

Arboviral Surveillance and Response Capacity Survey 2021

Section I: Respondent details

1. Country

Malaysia

2. Respondent/person to be contacted for clarification, if needed (last name, first name, e-mail address)

3. Professional title and affiliation

4. Date (dd/mm/yyyy)

29/6/2021

Section II: Arboviral disease surveillance system

5. Which arboviruses have circulated in your country at any time since the year 2000? This refers only to arboviruses with autochthonous i.e., local mosquito-borne transmission.

Chikungunya	Yes
Dengue	Yes
Zika	Yes
Other	Japanese Encephalitis

6. Do you have any written arbovirus surveillance and control plan(s) and/or guideline(s) for your country?

Yes, we have arbovirus-specific plans(s) or guidelines(s)

6b. For which of the following arboviruses do you have written surveillance and control plans for your country? Please choose all that apply.

Chikungunya	Yes
Dengue	Yes
Zika	Yes
Other	Japanese Encephalitis

6c. Please upload surveillance and control plan(s) or protocol(s), or guideline(s)

7. Is there a specific national programme for arboviral diseases surveillance or is it integrated in another programme? Please select the appropriate answer:

Integrated in another programme

7b. Please specify the programme into which arboviral diseases is integrated

eNotifikasi

8. For which level of the health structure are individual and aggregated data available? (Select all relevant levels)

	Individual level	Aggregated
Primary health care level	Yes	No
District level	Yes	No
Regional level	Yes	No
National level	Yes	No

9. What are the tools used for recording case data for surveillance purposes? Select all that apply

National	Électronic
State/provincial	Électronic
District	Électronic

10. Which training has been provided to the staff working on arboviral disease surveillance data?

Repeated/continuing basic training on data capture, analysis, and/or GIS	Yes
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11. Is reporting mandatory for any arboviral disease cases in your country?

Yes

11b. For which of the following arboviral disease cases is reporting mandatory in your country?

Chikungunya	Mandatory reporting of confirmed cases only
Dengue	Mandatory reporting of all suspect cases
Yellow fever	Mandatory reporting of all suspect cases
Zika (non-congenital)	Mandatory reporting of all suspect cases
Zika (congenital)	Mandatory reporting of all suspect cases
Other	Mandatory reporting of confirmed cases only

11c. For which other arboviral diseases is reporting mandatory?

1	Japanese encephalitis	Confirmed cases only
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11d. Please upload document(s) containing surveillance case definitions used for reporting of arboviral diseases

1 file(s) submitted

12. In the last 2 years, did your country conduct national epidemiological surveillance for human cases of arboviral disease?

Yes

12b. How frequently are surveillance data reported to the national level?

within 24 hours from diagnosis

12c. What type of national epidemiological surveillance was conducted?

Combination of active and passive

For reference, here are the relevant definitions:

Active surveillance is defined as having dedicated systems and staff that routinely and with effort survey for cases of disease or detection of vectors and associated pathogens by the public health department.

Passive surveillance is defined as having a reporting system where physicians, laboratories, mosquito control districts, academic institutions or others routinely report cases of disease or detection of vectors and associated pathogens to the public health department.

12d. If available, please upload the most recent report(s) on arboviral surveillance in humans

13. Does your country provide regular training sessions for healthcare workers on notification of *Aedes*-borne arboviral diseases?

Yes : on the job training; in person seminar, online during COVID-19 Pandemic

14. What do the arboviral disease surveillance staff perceive as factors contributing to the a) success and b) barriers/challenges to arboviral disease surveillance in humans?

- a. success strong clinical suspicion
- b. challenges limited internet connection in the remote areas

Section III: Arbovirus laboratory capacity

15. Is arbovirus diagnostic laboratory testing performed for confirmation of suspected cases in your country? (Please select the applicable option during outbreak periods and during non-outbreak periods, respectively)

Outbreak periods	All suspect cases tested
Non-outbreak periods	All suspect cases tested

15b. On average, for what percentage of suspected arboviral disease cases your country is laboratory confirmatory testing performed? Please indicate for outbreak and non-outbreak periods, respectively

Non-outbreak (routine) percentage in a year	90
During outbreaks percentage per identified cluster	100

16. In the last two years, were the positive cases of arboviruses confirmed by a national reference laboratory?

Yes, for all arboviral infections. Please specify them:

NA

16b. If your country does not have capacity to type and serotype arboviruses, do you send samples for typing to other countries?

