Health Information Regarding
Zika Virus Disease
FREQUENTLY ASKED QUESTIONS ON ZIKA VIRUS DISEASE

Last updated 31 Aug 2016

1 What is Zika?
Zika virus disease is caused by the Zika virus (first identified in 1947), which is spread to people primarily through the bite of an infected mosquito (Aedes aegypti and Aedes albopictus). The infected person may usually show mild symptoms lasting up to a week, and many people (up to 80% of infected individuals) do not have symptoms. However, Zika virus infection during pregnancy can cause a serious birth defect called microcephaly and other severe brain defects.

2 How do people get infected with Zika?
Zika virus is primarily transmitted to people through the bite of an infected Aedes mosquito, which also transmits chikungunya, dengue and yellow fever. A pregnant woman infected with zika can pass the virus to her fetus during pregnancy or around the time of birth. Also, an infected person can pass the virus to his or her partners through sexual contact.

3 What are the symptoms of zika virus disease?
Zika virus usually causes mild illness. Symptoms most commonly include a mild fever or rash, appearing a few days after a person is bitten by an infected mosquito. Although many will not develop any symptoms at all, others may also suffer from conjunctivitis (red eye), muscle and joint pain, headache and feel tired. The symptoms usually last from 2 to 7 days. There is no known difference in the symptoms of infected pregnant and non-pregnant women.
4  **What serious health problems can result from getting Zika?**
Many people infected with Zika will have no symptoms or mild symptoms that last several days to a week. However, Zika infection during pregnancy can cause a serious birth defect called microcephaly and other severe fetal brain defects. Current research suggests that Guillain-Barre syndrome (GBS), an uncommon sickness of the nervous system, is strongly associated with Zika; however, only a small proportion of people with recent Zika virus infection get GBS.

5  **How can people prevent Zika?**
The best way to prevent Zika is to protect yourself and your family from mosquito bites as it is primary mode of transmission. Women who are pregnant or planning to become pregnant and their sexual partners should take extra care to protect themselves from the bite of mosquitoes that transmit Zika.

- Wear long-sleeved shirts and long pants
- Sleep under a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.
- Use registered repellents according to label instruction.
- Environmental cleanliness is important by taking preventive measures against mosquito breeding sites such as identifying and eliminating potential mosquito breeding sites, by emptying, cleaning or covering containers that can hold even small amounts of water, such as plastic containers, buckets, flower pots and tyres.
- Construction sites are known hotspots for mosquito breeding therefore extra care should be taken by construction workers and construction sites.

6  **How is Zika diagnosed?**
It is recommended to consult with your doctor to diagnose Zika if you are symptomatic and having recent travel to one of the affected countries. Your doctor will ask you about recent travel and symptoms you may have, and collect blood or urine to test for Zika or similar viruses, if appropriate.

7  **How can Zika virus disease be treated?**
Currently, there is no specific treatment or vaccine for Zika virus. The symptoms of Zika virus disease can be treated with supportive treatment such as common pain and fever medicines, rest and plenty of water. If symptoms worsen, people should seek medical advice.
8  What should I do if I am travelling to Zika-affected area?

Travelers should stay informed about updated list of countries affected by Zika virus, and consult their local health or travel authorities if they are concerned.

During your trip, follow personal protective measures to prevent mosquito bites such as wearing long covered clothing, applying insect-repellent, and sleeping under mosquito nets or in rooms with air conditioning or screens. They should seek medical attention promptly if they become unwell.

Even if you do not feel sick, you should also protect yourself from mosquito bites till 3 weeks after returning from the trip in order to prevent infecting mosquitoes that could spread the virus to other people.

If you feel sick after your return from your trip, please consult with your doctor or health centre to find out if you need to be tested for the Zika virus.

You should adopt safer sexual practices, e.g. consistent and correct use of condoms during sex, or consider abstinence for at least eight weeks after your return. However, if you are a male partner of a pregnant woman you should practice safer sex practices throughout her pregnancy.

Pregnant women are advised to speak to their doctor prior to travel to areas of ongoing Zika virus transmission; pregnant women whose sexual partners live in or travel to areas with Zika virus transmission should ensure safer sexual practices or abstain from sex for 6 months after his return from an affected country.

9  Which countries are currently affected?

As of 25 August 2016, 70 countries and territories have reported evidence of mosquito-borne Zika virus transmission since 2007. 53 of these countries and territories have reported evidence of mosquito-borne Zika virus transmission since 2015. Brazil has reported the largest number of cases, estimated at over 1 million infections in 2015.

Sporadic cases of local Zika virus infection have been detected in several countries in Southeast Asia, including Cambodia, Indonesia, Philippines, Malaysia, Vietnam, Lao People’s Democratic Republic and Thailand previously.
As of 31 August 2016, Singapore reported 86 locally transmitted cases of Zika virus. Please check the WHO website (http://www.who.int/emergencies/zika-virus/situation-report/18-august-2016/en/) for the updated list of affected areas.

10 What should pregnant women who have to travel or have recently traveled to an area with Zika do?
If travel to an area with Zika during pregnancy is essential, it is important to prevent mosquito bites, and follow recommended precautions against getting Zika through sex.
If they must travel to affected areas, they should seek advice from their doctor and undertake strict precautions against mosquito bites. If they are unwell, they should seek medical attention immediately.
They should consult their doctor after return to Brunei for advice.
Pregnant women who have recently traveled to an area with Zika should talk to their doctor about their travel, even if they do not feel sick. Pregnant women should see a doctor if they have any Zika symptoms during their trip or within 2 weeks after traveling.

11 Can mothers with Zika infection breastfeed their baby?
Zika virus has been detected in breast milk but there is currently no evidence that the virus is transmitted to babies through breastfeeding. WHO recommends exclusive breastfeeding for the first 6 months of life.

12 How is the Ministry of Health preparing for the possible occurrence of Zika in Brunei?
The Ministry of Health continues to strengthen our capacity to prevent, detect and control Zika virus infections in Brunei Darussalam.

Prevention of Zika virus infection
• The Vector Control Unit conducts routine surveillance, environmental inspection and environmental management at known mosquito hotspots; controlling, eradicating mosquito breeding sites through the Integrated Vector Management process complementary to environmental sanitation by members of the public.
• Risk communication & community engagement such as available public information on MOH website (www.moh.gov.bn), MOH Facebook and other social media sites, Talian Darussalam 123; and have issued press statements and press conferences highlighting the key role of community engagement.

