



Top Questions on Zika: Simple Answers

Developed by the
Association of State and Territorial Health Officials*
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Note – The understanding of Zika is rapidly evolving and this document will be updated periodically to reflect new information and recommendations as they become available.



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I. Introduction

In March 2016, ASTHO sponsored the development of *Top Questions on Zika: Simple Answers*¹ with risk communication experts² and a working group of State Health Officials³ using the science-based, risk communication message mapping development process. “Message Maps” are risk communication tools used to help organize complex information and make it easier to express current knowledge. The development process distills information into easily understood messages written at a sixth- to eighth-grade reading level.

Messages are presented initially in no more than 3-5 short sentences and convey 3-5 key messages, ideally in the least number of words possible. The approach is based on surveys showing that lead or front-page media and broadcast stories usually convey only 3-5 key messages usually in less than 9 seconds for broadcast media or 27 words for print. Each primary message normally has 3 to 5 supporting messages that can be used when and where appropriate to provide context for the issue being mapped. A brief description of the message mapping strategy is in the Appendices.

In the following pages, you will find 33+ top questions about Zika answered with detailed message maps. ASTHO recommends that you review the Appendix “Media Interviews: Tips and Pitfalls” before you engage with the media.

Other prominent public health organizations have also produced Zika Q&As. ASTHO’s *Top Questions on Zika: Simple Answers* is based on message maps and follows the belief that state health officials need both short and long answers. Many other organizations’ Zika Q&As have greater complexity and complement this document.

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II. Preface

State and Territorial Health Officials (SHOs) play a critical role in the health security of our nation. The demands are many and the margin of error is small. SHOs must translate the best available public health evidence and science into actionable policy advice for elected leaders and other cabinet agencies. They must act as a credible, timely, source of accurate information to healthcare providers. Equally important, the SHO and the public health team must convey a clear, compassionate, and caring message to the public to motivate appropriate protective behaviors without instilling inappropriate fear. All of this must occur while leading and managing complex public health agencies strained under the demands of an emergency response.

The role is all the more complex in a rapidly evolving situation in which many unknowns remain. Overconfidence or utilizing an inaccurate mental model of an issue can lead to missteps and diminish public trust. It is critical for this reason to be very cognizant of what is known, what is unknown, what is controllable, and what is not controllable. This humility allows rapid adjustments to strategies and tactics and allows an accurate and credible message to be delivered to and received by the public and policymakers.

ASTHO staff and a working group of members have worked with ASTHO's Senior Advisors, Drs. Randall Hyer and Vincent Covello from the Center for Risk Communication and CrisisCommunication.net, to develop this communication guide to assist SHOs in preparing to communicate with the public, media, and policymakers about Zika.

Over 30 state and territorial health officials prioritized the current top 33+ questions on Zika for which these message map style answers were developed. Of course, a SHO's judgment will determine the most appropriate response to an issue in his or her jurisdiction. It is our hope that this messaging guide can provide SHOs with a baseline of consistent messages across our nation.

Top Questions on Zika: Simple Answers will be modified and updated as events evolve and more is known.

Thank you for your service of protecting and improving the health of our nation.

Michael Fraser, PhD, CAE
Executive Director
Association of State and Territorial Health Officials



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IV. 100 series: Basic

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101. What is Zika?

Shorter Answer:

1. *Zika is a virus transmitted by mosquitoes.*
2. *The most common symptoms of Zika are mild fever, rash, joint pain, and “pink eye” (conjunctivitis).*
3. *Zika rarely requires hospitalization and is rarely fatal.*
4. *Pregnant women infected with Zika may give birth to babies with an abnormally small head associated with incomplete brain development (microcephaly).*

Longer Answer:

1. *Zika is a virus transmitted by mosquitoes.*

- If mosquito bites are prevented, Zika outbreaks in humans are unlikely.
- Zika virus is spread to people primarily through the bite of an infected *Aedes* species of mosquito (*Aedes aegypti* and *Aedes albopictus*).
- If a mosquito bites someone who is infected with Zika, the mosquito takes up the virus.
- Zika was first discovered in 1947 and in 1952, the first human cases of Zika were detected.