No

17. Overall, what arboviral testing capacity(ies) is(are) available in your country? Please check all applicable boxes

	Antigen testing	IgM antibody testing	IgG antibody testing	Neutralizing antibody testing	Virus isolation	RT-PCR or other nucleic acid amplification test	Viral gene/genome Sequencing
Chikungunya	No	Yes	Yes	No	No	Yes	No
Dengue	Yes	Yes	Yes	No	No	Yes	No
Yellow fever	No	No	No	No	No	Yes	No
Zika	No	No	No	No	No	Yes	No
Other	No	Yes	Yes	No	No	Yes	No

18. Which additional resources are most needed for your country to perform adequate testing for arboviral diseases? Please describe what would be needed for each checked resource in the adjacent comment field

Additional laboratory equipment, reagents, etc.: PCR Machines, RDT kits for ZIKV and JEV

19. Do you perform virological surveillance on humans, ie, tracking of prevailing genotypes/serotypes? Please select all that apply

Yes, using RT-PCR: CHIKV, DENV, ZIKV, YFV, JEV

19b. Which samples do you use for virological surveillance?

Samples from suspected arboviral diseases routinely notified	Yes
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19c. For which viruses do you perform virological surveillance? (check all that apply)

Chikungunya virus	Yes
Dengue viruses	Yes
Zika virus	Yes
Other	JEV

19d. Does your country provide regular training sessions for healthcare workers on arboviruses virological surveillance?

Yes

20. What do the arboviral diagnostic laboratory staff perceive as factors contributing to the a) success and b) barriers/challenges with respect to laboratory testing for arboviral infections?

- a. success availability of POCT kits
- b. challenges atypical clinical presentation (e.g. JE)

Section IV: Management of arboviral disease cases

21. Does your country have clinical guidelines for healthcare workers on diagnosis and clinical management of cases and severe cases of *Aedes*-borne arboviral diseases?

Yes

21b. Please upload the clinical guideline(s) for arboviral disease management

1 file(s) submitted

22. Are severe cases of arboviral diseases managed in a special area (part of the hospital, isolation beds)?

Yes

23. How many hospital beds are available per 100,000 population?

200

24. Does your country provide regular training sessions for healthcare workers on clinical diagnosis and management of *Aedes*-borne arboviral diseases?

Yes, specific training is provided. If so, please specify:

once or twice a year; in person seminar, online during COVID-19 Pandemic

25. What do the arboviral disease surveillance/clinical staff perceive as factors contributing to the a) success and b) barriers/challenges with respect to case management?

- a. success availability of Clinical Practice Guidelines, regular trainings & clinical audits
- b. Challenges High disease burden (e.g. Dengue Fever)

Section V: Routine vector surveillance and control

26. Is there a disease programme, agency, or service in charge of arbovirus vector surveillance in your country?

Yes. If so, please specify in the comment field.

- Vector Borne Disease Control Program
- Lab surveillance of Arboviruses (by IMR)

27. Which institution/department is in charge of reporting entomologic surveillance data to the national ministry of health/health department? (Check all that apply)

State/provincial health agencies	Yes
City/country health departments	Yes
Local mosquito control districts or similar organisations	Yes

28. For the last 2 years, did your country conduct entomologic surveillance for arboviral infections in mosquito vectors?

Yes

28b. Please upload the most recent national vector surveillance report

1 file(s) submitted

28c. Did the entomologic surveillance entail country wide programmes or was it restricted to specific locations?

Country wide

28d. How many sentinel surveillance sites do you have?

5

28e. How often was the surveillance conducted? Please choose one of the following:

once a month

29. Do you conduct adult mosquito surveillance?

Yes

30. Do you conduct larval/pupal mosquito surveillance?

Yes

31. Are trapped mosquitoes identified to species?

Yes

32. Does your country either calculate minimum infection rates (MIR) for any *Aedes*-borne arboviruses with your mosquito data or receive such data from other agencies? Please choose only one of the following:

No

33. Which laboratories performed testing for arboviruses on mosquito pools collected in your country in the last two years? (check all that apply)

National public health laboratory	Yes
University or academic institution	Yes
Other	Institute of Medical Research (IMR)

34. Is there a record of *Aedes aegypti* or *Aedes albopictus* being found in your country in the past 5 years? Please choose only one of the following

Yes, both *Aedes aegypti* and *Aedes albopictus*

34b. Please describe the potential public health threat from *Aedes aegypti* in your country

Aedes aegypti populations are stable in select areas and pose a significant threat

34c. Please describe the potential public health threat from *Aedes albopictus* in your country

Aedes albopictus populations are abundant and arbovirus(es) is (are) circulating

35. Over the past two years, did your country use any of the following vector control methods in local jurisdictions (either using government staff and resources, or subcontracting to a different entity to do so)? Please select all that apply

Adulticiding (insecticide application against adult mosquitoes)	Yes
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35b. Would your country have conducted or financially supported adulticiding/larviciding or source reduction activities in the last two years if sufficient funding were available?