Detection of Zika Virus infection
• All clinicians are reminded to assess suspected patients with travel history within the last 12 days to the affected countries according to case definitions.
• Laboratory testing algorithm for Zika virus infection was developed to confirm the diagnosis.

Control of Zika Virus infection
• Readiness for public health management of Zika virus infection such as epidemiology investigation; surveillance and contact tracing of travel companions and household contacts; and outbreak control standard procedures if there is importation of the disease in the country.
• Since the infection can be acquired through mosquitos which are naturally present in the community, the Ministry urges the public to practice cleanliness of environment; elimination of mosquito breeding grounds and personal protection measures to prevent mosquito bites.

[The information above is an adaptation from the World Health Organisation (WHO)]
SOALAN-SOALAN LAZIM MENGENAI JANGKITAN VIRUS ZIKA

Dikemaskini 31 Ogos 2016

1  Apakah Zika?

Jangkitan virus Zika ialah sejenis jangkitan yang disebabkan oleh virus Zika (dikenalpasti pada tahun 1947) yang merebak dicalangan orang ramai melalui gigitan nyamuk yang dijangkiti (*Aedes aegypti dan Aedes albopictus*). Seseorang yang dijangkiti biasanya menunjukan tanda-tanda atau simtom ringan yang boleh berpanjangan sehingga seminggu. Kebanyakkan orang tidak mengalami sebarang simtom (sebanyak 80% dari yang dijangkiti). Walau bagaimanapun, jangkitan virus Zika semasa hamil boleh menyebabkan kecacatan yang serius pada anak dasi semasa kelahiran, yang dipanggil *microcephaly* dan lain-lain kecacatan otak yang teruk.

2  Bagaimana seseorang dijangkiti dengan virus Zika?

Virus Zika biasanya menjangkiti seseorang melalui gigitan nyamuk Aedes yang dijangkiti, sebagaimana jangkitanyang menyebabkan penyakit chingkungunya dan denggi. Wanita hamil yang dijangkiti dengan Zika boleh menjangkiti kandungannya semasa mengandung ataupun semasa waktu kelahiran. Selain itu, mereka yang dijangkiti dengan virus Zika juga boleh menjangkiti pasangan mereka melalui hubungan seksual.

3  Apakah tanda-tanda penyakit virus Zika?

Virus Zika biasanya menyebabkan sakit ringan yang biasa seperti demam dan ruam selepas beberapa hari seseorang itu digigit oleh nyamuk yang telah dijangkiti. Walaupun sebahagian kecil pesakit tidak mengalami sebarang tanda tetapi sesetengah pesakit akan mengalami sakit otot, sakit sendi, sakit kepala dan konjunktivitis serta ruam dan keletihan. Tanda-tanda atau simtom-simtom tersebut boleh berpanjangan dalam jangka masa 2 hingga ke 7 hari. Tidak ada sebarang perbezaan bagi simtom-simtom yang dihidapi oleh wanita yang hamil ataupun tidak.
4 Apakah masalah kesihatan serius yang boleh dihadapi dari Zika?
Kebanyakan mereka yang dijangkiti dengan Zika tidak menunjukkan sebarang tanda-tanda atau simptom atau pun jika ada menunjukkan simptom-simptom ringan akan bertahan selama beberapa hari hingga seminggu. Jangkitan Zika semasa mengandung boleh menyebabkan kecacatan yang serius pada anak dalam masa kelahiran yang dipanggil microcephaly dan lain-lain kecacatan otak yang teruk. Kajian terkini juga menunjukkan penyakit Guillain-Barre syndrome (GBS), iaitu satu penyakit sistem saraf yang luar biasa, berkait rapat dengan Zika. Walau bagaimanapun, hanya sebahagian kecil orang dengan jangkitan virus Zika baru-baru ini mendapat GBS.

5 Bagaimanakah orang ramai boleh mencegah jangkitan Virus Zika?
Cara terbaik untuk mencegah jankitan Virus Zika adalah dengan melindungi diri sendiri dan keluarga daripada gigitan nyamuk kerana ianya adalah cara jangkitan utama. Wanita yang mengandung atau merancang untuk hamil dan pasangan mereka hendaklah mengambil langkah-langkah penjagaan untuk melindungi mereka daripada gigitan nyamuk yang membawa virus Zika.
- Gunakan baju berlengan panjang dan seluar panjang.
- Tidur menggunakan jaring nyamuk jika bilik awda tidak mempunyai penghawa dingin atau jendela yang berjaring, atau sedang tidur di luar rumah.
- Gunakan racun penghalau nya muk yang dibolehkan dan patuhi label penggunaan.
- Kebersihan alam sekitar adalah penting dengan mengambil langkah-langkah pencegahan terhadap kawasan pembiakan nyamuk seperti mengenal pasti dan menghapuskan kawasan-kawasan yang berpotensi untuk menjadi kawasan pembiakan nyamuk dengan mengosongkan, membersikan atau menutup bekas yang boleh bertakung air walaupun sedikit, seperti bekas plastik, bakul, pasu-pasu bunga dan tayar.
- Tapak pembinaan adalah tempat-tempat yang dikenalpasti sebagai hotspots bagi pembiakan nyamuk, dan oleh demikian, pekerja-pekerja dan tapak-tapak pembinaan perlu lebih berwaspad.

6 Bagaimanakah penyakit virus Zika dikesan?
Awda adalah dinasihatkan untuk berjumpa dengan doktor, jika awda mempunyai simptom-simptom penyakit dan telah mengunjungi ke salah satu negara-negara yang terlibat. Doktor akan bertanya mengenai kunjungan terakhir awda dan simptom-simptom yang awda hidapi, dan mengambil darah atau air kencing untuk ujian virus Zika atau virus yang sama, jika diperlukan.
7 Bagaimanakah penyakit virus Zika dirawat?

Pada masa ini, tidak ada rawatan khusus atau vaksin bagi virus Zika. Tanda-tanda penyakit virus Zika boleh dirawat dengan rawatan sokongan seperti ubat-ubatan bagi sakit biasa dan demam, rehat dan meminum air yang banyak. Jika simtom-simtom menjadi lebih teruk, orang ramai adalah dinasihatkan untuk mendapatkan nasihat perubatan.

8 Apa yang perlu saya lakukan sekiranya saya sedang dalam perjalanan ke kawasan terjejas dengan Zika?

Para pelancong/pengunjung perlu sentiasa maklum mengenai negara-negara terkini yang telah dikesan terjejas dengan virus Zika, dan berjumpa dengan pihak kesihatan atau pelancongan tempatan jika ada sebarang kebimbangan.