2. *The most common symptoms of Zika are mild fever, rash, joint pain, and “pink eye” (conjunctivitis).*

- Symptoms of Zika typically last for several days to a week after being bitten by an infected mosquito.

3. *Zika rarely requires hospitalization and is rarely fatal.*

- Many people infected with Zika do not realize they have been infected.
- There is no vaccine for Zika.
- Once a person has been infected with Zika, he or she is likely to be protected from future infections.
- In rare cases, Zika infection has been associated with nerve system damage.

4. *Pregnant women infected with Zika may give birth to babies with an abnormally small head associated with incomplete brain development (microcephaly).*

- Microcephaly is a birth defect where a baby’s head is smaller than expected when compared to babies of the same sex and age.
- Babies with microcephaly often have smaller brains than expected when compared to babies of the same sex and age.

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Continued - 101. What is Zika?

- Evidence exists that Zika is associated with microcephaly but more research is needed to understand the association and how Zika may cause it.
- Transmission of Zika to developing babies has been documented in all trimesters.
- There are many unknowns regarding Zika and pregnancy.
 - It is unknown the proportion of pregnant women with Zika infection in areas with Zika transmission.
 - It is unknown the likelihood of the developing baby getting infected from the mother.
 - It is unknown the proportion of developing babies that develop an abnormally small head associated with incomplete brain development (microcephaly).
 - It is unknown what factors increase risk to the developing baby.
- The many unknowns regarding Zika and pregnancy make it difficult for healthcare providers to offer advice to patients with potential Zika virus exposure.

Soundbite (Shorter Answer):

1. *Zika is a virus transmitted by mosquitoes.*
2. *The most common symptoms of Zika are mild fever, rash, joint pain, and “pink eye” (conjunctivitis).*
3. *Zika rarely requires hospitalization and is rarely fatal.*
4. *Pregnant women infected with Zika may give birth to babies with an abnormally small head associated with incomplete brain development (microcephaly).*

102. What are the signs and symptoms of Zika and when do they appear?

Shorter Answer:

1. *Zika symptoms include mild fever, rash, joint pain, and “pink eye” (conjunctivitis).*
2. *People who get infected may not experience symptoms for 3-7 days.*
3. *If a person exhibits Zika symptoms, they are usually mild and last 3-7 days.*
4. *Nervous system disorders have been reported amongst Zika patients.*

Longer Answer:

1. *Zika symptoms include mild fever, rash, joint pain, and “pink eye” (conjunctivitis).*

- Additional common symptoms of Zika are muscle pain and headache.
- Healthcare providers should consider Zika in: (1) people who have traveled to areas with active Zika transmission within two weeks of the onset of common Zika symptoms and (2) residents of Zika areas who exhibit common Zika symptoms.

2. *People who get infected may not experience symptoms for 3-7 days.*

- Because the symptoms of Zika are similar to those of many other diseases, many cases are not recognized.
- Most people with Zika do not know they have been infected because they did not have symptoms.
- Zika usually remains in the blood of an infected person for about a week but it can be found longer in some people.
- Zika can be present in semen longer than in blood.

3. *If a person exhibits Zika symptoms, they are usually mild and last 3-7 days.*

- People usually don't get sick enough to go to the hospital and rarely die of Zika.
- Once a person has been infected, he or she is likely to be protected from future infections.
- Pregnant women, or those planning to be pregnant, should be sure to visit their healthcare provider if they develop a mild fever, rash, joint pain, or “pink eye” (conjunctivitis), and live in an area affected by Zika.
- Pregnant women, or those planning to be pregnant, should be sure to visit their healthcare provider if they develop a mild fever, rash, joint pain, or “pink eye” (conjunctivitis) within 2 weeks after traveling to a place where Zika has been reported.

Continued on next page.



