



**STANDARD OPERATING
PROCEDURES OF THE NATIONAL
DENGUE SURVEILLANCE SYSTEM :
CASE DEFINITION**

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HISTORY OF THE SOP DEVELOPMENT

- SOP developed between Nov 2007 and Sept 2009
- Regular meetings
- Involvement of 5 PHD: Takeo, Kampot, Kampong Cham, Battambang, Siem Reap



RATIONALE

- Aim of NDCP: To reduce morbidity and death by dengue
- Objectives: To strengthen epidemiology and dengue surveillance
- Recommendation from the 2005 evaluation: Need to develop surveillance guidelines
- NDCP follows this recommendation and develop an SOP finalized in April 2010



OVERVIEW OF SOP

Section I: Rationale for developing a system for dengue surveillance

1. Monograph of Dengue Viruses
2. Burden of Dengue Disease
3. National Dengue Control Program
4. National Dengue Surveillance System (NDSS)



OVERVIEW OF SOP

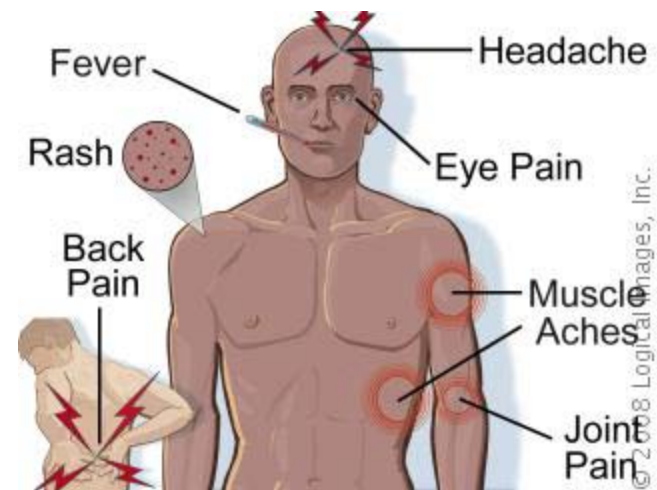
Section II: Standard Operating Procedure

1. Aim
2. Operation of the sentinel surveillance system
3. Sero-virological surveillance
4. Data analysis
5. Dissemination mechanism and use
6. Evaluation
7. Cost and other resources of surveillance



CASE DEFINITION: SUSPECTED DENGUE CASE

- Acute febrile illness of 2-7 days duration with **TWO OR MORE** of the following manifestations:
 - Headache
 - retro-orbital pain
 - muscle and joint pain,
 - rash,
 - haemorrhagic manifestations (positive tourniquet test, petechiae, ...etc.)



CASE DEFINITION: PROBABLE DENGUE CASE

Dengue Fever

Is an acute febrile illness with **two or more** of the following manifestations:

- Headache
- Retro-orbital pain
- Myalgia
- Arthralgia
- Rash
- Haemorrhagic manifestations
- Leucopenia

AND

- Supportive serology (e.g. high single HI titre) a posteriori **OR** case occurring at the same location and time as a laboratory confirmed case



CASE DEFINITION: PROBABLE DENGUE CASE

Dengue Haemorrhagic Fever

The following must all be present:

- Fever or history of acute fever lasting 2-7 days, occasionally biphasic
- Bleeding (haemorrhagic tendencies), evidenced by at least one of the following
 - o A positive Tourniquet Test (TT)
 - o Petechiae, ecchymosis or purpura
 - o Bleeding from the mucosa, gastrointestinal tract, injection sites or other locations
 - o Haematemesis or melena
- Thrombocytopaenia (100,000 cells per mm³ or less)
- Evidence of plasma leakage due to increased vascular permeability, manifested by at least one of the following:
 - o A rise in the haematocrit $\geq 20\%$ above average for age, sex and population
 - o A drop in the haematocrit following volume-replacement treatment $\leq 20\%$ of baseline signs of plasma leakage such as pleural effusion, ascites and hypoproteinaemia



CASE DEFINITION: PROBABLE DENGUE CASE

Dengue Shock Syndrom

- The 4 criteria for DHF must all be present plus evidence of circulatory failure manifested as:
 - Rapid and weak pulse
 - Narrow pulse pressure (< 20 mmHg)
- OR**
- Hypotension for age (systemic pressure <80mmHg for < 5yo or <90 mmHg for >5yo)
- Cold clammy skin and restlessness



SERO-VIROLOGIC SURVEILLANCE

5 cases per week of inpatients with clinical signs of dengue should be selected for paired serum specimen collection.

The first blood draw is performed on admission to the hospital and the second at the time of discharge.

For the Off-season (from week 37 until 24): this period, five suspected cases (if possible) should be recruited since the first day of week until the end-day of the week.

For the epidemic season, see the calendar of sampling

Period	Week #	Which day to collect the 5 first suspected cases?(check definition above)				
		Monday	Tuesday	Wed	Thursday	Friday-Saturday-Sunday
Off Season	1 to 24	5 first cases of the week (or less if not enough)				
Epidemic Season	25					Do not collect samples during the end of the week –blood specimens cannot be received at the week end at IPC
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
36						
Off season	37 to 52	5 first cases of the week (or less if not enough)				



BLOOD SAMPLE COLLECTION

- Whole blood specimens are collected and separated into serum by centrifugation. The blood volume is 3 ml for children < 5 years and 5 ml for children > 5 years
- A special form describing the clinical signs is attached to each sample sent to the lab.
- Each sample is given a specimen number with patient name, date and time of collection to make sure we can trace the patient.
- Samples are sent to IPC in liquid Nitrogen containers to ensure detection of the virus.



THANK YOU FOR YOUR ATTENTION