Semasa lawatan awda, ikuti langkah-langkah pelindungan diri bagi mengelak diri dari gigitan nyamuk seperti memakai pakaian lengan/seluar panjang, memakai penghalau serangga, dan tidur di bawah kelambu atau di dalam bilik yang berhawa dingin. Mereka perlu mendapatkan rawatan perubatan dengan segera jika mereka merasa tidak sihat.

Walaupun awda tidak merasa sakit, awda juga perlu melindungi diri awda daripada gigitan nyamuk sehingga 3 minggu selepas pulang dari lawatan/kunjungan bagi mencegah jangkitan Zika kepada nyamuk-nyamuk yang boleh merebakkan virus Zika kepada orang lain.

Jika awda merasa tidak sihat selepas awda kembali dari kunjungan/perjalanan, sila berjumpa dengan doktor atau kunjungi pusat kesihatan untuk mengetahui sama ada awda perlu diuji untuk virus Zika tersebut.

Awda perlu mengamalkan perhubungan seks secara selamat, contohnya, penggunaan kondom dengan konsisten dan betul semasa melakukan hubungan seks, atau mempertimbangkan menahan diri dari melakukan seks sekurang-kurangnya lapan minggu selepas awda kembali. Walau bagaimanapun, jika awda adalah pasangan lelaki kepada wanita mengandung, awda perlu mengamalkan seks selamat sepanjang kehamilan.
Wanita mengandung adalah dinasihatkan untuk berjumpa doktor mereka sebelum berkunjung ke tempat-tempat yang terjejas dengan jangkitan virus Zika; wanita mengandung yang pasangannya tinggal atau berkunjung ke kawasan-kawasan terjejas dengan jangkitan virus Zika perlu memastikan amalan seks selamat atau menahan diri dari diripada melakukan seks selama 6 bulan selepas kembali dari negara yang terlibat.

9 Negara-negara manakah yang terjejas pada masa ini?

Sebelum ini, jangkitan tempatan virus Zika secara kelompok (sporadic) juga dikesan di beberapa negera di Asia tenggara, termasuk Cambodia, Indonesia, Filipina, Malaysia, Vietnam, Lao PDR dan Thailand.


10 Apa yang patut dilakukan oleh wanita-wanita hamil yang terpaksa mengunjungi atau baru saja mengunjungi kawasan yang terjejas dengan Virus Zika?
Jika awda perlu mengunjungi kawasan yang terjejas tersebut semasa mengandung, adalah sangat penting untuk mengelakkan daripada gigitan nyamuk dan mengambil langkah-langkah berjaga-jaga bagi mengelak jangkitan virus Zika melalui hubungan seks.

Jika perlu pergi ke kawasan yang terjejas, awda hendaklah mendapatkan nasihat daripada doktor dan mengambil langkah-langkah berjaga-jaga dengan tekad dalam mengelakkan daripada di gigit nyamuk. Jika merasa tidak sihat, dapatkanlah rawatan secepat mungkin. Awda juga perlu berbincang dengan doktor awda apabila kembali ke Negara Brunei Darussalam untuk mendapatkan nasihat.

Wanita mengandung yang baru saja mengunjungi kawasan yang terjejas dengan virus Zika hendaklah berjumpa dengan doktor mereka walaupun mereka tidak merasa sakit. Wanita mengandung perlu
berjumpa doktor jika mereka mempunyai tanda-tanda jangkitan virus Zik semasa lawatan mereka atau 2 minggu selepas lawatan tersebut.

11 **Bolehkah ibu-ibu yang dijangkiti Zika Virus menyusukan anak damit mereka?**
Zika virus pernah dikesan di dalam susu ibu walaupun tidak ada bukti yang menunjukkan virus tersebut mengjangkiti anak-anak damit melalui penyusuan susu ibu. Pertubuhan Kesihatan Sedunia (WHO) mensyorkan penyusuan susu ibu secara ekslusif bagi 6 bulan pertama.

12 **Bagaimana Kementerian Kesihatan bersiap-sedia untuk kemungkinan terjadinya Zika di Negara Brunei Darussalam?**
Kementerian Kesihatan terus mengukuhkan kapasiti untuk mencegah, mengesan dan mengawal jangkitan virus Zika di Negara Brunei Darussalam.

**Pencegahan jangkitan Virus Zika**
- Unit Kawalan Vektor menjalankan pengawasan rutin, pemeriksaan alam sekitar dan pengurusan alam sekitar di kawasan *hotspots* nyamuk; mengawal, membasmi tempat pembiakan nyamuk melalui proses Pengurusan Vektor Bersepadu disamping kebersihan alam sekitar oleh orang ramai.

- Perhubungan risiko (*risk communication*) & pendekatan masyarakat akan dilaksanakan seperti maklumat awam yang terdapat di laman web Kementerian Kesihatan (www.moh.gov.bn), MOH Facebook dan laman media sosial yang lain, Talian Darussalam 123; dan pengeluaran kenyataan akhbar dan sidang akhbar yang mengetahui peranan utama penglibatan masyarakat.

**Pengesanan jangkitan Virus Zika**
- Semua doktor adalah diingatkan untuk menilai pesakit yang disyaki dan mempunyai sejarah perjalanan dalam tempoh 12 hari yang lalu ke negara-negara terjejas mengikut definisi kes.
- Makmal ujian algoritma untuk jangkitan virus Zika telah dibangunkan untuk mengesahkan diagnosis.
Kawalan Jangkitan Virus Zika

• Kesediaan untuk pengurusan kesihatan awam bagi jangkitan virus Zika seperti penyiasatan epidemiologi; pengawasan dan mengesan kontek terdekat bagi orang awam seperti yang tinggal di seperjalanan rumah atau warga serumah; dan piawaian prosedur kawalan wabak jika terdapat pembawaan penyakit tersebut di negara ini.

• Memandangkan jangkitan boleh didapati melalui gigitan nyamuk yang berada di persekitaran masyarakat; Kementerian Kesihatan menyeru orang ramai untuk mempraktikkan kebersihan alam sekitar, menghapuskan tempat-tempat pembiakan nyamuk dan mengambil langkah-langkah bagi mengelakkan dari gigitan nyamuk.