Continued - 102. What are the signs and symptoms of Zika and when do they appear?

4. Nervous system disorders have been reported amongst Zika patients.

- The most common observed nervous system disorder is paralysis (acute ascending paralysis or Guillain-Barré syndrome).
- Guillain-Barré syndrome is a rare disorder of the nervous system causing muscle weakness and, in some cases, paralysis.
- Guillain-Barré syndrome likely occurs only in a small proportion of Zika cases.
- Scientists are working to understand the possible link between Zika and Guillain-Barré syndrome.

Soundbite (Shorter Answer):

1. *Zika symptoms include mild fever, rash, joint pain, and “pink eye” (conjunctivitis).*
2. *People who get infected may not experience symptoms for 3-7 days.*
3. *If a person exhibits Zika symptoms, they are usually mild and last 3-7 days.*
4. *Nervous system disorders have been reported amongst Zika patients.*

103. What is the connection between Zika, and microcephaly and Guillain-Barré syndrome?

Shorter Answer:

1. *Zika during pregnancy has been associated with microcephaly (an abnormally small head associated with incomplete brain development).*
2. *Health authorities have observed increased cases of Guillain-Barré syndrome (a rare nervous system disorder) amongst Zika patients.*

Longer Answer:

1. *Zika during pregnancy has been associated with microcephaly (an abnormally small head associated with incomplete brain development).*

- Zika has been identified in tissues from infants with an abnormally small head associated with incomplete brain development (microcephaly).
- Transmission of Zika to the developing baby has been documented in all trimesters.
- There are many unknowns regarding Zika and pregnancy.
 - It is unknown the proportion of pregnant women with Zika infection in areas with Zika transmission.
 - It is unknown the likelihood of a developing baby getting infected from its mother.
 - It is unknown the proportion of infected developing babies that develop an abnormally small head associated with incomplete brain development (microcephaly).
 - It is unknown what factors increase risk to the developing baby.
- The many unknowns regarding Zika and pregnancy make it difficult for healthcare providers to offer advice regarding patients with potential Zika virus exposure.

2. *Health authorities have observed increased cases of Guillain-Barré syndrome (a rare nervous system disorder) amongst Zika patients.*

- Guillain-Barré syndrome is a rare nervous system disorder causing muscle weakness and, in some cases, paralysis.
- Common symptoms of Guillain-Barré syndrome are weakness of the arms and legs.
 - Symptoms of Guillain-Barré syndrome often begins with tingling and weakness starting in the feet and legs and spreading to the upper body and arms.
 - In a small percentage of people with Guillain-Barré syndrome, symptoms begin in the arms or face.
 - People with Guillain-Barré syndrome usually experience their most significant weakness within two to four weeks after symptoms begin.

Continued on next page.

Continued - 103. What is the connection between Zika, and microcephaly and Guillain-Barré syndrome?

- Signs and symptoms of Guillain-Barré syndrome may include:
 - Prickling, "pins and needles" sensations in the fingers, toes, ankles or wrists
 - Unsteady walking or inability to walk or climb stairs
 - Difficulty with eye or facial movements, including speaking, chewing or swallowing
 - Severe pain that may feel achy or cramp-like and may be worse at night
 - Difficulty with bladder control or bowel function
 - Rapid heart rate
 - Low or high blood pressure
 - Difficulty breathing
- As Guillain-Barré syndrome progresses, muscle weakness can evolve into paralysis.
- Symptoms of Guillain-Barré syndrome can last a few weeks to several months.
 - Recovery from Guillain-Barré syndrome usually begins two to four weeks after the most severe point of weakness.
- Countries have reported an increased number of people who have been infected with Zika virus who also have Guillain-Barré syndrome.
- Diseases other than Zika are known to cause Guillain-Barré syndrome.
- Guillain-Barré syndrome occurs only in a small proportion of Zika cases.
- Scientists are working to understand the possible link between Zika and Guillain-Barré syndrome.

