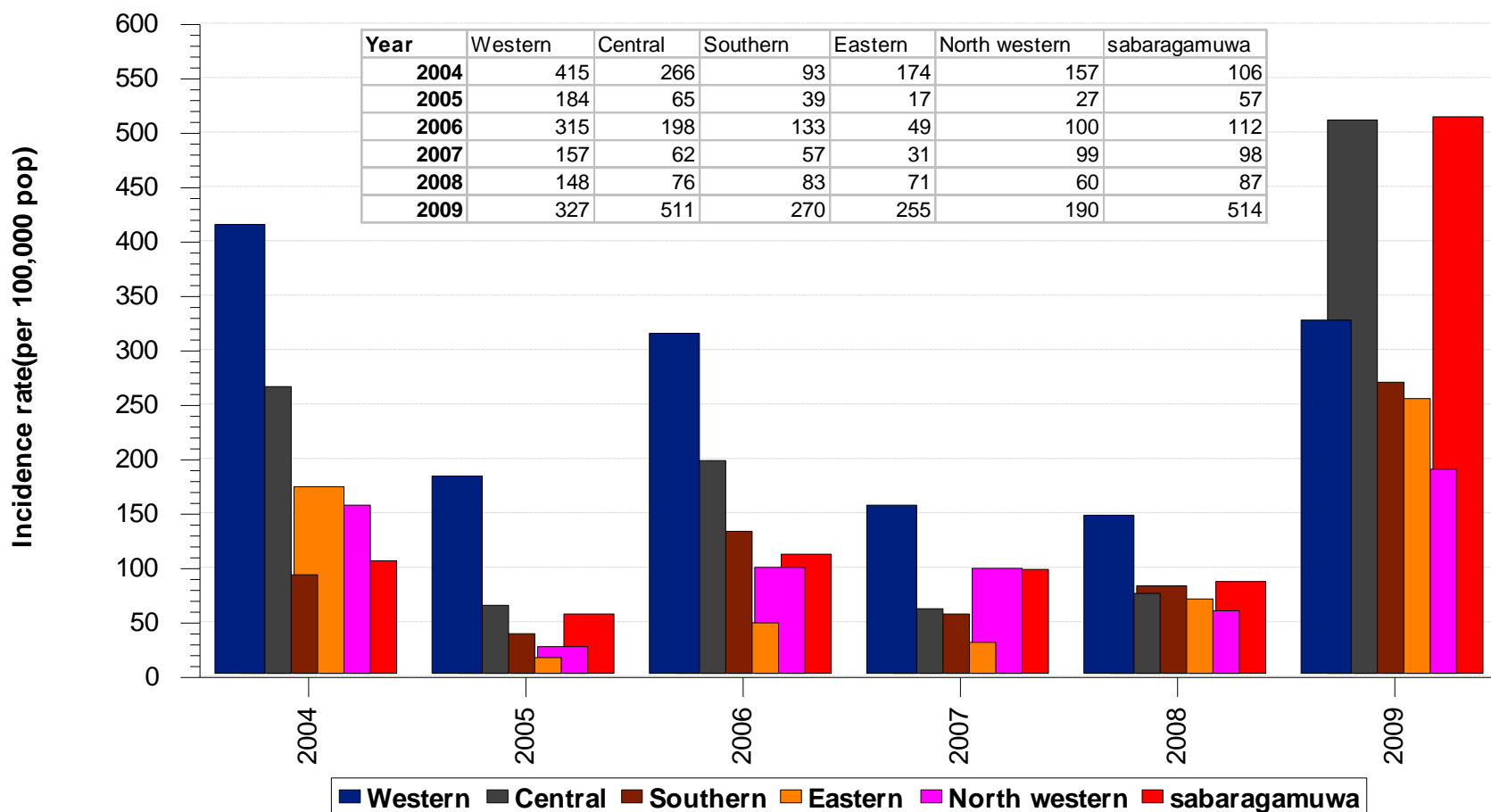
Rural spread

- Dengue: an urban disease?