[Maklumat di atas diadaptasi dari Pertubuhan Kesihatan Sedunia WHO]
HEALTH ADVICE FOR BRUNEI RESIDENTS TRAVELLING TO ZIKA-AFFECTED COUNTRIES
Last updated 31 Aug 2016

1. The World Health Organisation (WHO) has not issued any specific trade and travel restrictions with respect to travelling to countries affected by Zika virus disease (see Annex 1 for list of countries affected by Zika). People continue to travel between the affected countries and territories for a variety of reasons. The best way to reduce risk of disease is to follow public health travel advice.

2. Based on ongoing risk assessment, Brunei residents travelling to countries affected by Zika are advised to take the following precautions with respect to the disease:

- Appropriate measures should be taken to reduce the risk of becoming infected, including by preventing mosquito bites.
- Travellers can protect themselves from mosquito bites by wearing long-sleeved shirts and trousers, applying insect-repellent, and sleeping under mosquito nets or in rooms with wire-mesh screen to keep out mosquitoes.
- Zika virus can also be sexually transmitted. Therefore, travellers to practice safe sex or abstain from sex during their stay in areas with ongoing Zika virus transmission, and for at least eight weeks after their return. If men experience symptoms of Zika virus disease, they should adopt safer sex practices or abstain from sex for at least six months.
- Travellers returning from areas with ongoing Zika virus transmission, should not donate blood for at least four weeks after departure from the area.
- Pregnant women are advised to avoid unnecessary travel to areas of ongoing Zika virus outbreaks. If travel is deemed necessary, they should speak to their clinician to consider the risk to themselves and the unborn child.
• Women who inadvertently become pregnant or discover they are pregnant in or shortly after returning from areas with ongoing Zika virus transmission should contact their health care providers or visit their nearest health centre immediately upon return.

• Travellers are advised to be aware of the symptoms of Zika Virus infection which are mild fever, conjunctivitis, skin rash and muscle aches. If any travellers develop any symptoms of Zika Virus infection, they are advised to seek medical attention immediately.

• Travellers who have recently returned from Zika-affected countries are advised to monitor their own health and to look out for any symptoms of Zika for at least 14 days. They should seek medical attention if they develop any of the symptoms listed above.

3. With respect to vaccination:

• There is no specific vaccine against Zika virus disease.

• Travellers are advised to be up to date with their routine immunisations. This includes their yearly influenza vaccine.

• Additional vaccination against Hepatitis A, typhoid and yellow fever is also advised.

• Travellers are advised to be vaccinated at least 4 weeks before their date of travel

• Vaccinations can be obtained from the Vaccination Centre, Bandar Seri Begawan Health Centre in Ong Sum Ping or the District Health offices during office hours.
Annex 1: List of countries affected by Zika virus disease (as of 18 Aug 2016)

<table>
<thead>
<tr>
<th>Classification</th>
<th>WHO Regional Office</th>
<th>Country / territory / area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1: Countries with a first reported outbreak from 2015 onwards</td>
<td>AFRO</td>
<td>Cabo Verde; Guinea-Bissau</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AMRO/PAHO</td>
<td>Anguilla; Antigua and Barbuda; Argentina; Aruba; Bahamas; Barbados; Belize; Bolivia (Plurinational State of), Bonaire, Sint Eustatius and Saba – Netherlands*; Brazil; Cayman Islands; Colombia; Costa Rica; Cuba; Curaçao; Dominica; Dominican Republic; Ecuador; El Salvador; French Guiana; Grenada; Guadeloupe; Guatemala; Guyana; Haiti; Honduras; Jamaica; Martinique; Mexico; Nicaragua; Panama; Paraguay; Peru; Puerto Rico; Saint Barthélemy; Saint Lucia; Saint Martin; Saint Vincent and the Grenadines; Sint Maarten; Suriname; Trinidad and Tobago; Turks and Caicos; United States of America; United States Virgin Islands; Venezuela (Bolivarian Republic of)</td>
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</tr>
<tr>
<td></td>
<td>WPRO</td>
<td>American Samoa; Fiji; Marshall Islands; Micronesia (Federated States of); Samoa; Tonga</td>
<td>6</td>
</tr>
<tr>
<td>Subtotal</td>
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<td></td>
<td>53</td>
</tr>
<tr>
<td>Category 2: Countries with possible endemic transmission or evidence of local mosquito-borne Zika infections in 2016</td>
<td>SEARO</td>
<td>Indonesia; Thailand</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>WPRO</td>
<td>Philippines; Viet Nam</td>
<td>2</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Category 3: Countries with evidence of local mosquito-borne Zika infections in or before 2015, but without documentation of cases in 2016, or outbreak terminated</td>
<td>AFRO</td>
<td>Gabon</td>
<td>1</td>
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<tr>
<td></td>
<td>PAHO/AMRO</td>
<td>ISLA DE PASCUA — Chile**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>SEARO</td>
<td>Bangladesh; Maldives</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>WPRO</td>
<td>Cambodia; Cook Islands**; French Polynesia**; Lao People’s Democratic Republic; Malaysia; New Caledonia; Papua New Guinea; Solomon Islands; Vanuatu</td>
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<tr>
<td>Subtotal</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
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<td>70</td>
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Note: MOH Singapore reported its first locally transmitted case of Zika virus infection on 27 Aug 2016. Further cases have been identified since.
Supporting Documents
How is Zika infection prevented?

To prevent mosquito bites that transmit Zika:

1. Cover skin and wear long sleeve especially during peak feeding times of the mosquito which are during the early morning and late afternoon/evening hours.

2. Use insect repellent as recommended by health authorities.

3. Sleep protected by mosquito nets.

4. At least once a week, empty, clean, turn over, cover and/or dispose of containers that can hold water, such as tires, buckets and flower pots, both inside and outside of dwellings to eliminate mosquito breeding sites.

5. Use screens or mosquito nets in windows and doors to reduce contact with mosquitoes.

Controlling the breeding sites of Aedes mosquitoes reduces the likelihood of transmission of Zika, chikungunya, and dengue.
ZIKA VIRUS
Bagaimanakah cara untuk mengelak penyakit Zika?

Caranya adalah dengan mengelakkan diri dari gigitan nyamuk:

- Memakai baju berlengan panjang dan seluar panjang sewaktu keluar rumah terutamanya pada waktu nyamuk sedang aktif waktu awal pagi dan malam.
- Menyapukan atau menyemburkan ubat penghalau nyamuk pada anggota terdedah.
- Tidur menggunakan kelambu penghalang nyamuk.
- Pastikan pasu-pasu bunga dan bekas talian dibuang aliyana sekurang-kurangnya setiap sekali, dan membuang bekas yang boleh menangkap air seperti baldi dan tayar kereta didalam dan di luar rumah.
- Menghalang nyamuk dari memasuki rumah dengan menggunakan rawa pada tingkap-tingkap rumah.