35c. Which adulticides and/or larvicides (brand and product name) were used?

adulticides: actellic, endmosq, acpidor

Larvicides: temephos (abate 1.1G), vectobac mg

36. Does your country provide regular training sessions for staff in charge of vector control and vector surveillance?

Yes, for both

37. For the last two years, did your country have a plan for mosquito-borne disease control that includes a threshold (eg, level of vector mosquito abundance or minimum infection rate) that would result in a recommendation for mosquito adulticiding/other mosquito reduction measures?)

Yes, have a threshold that does not require concurrent human cases

37b. Which indicator(s) is(are) used as threshold(s)?

Vector density	Yes
Breteau Index	Yes
House Index	Yes
Container Index	Yes
Other	Ovitrap Index

38. Overall, are data on any of the following arboviral outbreak risk factors routinely collected and analysed? (Select all that apply)

House Index	Yes
Breteau Index	Yes
Container Index	Yes

39. Is there a surveillance system in place for monitoring *Aedes* resistance to the insecticide(s) used?

Yes

40. What do the vector surveillance staff perceive as factors contributing to the a) success and b) barriers/challenges with respect to vector surveillance and control in the country?

a. success: availability of vector surveillance teams

b.challenges: shortage of human resources

Section VI: Animal surveillance

41. During the last 2 years, did your country conduct national epidemiological surveillance for arboviral disease in animals (eg, epizootic surveillance for yellow fever in endemic areas)?

No

41b. How often was the animal surveillance conducted?

41c. What type of surveillance was conducted in animals?

41d. Please upload a report on the animal surveillance

42. Does your country (or local jurisdictions within the country) perform sentinel animal surveillance or epizootic surveillance, eg, for yellow fever in nonhuman primates in endemic regions?

No

42b. For which viruses is sentinel surveillance conducted and in which animal species?

42c. Please upload the most recent report(s) on sentinel animal surveillance

Section VII: Community sensitization and participation

43. Does your country have a community outreach program that also covers arboviral diseases?

Yes

43b. What entity(ies) is(are) in charge of the outreach program in your country?

Health Education and Communication Centre (HECC), MoH Malaysia

43c. What is the geographical coverage of the outreach program in your country?

Countrywide

43d. Is the community outreach/social mobilization program sufficiently funded to cover staff time, prevention and outreach activities as needed?

Yes

43e. Which resources would help ensure adequate capacity?

Educational materials for the public	Yes
Educational and reference materials for providers	Yes
Educational and reference materials for local health departments	Yes
Additional staff	Yes
Staff training	Yes

44. Did your national arboviral disease program issue notifications to the public about local transmission risk and/or possible vector-control activities (eg larviciding, adulticiding, community mobilization and participation, etc) as a prevention message for arboviral diseases within last 2 years? (Check all that apply)

	During outbreaks	During non-outbreak periods
Issued by national public health agency	Yes	Yes
Issued by state/local health agencies	Yes	Yes
No risk in the past two years	No	No
No notifications even though risk was present	No	No

44b. Which means does your program use for community sensitization, mobilization and acceptance of interventions in your country? (Check all that apply)

Press releases to electronic and printed media	Yes
Public service announcements on television or radio	Yes
Passive distribution of informational brochures	Yes
Active distribution of informational brochures	Yes
Town, community, or neighborhood meetings	Yes
Posting information on the home page of your agency's website	Yes
Social media outlets (Facebook, Twitter, etc)	Yes
Door-to-door outreach in selected locations	Yes
Participation in community clean-ups	Yes
Modification of messages for all local languages	Yes
Other	online data sharing for public (iDengue)

45. Does your country provide regular training sessions for staff in charge of community sensitization, mobilisation and acceptance of interventions dedicated to control arboviral diseases?

Yes. If yes, please describe in comments field:

in person seminar, online during COVID-19 Pandemic

46. What do the community outreach staff perceive as factors contributing to the a) success and b) barriers/challenges with respect to community participation

a. success appropriate platform for information dissemination, eg. social media

b. community uptake of health messages

Section VIII: Preparedness for arboviral outbreaks/epidemics

47. Is there either a surveillance and outbreak response committee in your country, or a steering committee for that purpose?

Yes

48. Does your country have a contingency plan to organize healthcare services during an outbreak (including outbreaks of arboviral diseases)?

Yes

48b. Please upload the contingency plan

1 file(s) submitted

49. Are there defined or established criteria for declaring an outbreak of arboviral disease outbreak in your country?

Yes. If so, in the comments field, please briefly describe the criteria or reference the document in which those are sta

two or more cases of Arboviruses in a locality within two weeks

50. Do you have established collaborations with national/regional research institutions / international agencies that are planned to be activated in case of arboviral outbreak?