Geographic spread

- Bulathkohupitiya in Kegalle district
- Ibbagamuwa in Kurunegala district
- Angunukolapellessa in Hambantota district

Incidence rate of reported dengue cases by province, 2004-2009 (per 100,000 population)



Source: f399 return , Epidemiological Unit

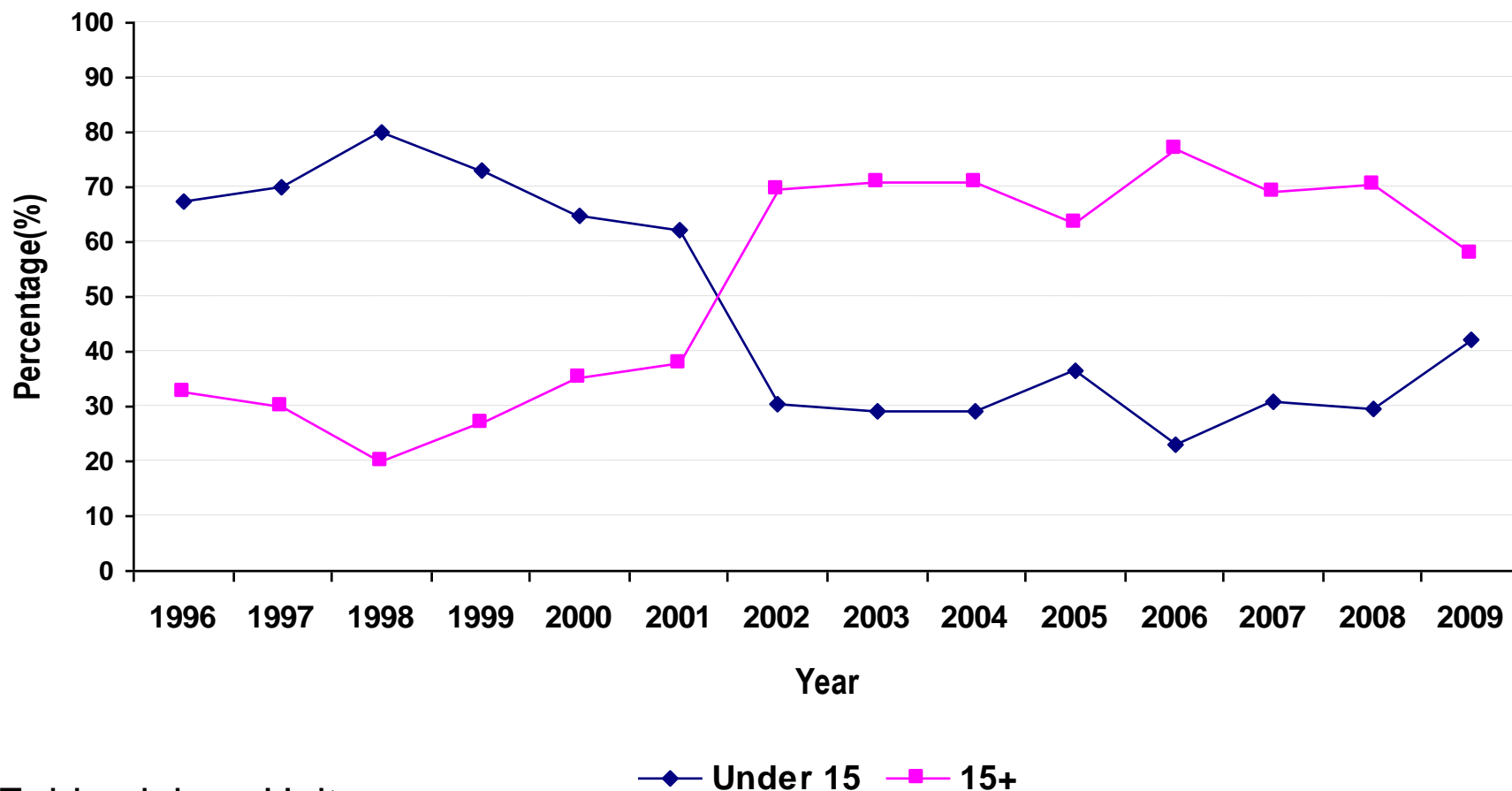
HIGH-RISK AREAS IDENTIFIED

DISTRICT	HIGH RISK MOH AREAS
Colombo	MC Colombo, Maharagama, Homagama, Kolonnawa, Dehiwala, Nugegoda, Piliyandala, Moratuwa, Kaduwela
Kandy	Akurana, Gangawatakorale, Harispattuwa, Kundasale, MC Kandy, Udunuwara, Wattegama, Yatinuwara, Gampola
Kalutara	Panadura, Horana, Bandaragama, Matugama