Mencegah pembiakan nyamuk Aedes boleh mengurangkan risiko untuk menghidap penyakit Zika, chikungunya dan dengi.

#zika #FightAedes #ZikaVirus
www.paho.org/zikavirus
ZIKAVirus

Is there a treatment?

There is no vaccine or specific drug against this virus. Only pain and fever can be treated.

Patients with symptoms of Zika infection should:

- Get plenty of bed rest
- Wear clothing that covers arms and legs
- Take medicine to relieve fever and pain
- Use mosquito nets when napping
- Drink plenty of liquids

If symptoms worsen or complications develop, see a doctor immediately.

#zika
#FightAedes
#ZikaVirus
www.paho.org/zikavirus
Apakah rawatan untuk Penyakit zika?

Tiada vaksin atau ubat untuk melawan virus ini
Hanya tanda-tanda seperti sakit badan dan demam dapat di rawat

Pesakit-pesakit yang mengalami tanda-tanda penyakit Zika hendaklah:

- Banyakkan berehat
- Memakai pakaian yang menutup seluruh lengan dan kaki
- Memakan ubat penahan sakit & demam
- Gunakan kelambu untuk menghalang nyamuk semasa tidur
- Banyakkan meminum air

Jika tanda-tanda penyakit menjadi semakin teruk, sila berjumpa Doktor dengan segera

#zika
#FightAedes
#ZikaVirus
www.paho.org/zikavirus
JOINT PRESS STATEMENT

MINISTRY OF HEALTH AND MINISTRY OF DEVELOPMENT

ON

MOSQUITO-BORNE DISEASE: ZIKA VIRUS

1. The Ministry of Health and the Ministry of Development of Brunei Darussalam wish to inform the public regarding the prevention of mosquito-borne diseases including the Zika virus infection.

2. Latin America and the Caribbean are the main regions that are affected by Zika, however, there are neighboring countries who are also affected by this disease. Alhamdulillah, thus far, there have been no reported cases of Zika Virus infections in Brunei Darussalam.

3. Zika Virus infection is caused by a virus carried by the Aedes mosquito. The Aedes mosquito is routinely identified in tropical countries including Brunei Darussalam. This species of mosquito often breed in containers that hold stagnant water including empty tins, drip-trays for flower pots, old tyres and rubbish left strewn about. Mosquito breeding increases many-fold after a rainy period. Typically, these mosquitoes are most active in the early morning and late afternoon.

4. The Ministry of Health and the Ministry of Development will continue to cooperate in implementing preventive and control measures against the Aedes mosquito. These measures include ensuring environmental sanitation, waste management and the use of insecticides (where appropriate) to control the adult mosquito population.

5. The aforementioned measures are useful but the most effective measure is for the public to eliminate all mosquito breeding sites. Members of the public should take the following measures:
   - Pour out water from the base of flower pots and replace the water inside the pots at least once a week. The insides of the flower pots should also be brushed to eliminate any mosquito larvae that stick to the walls of the pots.
   - Clean out clogged drains to ensure there is no stagnant water.
   - All containers that contain water such as bottles, cans, plastic containers and coconut shells must be planted or safely disposed in a covered trash bin.
   - Turn over or seal tightly all water storage that are no longer used such as buckets, barrels, etc.
   - Boats that are no longer used should be reversed so that water does not stagnate.
   - Do not leave old tyres abandoned and exposed to rain water. Puncture out the tyres to prevent water stagnation. A better measure is to remove the old tyres that are no longer used and send to landfills.
6. The support and cooperation of all stakeholders is vital. Members of the public must engage fully and share responsibility in taking preventive measures against mosquito breeding.

7. The Ministry of Health and the Ministry of Development will continue to work together to implement any necessary measures. For any questions about the Zika virus infection or any mosquito-borne disease, the public can visit the Ministry of Health website at www.moh.gov.bn or call Talian Darussalam 123.

Reference : KK/PR/3
Date : 26 Zulkaedah 1437H / 30 August 2016


5. Langkah-langkah yang telah disebutkan memang berguna tetapi langkah yang paling efektif adalah menghapuskan tempat-tempat pembiakan nyamuk oleh orang ramai. Tindakan yang perlu dibuat adalah:
   • Buangkan air yang bertakung pada lapik pasu dan tukarkan air dalam pasu sekurang-kurangnya seminggu sekali. Pasu tersebut hendaklah juga dibersihkan dengan menggosok didalam pasu tersebut bagi menghapuskan telur nyamuk yang melekat didinding pasu berkenaan.
   • Bersihkan longkang-longkang yang tersumbat supaya air tidak ada bertakung.
   • Semua bekas yang boleh mengandungi air seperti botol, tin-tin, kontainer plastik dan tempurung kelapa hendaklah di tanam atau dibuang ke dalam tong sampah yang bertutup.
• Terbalikkan atau tutup rapat semua tempat penyimpanan air yang tidak digunakan lagi seperti baldi, tong dan sebagainya.
• Perahu-perahu yang tidak digunakan lagi sebaiknya diterbalikkan supaya air tidak bertakung.
• Jangan biarkan tayar-tayar lama terbiar dan terdedah dengan air hujan yang boleh menakong air. Lubangkan tayar-tayar untuk mengelakkan air bertakung. Langkah yang lebih baik ialah membuang tayar-tayar yang tidak digunakan lagi di tapak pelupusan sampah.


- T A M A T -

Rujukan: KK/PR/3

Tarikh : 26 Zulkaedah 1437H / 30 Ogos 2016M
MOSQUITO-BORNE DISEASE: ZIKA VIRUS

1. The Ministry of Health Brunei Darussalam wish to update the public with regards to the recent mass media reports by the Republic of Singapore regarding 41 locally-transmitted cases of Zika virus, as confirmed by the Ministry of Health Republic of Singapore. The Ministry of Health Republic of Singapore also reported that 34 of these cases have fully recovered (information obtained from joint press release by the Ministry of Health Singapore and National Environment Agency Singapore, 28 August 2016).

2. Other affected countries with reported widespread transmission of Zika virus come mainly from Latin America and the Caribbean.