Yes. If so, please specify institutions/agencies in the comments field:

Malaysia's Institute of Medical Research (IMR), National Public Health Laboratory, NPRL, VRI

51. What vector control interventions are deployed in case of an emergency?

Adulticiding, Larviciding, Mass Source Reduction Campaign

52. For the last 2 years, which of the following government levels had an emergency fund or a specified emergency funding mechanism for arbovirus outbreak response?

National level	Yes
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53. Does your country provide regular training sessions for staff/committee in charge of preparedness for arboviral outbreaks/epidemics?

Yes

54. What do the arboviral disease surveillance staff perceive as factors contributing to the a) success and b) barriers/challenges with respect to preparedness of arboviral diseases epidemics in your country?

- a. success Strong Surveillance System for Arboviruses (including Lab-based Surveillance) Strong National Program for Control of Arboviruses
- b. Challenges High disease burden Unavailability of POCT kits for certain Arboviruses

Section IX: Arboviral disease surveillance data

55. Please provide total number of cases and deaths for the following arboviral diseases from 2015 to 2020 (if available).

	Dengue	Chikungunya	Yellow fever	Zika
2015 Cases	120836	3	0	0
2015 Deaths	36	NA	0	0
2016 Cases	101357	12	0	8
2016 Deaths	237	0	0	0
2017 Cases	9	270	0	0
2017 Deaths	177	0	0	0
2018 Cases	80615	87	0	0
2018 Deaths	147	0	0	0
2019 Cases	130101	990	0	0
2019 Deaths	182	0	0	0
2020 Cases	90304	2601	0	0
2020 Deaths	145	0	0	0

(NA = Not Available)

55b. Were cases of other mosquito-borne arboviruses, not listed in the previous question, reported in your country from 2015-2020?

55c. Please select any of the following other mosquito-borne viruses that have been reported in your country from 2015-2020

55d. Please provide total number of cases and deaths due to each of the following other arboviruses that you selected from 2015-2020

56. Please provide the number of cases of locally acquired, mosquito-borne *Aedes*-borne arbovirus infections by case classification for 2020 and, if not available, for 2019

	Suspect cases	Probable cases	Confirmed cases	Deaths
Chikungunya	NA	7091	2601	0
Dengue	NA	236285	90304	145
Yellow Fever	NA	0	0	0
Zika	NA	0	0	0

57. Do arbovirus surveillance staff have any perceived reasons for increasing trends in arboviral disease incidence? Check all answers that apply.

Climate change (as evidenced by changes in meteorological data)	Yes
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Section X: Surveillance staffing

58. During 2019 (prior to the Covid-19 pandemic), indicate below the number of arbovirus surveillance staff at the national level.

	Number of personnel
Clinicians	2
Epidemiologists	10
Laboratorians	40
Entomologists/ vector control specialists	10
Support staff (administration; logistics; other)	15

59. Indicate below how many total staff persons are needed at the national level in your country to achieve full epidemiology and laboratory capacity* to conduct arbovirus surveillance.

	Number of personnel
Clinicians	2
Epidemiologists	10
Laboratorians	40
Entomologists/vector control specialists	10
Support staff (administration; logistics; other)	15

60. Optional comments to explain responses to questions 58 and 59 above

61. The national health authority/ministry of health has access to expertise in clinical management of arboviruses (Check all that apply)

Within the ministry of health (eg, public health medical officers, clinicians in state hospitals)	Yes
Through other national agency with regulatory authority	Yes
Through academic institution(s)	Yes

62. The national health authority/ministry of health has access to expertise in arbovirus epidemiology (Check all that apply)

Within the ministry of health	Yes
Through other national agency with regulatory authority	Yes
Through academic institution(s)	Yes

63. The national health authority/ministry of health has access to expertise in arbovirus laboratory diagnosis (Check all that apply)

Within the ministry of health (e.g., public health laboratory scientists)	Yes
Through other national agency with regulatory authority	Yes
Through academic institution(s)	Yes

64. The national health authority/ministry of health has access to expertise in entomology (Check all that apply)

Within the ministry of health	Yes
Through other national agency with regulatory authority	Yes
Through academic institution(s)	Yes

65. Optional comments to explain responses to any of Questions 61-64

Section XI: Survey conclusion

66. If you have any further comments to add regarding arbovirus surveillance and control in your country, including whether arboviruses other than *Aedes*-borne arboviruses are of higher priority, please do so in the text field below

Due to large file size, the Surveillance System Guidelines could not be attached herewith. However, the guidelines could be accessed at: <https://dokumen.tips/documents/manual-enotifikasi-versi-baru.html>