Gampaha	Kelaniya, Gampaha, Ja-Ela, Mahara, Wattala, MC-Negambo, Ragama, Attanagalle
Batticaloa	Batticaloa, Kattankudy, Eravur
Matara	MC Matara, Devinuwara, Dikwella
Trincomalee	Trincomalee, Kantale, Kinniya
Kurunegala	Kurunegala MC, Narammala, Polgahawela, Ibbagamuwa
Hambantota	Thangalle, Beliatta, Katuwana, Ambalantota, Walasmulla
Matale	Matale, MC Matale, Ukuwela, Galewela
Ratnapura	Embilipitiya, Eheliyagoda, Kuruwita, Pelmadulla, Ratnapura
Kegalle	Kegalle, Mawanella, Aranayake, Yatiyantota, Warakapola

Human cases

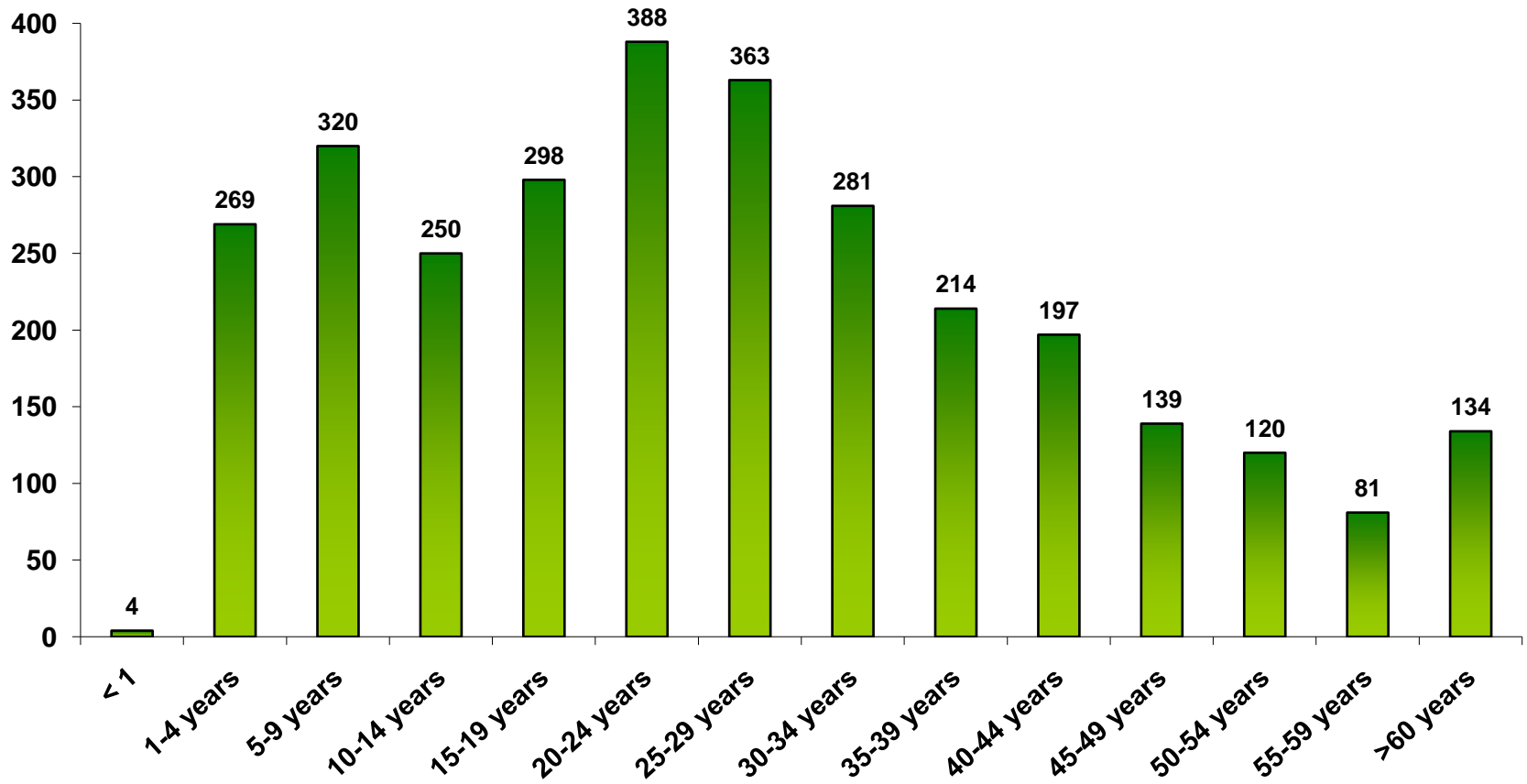
- Dengue: a childhood disease?
- Increasing age of infected persons