3. Alhamdullilah, thus far, there have been no reported cases of Zika Virus infections in Brunei Darussalam.

4. Zika Virus infection is caused by a virus carried by the mosquito Aedes Aegypti, similar to dengue fever and chikungunya. The Aedes mosquito is routinely identified in tropical countries including Brunei Darussalam.

5. Most cases of Zika Virus infections do not show any signs or symptoms. However, a small percentage of patients may experience symptoms such as fever, muscle pain, joint pain, headache, conjunctivitis (red eye) and rash. The infection may also be associated with neurological symptoms and microcephaly in newborns.

6. There is no specific treatment or vaccine for Zika Virus infection. Treatment is focused on supportive care for the alleviation of symptoms when deemed necessary.

7. The Zika Virus belongs to the Flavivirus genus in the Flaviviridae family. It is transmitted from infected to healthy individuals through the bite of the Aedes mosquito. Additionally, there is a small risk of transmission through sexual contact.

8. Entomological (insect) surveillance has indicated the presence of a native population of Aedes mosquito in Brunei Darussalam. This species of mosquito often breed in containers that can hold water such as empty tins, drip-trays for flower pots, old tyres and rubbish left strewn about. It has been found that the breeding of these mosquitoes will increase many-fold after a rainy season. Typically, they are most active in the early morning and late afternoon.

9. The Ministry of Health continues to implement measures for monitoring, prevention and control, including conducting entomological surveillance and vector control. Given the ongoing situation in Singapore and the extensive travel between Singapore and Brunei Darussalam, there is a small risk of importation of the virus through an infected individual into the country. Brunei Darussalam’s preparedness to manage imported cases of Zika virus is based on strengthening our
capacity to prevent cases, detect cases early and control transmission to prevent an outbreak. This is aligned with the core principles of the International Health Regulations (IHR 2005). Ongoing risk assessment of the emerging situation continues and clear guidelines are in place to ensure that we are prepared to handle introduction of the virus.

10. The support and cooperation of all stakeholders is vital. Members of the public must engage fully and share responsibility in preventing outbreaks of Zika virus in Brunei Darussalam by taking preventative measures against mosquito breeding such as:

   - Destroying places where mosquitoes breed and to spend about 10-30 minutes, at least once a week, checking your residence or building, to ensure that the surroundings are free from places where mosquitoes can breed.

   - Ensure that all drains are clean, functioning properly and not blocked.

   - Ensure that all rubbish are disposed of properly and there are none left over that can collect and hold water.

   - Wear long-sleeved clothing and long trousers and avoid wearing dark coloured clothing as dark colours will attract mosquitoes.

   - Use insecticide sprays, mosquito coils or electronic mosquito repellant.

   - Use insect repellant especially for outdoor activities as needed.

11. In addition, travellers to affected countries, especially pregnant women, are advised to take all precautionary measures such as described above.

12. At this time, the World Health Organisation (WHO) do not advice any travel or trade restrictions with the affected countries, or any screening or isolation of travelers at points of entry. It is however, important that individuals who have visited affected countries or are travelling from the affected countries, who subsequently develop symptoms, are advised to get assessed at the nearest health facility.

13. The Ministry of Health will continue to monitor evolving events in collaboration with the World Health Organization (WHO) and will implement any necessary measures, including informing the public of any further developments. For further information questions on the Zika virus and mosquito-borne diseases, the public can visit the Ministry of Health website at www.moh.gov.bn or call Talian Darussalam 123.

-END-

Reference : KK/PR/3
Date : 25 Zulkaedah 1437H / 29 Ogos 2016
PENYAKIT BAWAAN NYAMUK: VIRUS ZIKA


2. Di antara negara-negara lain yang terjejas dengan penyakit virus Zika dan melaporkan penularan secara meluas (widespread transmission), kebanyakannya, adalah terhad di rantau Latin Amerika dan Caribbean.

3. Alhamdulillah, hasil dari pemantauan berterusan Kementerian Kesihatan, setakat ini tidak ada kes jangkitan virus Zika dilaporkan di Negara Brunei Darussalam.


6. Tidak ada rawatan khusus bagi merawat ataupun vaksin bagi mencegah jangkitan virus Zika. Rawatan adalah lebih tertumpu kepada rawatan sokongan untuk melegakan tanda-tanda jangkitan, jika diperlukan.


10. Sokongan dan kerjasama daripada semua pihak yang berkepentingan adalah mustahak. Orang ramai perlu bersama-sama bertanggungjawab dalam mengambil tindakan-tindakan pencegahan perebakan virus Zika di Negara Brunei Darussalam dengan mengambil langkah-langkah pencegahan pembiakan nyamuk seperti berikut:

- Memusnahkan tempat-tempat pembiakan nyamuk dan meluangkan masa selama 10-30 minit sekerap yang boleh, sekurang-kurangnya seminggu sekali, untuk memeriksa kawasan kediaman atau bangunan masing-masing bagi memastikan kawasan persekitaran bebas daripada pembiakan nyamuk.

- Memastikan semua longkang dan aliran air dalam keadaan bersih, berfungsi dengan baik dan tidak tersumbat.

- Memastikan sampah sarap di buang dengan teratur dan tidak ada bekas-bekas yang terbiar yang boleh menakung air.

- Memakai pakaian berlengan panjang dan seluar panjang dan mengelakkan dari memakai pakaian berwarna gelap kerana warna gelap akan menarik perhatian nyamuk.

- Menggunakan semburan racun serangga, lingkaran ubat nyamuk atau kepingan penghalau nyamuk.

- Menggunakan penghadang serangga (*insect repellent*) terutama bagi aktiviti luar, jika perlu.
11. Disamping itu orang ramai terutama sekali wanita yang mengandung yang akan mengunjungi negara-negara yang terjejas adalah dinasihatkan untuk mengambil langkah-langkah berjaga-jaga seperti keterangan yang dinyatakan di atas.


-T A M A T-

Rujukan: KK/PR/3

Tarikh : 25 Zulkaedah 1437H / 29 Ogos 2016M
MINISTRY OF HEALTH GUIDELINES FOR THE PREVENTION AND CONTROL OF ZIKA VIRUS INFECTION IN BRUNEI DARUSSALAM

Author: MOHIPCC Secretariat
Endorsed by: MOHIPCC Chair
Last updated: 15 March 2016
Next review date: 15 March 2018
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1 BACKGROUND

Zika virus disease is a mosquito-borne viral disease caused by the Zika flavivirus. The disease symptoms are usually mild and last for 2 to 7 days. Incubation period is suggested to last from several days to 1 week. Infection may go unrecognised or be misdiagnosed as dengue, chikungunya or other viral infections giving fever and rash. Asymptomatic infections are common, as described with flaviviral infections such as dengue and West Nile fever, and only one in five people infected with Zika virus are believed to develop symptoms.

As an emerging diseases, Zika virus infection was first identified in Uganda in 1947 in rhesus monkeys through a monitoring network of sylvatic yellow fever. It was subsequently identified in humans in 1952 in Uganda and the United Republic of Tanzania. Outbreaks of Zika virus disease have been recorded in Africa, the Americas, Asia and the Pacific.

In 2015, in Brazil, local health authorities have observed an increase in Zika virus infections in the general public as well as an increase in babies born with microcephaly in northeast Brazil. Agencies investigating the Zika outbreaks are finding an increasing body of evidence about the link between Zika virus and microcephaly. In view of the above, in February 2016, a review committee of the International Health Regulations (IHR 2015) was convened by the World Health Organisation and zika virus infection was declared a Public Health Emergency of International Concern.
2 PURPOSE OF THE DOCUMENT

The purpose of this document is to:

- Update current knowledge and best practices on the control of Zika virus infections
- Assist in the implementation of a notification and surveillance system for Zika virus infections in Brunei Darussalam
- Document current practice to prevent, detect and control Zika virus infections in Brunei Darussalam

2.1 Intended audience

This document is intended for use by health care professionals. The target audience for this document are:

- Clinicians and other health care professionals involved in the diagnosis and management of individuals with Zika virus infection including those in both government and private healthcare facilities
- Public health professionals involved in surveillance and outbreak control
- Laboratory scientists involved in the detection and notification of Zika virus infections
3 INFORMATION ON THE DISEASE

3.1 Causative agent

The Zika virus belongs to Flaviviridae and the genus Flavivirus, and is thus related to the dengue, yellow fever, Japanese encephalitis, and West Nile viruses. Like other flaviviruses, Zika virus is enveloped and icosahedral and has a nonsegmented, single-stranded, positive-sense RNA genome.

There are two lineages of the Zika virus: the African lineage, and the Asian lineage. Phylogenetic studies indicate that the virus spreading in the Americas is most closely related to the Asian strain, which circulated in French Polynesia during the 2013–2014 outbreak.

3.2 Clinical features

Only about 1 in 5 people infected with Zika virus become symptomatic – this means that 80% of infections in the community are undiagnosed and therefore unreported. Characteristic clinical findings are acute onset of fever with maculopapular rash, arthralgia, or conjunctivitis. Other commonly reported symptoms include myalgia and headache. Clinical illness is usually mild with symptoms lasting for several days to a week. Severe disease requiring hospitalization is uncommon and case fatality is low. However, there have been cases of Guillain-Barre syndrome reported in patients following suspected Zika virus infection. Preliminary diagnosis is based on the patient’s clinical features, places and dates of travel, and activities.

The Brazil Ministry of Health is also investigating the possible association between Zika virus and a reported increase in the number of babies born with microcephaly. Due to concerns of microcephaly associated with maternal Zika virus infection, fetuses and infants of women infected with Zika virus during pregnancy should be evaluated for possible congenital infection and neurologic abnormalities.

Common clinical features include:
- Fever
- Non-purulent conjunctivitis
- Headache
- Myalgia
- Arthralgia
- Asthenia
- Maculopapular rash
- Oedema in the lower limbs

Less common, but previously reported, clinical features include:
- Retro-orbital pain
- Anorexia
- Vomiting
- Diarrhoea
- Abdominal pain
- Mild Thrombocytopenia (laboratory finding)
- Mild Leucopenia (laboratory finding)

Severe clinical features can include:
- Guillan-barre syndrome
- Meningoencephalitis
- Thrombocytopenia purpura

3.3 Transmission

3.3.1 Mosquito bites

Zika virus is transmitted to people primarily through the bite of an infected Aedes species mosquito (A. aegypti and A. albopictus). These are the same mosquitoes that spread dengue and chikungunya viruses. These mosquitoes typically lay eggs in and near standing water in things like buckets, bowls, animal dishes, flower pots and vases. They prefer to bite people, and live indoors and outdoors near people.

Mosquitoes that spread chikungunya, dengue, and Zika are aggressive daytime biters. They can also bite at night. Mosquitoes become infected when they feed on a person already infected with the virus. Infected mosquitoes can then spread the virus to other people through bites.

3.3.2 Mother to child

A mother already infected with Zika virus near the time of delivery can pass on the virus to her newborn around the time of birth. A pregnant woman can pass Zika virus to her fetus during pregnancy. We are studying the adverse pregnancy and infant outcomes associated with Zika virus infection during pregnancy.

To date, there are no reports of infants getting Zika virus through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where Zika virus is found.

3.3.3 Sexual contact

Zika virus can be spread by a man to his sex partners. In known cases of likely sexual transmission, the men had Zika symptoms, but the virus can be transmitted before, during, and after symptoms develop.
In one case, the virus was spread a few days before symptoms developed. The virus is present in semen longer than in blood.

3.3.4 Blood transfusion

There have been multiple reports of blood transfusion transmission cases in Brazil. These reports are currently being investigated. During the French Polynesian outbreak, 2.8% of blood donors tested positive for Zika and in previous outbreaks, the virus has been found in blood donors.
4 ZIKA VIRUS SURVEILLANCE IN BRUNEI DARUSSALAM

The legal and regulatory framework underpinning the surveillance of communicable diseases of public health concern in Brunei Darussalam is the Infectious Disease Act, Chapter 204. Zika virus disease is not specifically listed as a disease under the First Schedule of the Infectious Disease Act, however can be considered under the Act to constitute a disease considered by the Director-General of Health Services to pose a public health threat under Sections 6 & 10.

In view of this, clinicians and laboratory staff have responsibility for notifying cases of Zika virus disease to the Director-General of Health Services or a delegated division. Operationally, Disease Control Division, MOH has responsibility for the collation, analysis and dissemination of Zika virus surveillance data.