DF/DHF cases by age groups Sri Lanka, 1996 - 2009



Epidemiology Unit –
provisional data 2009

Distribution of Confirmed Dengue Cases By Age - 2008



3135 cases analysed

Age distribution of deaths -2009

Age group	Female	Male	N/A	Total	%
<5	18(62.07)	11(37.93)	0	29	11.65
5 - <15	37(57.81)	25(39.06)	2	64	25.70
15 - <25	16(61.54)	10(38.46)	0	26	10.44
25 - 50	40(51.28)	37(47.44)	1	78	31.33
>50	31(67.39)	15(32.61)	0	46	18.47
N/A	3(50.00)	1(16.67)	2	6	2.41
Total	145(58.23)	99(39.76)	5	249	100.00

60%

Virus*

Year	Total Tested	Total Positive	D1 (%)	D2 (%)	D3 (%)	D4 (%)	Negative	ND
2006	1795	287	20 (7)	121 (43)	126 (45)	14 (5)	02	04
2007	461	56	01 (2)	26 (55)	20 (43)	00	08	01
2008	305	33	00	16 (64)	09 (36)	00	02	06
2009	521	73	19 (28)	21 (31)	26 (38)	02 (3)	03	02

* Published in Weekly Epidemiological Report – pooled data

WHY DENGUE EPIDEMICS ARE BECOMING FREQUENT ?

- Increasing urban populations
- Expanding mosquito breeding due to:
 - Traditional water storage practices
 - Unreliable water supply
 - Poor Garbage disposal/collection (creates more mosquito breeding places)
 - Changing lifestyles

Challenges

- Northeast monsoon – possibility of further transmission during next 4 months
- Reducing fatalities due to more severe dengue infection – early healthcare seeking, early diagnosis, good patient management
- Risk communication – helps outbreak control through social mobilisation, minimize social turbulence, maintain public confidence in outbreak response efforts

Weekly update on dengue situation



WEEKLY EPIDEMIOLOGICAL REPORT

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