This document adapts the following case definition of Zika virus as specified by the WHO as follows:

**Suspected case**

- Positive travel history within last 12 days to affected country*

  *(As of March 2016, countries affected by Zika virus are still evolving and healthcare professionals should refer to the most recent list on [http://www.who.int/emergencies/zika-virus/situation-report/en/](http://www.who.int/emergencies/zika-virus/situation-report/en/))

- Patient with rash or elevated body temperature (>37.2)

- with one or more of the following symptoms (not explained by any other medical conditions)
  - Athralgia or myalgia
  - Non-purulent conjunctivitis
  - Headache or malaise

**Confirmed case**

A suspected case with a laboratory positive result for the specific detection of Zika virus

4.1 Detection of Zika Virus infection

Suspected cases of Zika virus infection must have a positive travel history to an affected country. As of March 2016, the situation is still evolving and the list of Zika-affected countries are updated by the WHO regularly. Clinicians and other healthcare professionals considering a differential diagnosis of Zika virus should consult the most recent situation report available on the WHO website [http://www.who.int/emergencies/zika-virus/situation-report/en/](http://www.who.int/emergencies/zika-virus/situation-report/en/).
In view of the current epidemiological patterns and frequency of arbovirus infections in the region, suspected cases of Zika virus should be tested first for dengue and chikungunya prior to testing for Zika.

Figure 1 shows the laboratory detection algorithm of Zika virus infection. Acute infections (defined as <7 days after symptom onset) which have tested negative for dengue and chikungunya infection will be sent for further testing of Zika virus DNA using RT-PCR at the National Public Health Laboratory in Singapore. Samples which have been taken for >7 days post symptom onset and are negative for dengue and chikungunya antibody will be sent to the WHO Collaborating Centre for Reference and Research on Tropical and Emerging Diseases in Japan for Zika virus IgM testing.

All samples of suspected Zika virus infection must be ordered manually using the Virology requisition form and submitted manually to Virology Laboratory Sumbiling. It must include:

- Countries visited
- Dates of travel
- Date of specimen collection
- Date of onset of symptoms
- Relevant symptoms
Due to extensive cross-reactivity in flavivirus serological assays, **EMPHASIS** should be placed on molecular testing (RT-PCR) in acute specimens received from individuals with clinically compatible illness and history of travel to affected area.

1. All sample must be ordered manually using Virology requisition form and submitted to Virology Laboratory Sumbiling.
2. Testing will not be initiated without the inclusion of:
   a. Country visited
   b. Dates of travel
   c. Date of onset of symptoms
   d. Relevant symptoms
   e. Date of specimen collection

**IMPORTANT NOTE:**

1. Send to National Public Health Laboratory, Singapore for testing
2. PRNT (Plaque Reduction Neutralization testing) should include any flavivirus (e.g. WNV, JEV, ZIKV) and will be sent to WHO Collaborating Centre for Reference and Research on Tropical and Emerging Virus Diseases, Japan for testing
3. ZIKV RT-PCR should be sent to WHO Collaborating Centre for Reference and Research on Tropical and Emerging Virus Diseases, Japan for testing
4. Send to WHO Collaborating Centre for Reference and Research on Tropical and Emerging Virus Diseases, Japan for testing

To note:

Request must be hand written as test is unavailable through BRUHIMS
Sample to be taken in SST tube (yellow top)

Turnaround time for Molecular testing is approximately 7 days while Antibody Testing can be up to 30 days depending on the extent of cross reactivity where confirmation is required.
5  PUBLIC HEALTH MANAGEMENT OF ZIKA VIRUS INFECTION

5.1  Single cases of Zika virus

All confirmed cases of Zika virus infection should be notified by Laboratory Services to the attending clinician and to Disease Control Division or the relevant District Health Office (Fig 2). Upon receiving notification, DCD or the District Health Office will immediately report the case to the Director-General of Health Services as the National IHR Focal Point.

Public health management should commence as follows:

- DCD / District Health will verify the information and confirm the case
- The case will be advised to stay indoors at home and to take appropriate precautions to avoid being bitten by mosquito while exhibiting symptoms
- A full travel history will be enquired including dates of travel, date of return to the country, and symptom onset
- Possible sources of infection will be identified by DCD / District Health Office
- Full contact history should be enquired including the names and details of all household and travel contacts. Travel companions – persons who have travelled with the case should be instructed to conduct active monitoring and results recorded by DCD / District Health Office for at least 12 days. Household contacts – should be instructed to conduct active monitoring and the results recorded by DCD / District Health Office for at least 22 days (maximum extrinsic and intrinsic incubation period)
- Environmental Health Division / District Health will commence environmental inspection and entomological inspection of the appropriate premises including the household
- Fogging and insecticide use for the household premises if appropriate
- DCD will alert health centres, A&E and private healthcare facilities to have high index of suspicion for Zika virus infection
Contacts can be:

- Travel companions – persons who have travelled with the case should be instructed to conduct active monitoring and results recorded by DCD / District Health Office for at least 12 days.
- Household contacts – should be instructed to conduct active monitoring and the results recorded by DCD / District Health Office for at least 22 days (maximum extrinsic and intrinsic incubation period)
5.2 Zika Virus cluster

For Zika virus infection, in Brunei Darussalam, a cluster is defined as the presence of two or more cases of the disease where there is a likely epidemiological link and transmission is likely to have occurred from one case to another. Investigation and management of cluster is presented in Fig 3.

Disease Control Division will examine all isolated cases of Zika virus infection and has responsibility for verifying and confirming a cluster. In the event that there is a cluster, DCD will lead the investigation as an outbreak.

Following notification of a cluster to the Director-General of Health Services, an Outbreak Control Team will be convened and lead by DCD. The members of the Outbreak Control Team will include Environmental Health Division, Primary Health Care, and Virology. A geographical area for heightened surveillance will be defined. This area should correspond to the area where transmission is likely to have occurred and in this area, surveillance of all individuals will be undertaken. Where cases present with symptoms to primary health care, samples should be taken and tested for Zika virus regardless of travel history. The Outbreak Control Team will produce a linelist of cases, epidemic curve and daily situation report.

DGHS will convene a tactical level Emergency Operations Centre / Public Health Command Centre to consider resource implications and to prepare risk communication and submit a draft press release to MOH SMT within 24 hours of the outbreak being declared. The EOC / PHCC will have responsibility for reviewing the daily situation reports and where appropriate may issue a stand down notice.
Fig 3: Investigation and management of Zika virus cluster

*In the event that there is a cluster of confirmed cases (2 or more cases), DCD will lead the investigation as an outbreak.*
### List of Abbreviations

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<td>ZIKV</td>
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<tr>
<td>DENV</td>
<td>Dengue Virus</td>
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<tr>
<td>CHKV</td>
<td>Chikungunya Virus</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>PAHO</td>
<td>Pan American Health Organization</td>
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<td>DCD</td>
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