Soundbite (Shorter Answer):

1. *Zika during pregnancy has been associated with microcephaly (an abnormally small head associated with incomplete brain development).*
2. *Health authorities have observed increased cases of Guillain-Barré syndrome (a rare disorder of the nervous system) amongst Zika patients.*

104. Does Zika affect children and adults differently?

Shorter answer:

1. *To date, children and adults show the same Zika symptoms.*
2. *Zika is associated with developmental harm during pregnancy.*
3. *Zika has been associated with Guillain-Barré syndrome — a rare nervous system disorder which sometimes causes paralysis.*

Longer answer:

1. *To date, children and adults show the same Zika symptoms.*

- Most people infected with Zika do not know they have the disease because they do not have symptoms.
- The most common symptoms of Zika are mild fever, rash, joint pain, or “pink eye” (conjunctivitis).
- Additional common symptoms of Zika include muscle pain and headache.
- Symptoms of Zika typically last for several days to a week.

2. *Zika is associated with developmental harm during pregnancy.*

- An abnormally small head associated with incomplete brain development (microcephaly) has been associated with Zika in developing babies.
- Babies with an abnormally small head associated with incomplete brain development (microcephaly) can have a range of other health issues, e.g., developmental delays such as problems with speech, standing, walking, and learning.

3. *Zika has been associated with Guillain-Barré syndrome — a rare nervous system disorder which sometimes causes paralysis.*

- Common symptoms of Guillain-Barré syndrome symptoms are weakness of the arms and legs.
 - Symptoms of Guillain-Barré syndrome often begin with tingling and weakness in the feet and legs and spreading to the upper body and arms.
 - People with Guillain-Barré syndrome usually experience their most significant weakness within two to four weeks after symptoms begin.
 - In a small percentage of people with Guillain-Barré syndrome, symptoms begin in the arms or face.
 - Signs and symptoms of Guillain-Barré syndrome may include:
 - Prickling, "pins and needles" sensations in the fingers, toes, ankles or wrists
 - Unsteady walking or inability to walk or climb stairs
 - Difficulty with eye or facial movements, including speaking, chewing or swallowing
 - Severe pain that may feel achy or cramp-like and may be worse at night

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Continued - 104. Does Zika affect children and adults differently?

- Difficulty with bladder control or bowel function
- Rapid heart rate
- Low or high blood pressure
- Difficulty breathing
- As Guillain-Barré syndrome progresses, muscle weakness can evolve into paralysis.
- Symptoms of Guillain-Barré syndrome can last a few weeks to several months.
 - Recovery from Guillain-Barré syndrome usually begins two to four weeks after the most severe point of weakness.
 - Although most people fully recover from Guillain-Barré syndrome, some people experience permanent damage to their nervous system.
- Most cases of Guillain-Barré syndrome occur for no known reason.

Soundbite (Shorter Answer):

1. *To date, children and adults show the same Zika symptoms.*
2. *Zika is associated with developmental harm during pregnancy.*
3. *Zika has been associated with Guillain-Barré syndrome — a rare nervous system disorder which sometimes causes paralysis.*

105. Are there long-term effects of Zika?

Shorter answer:

1. *For most people, there does not appear to be long-term effects associated with Zika.*
2. *Children born with microcephaly, a birth defect, or people who contract Guillain-Barré Syndrome, a nervous system disorder, may have long-term health problems.*
3. *Some people, including those with no symptoms or signs of illness, could still have Zika in their bodies for weeks or months.*

Longer answer:

1. ***For most people, there does not appear to be long-term effects associated with Zika.***

- Symptoms of Zika are typically mild and people recover quickly.
- More research is needed regarding the long-term health effects of Zika.
- Men who are infected with Zika, may have the virus in their semen for months after infection.
- Women who were infected with Zika and have recovered are not believed to be at higher risk for birth defects in future pregnancies.
- Zika is a threat when a pregnant woman becomes infected and the threat is only for the baby currently being carried.
- Children born with microcephaly, a birth defect, or people who contract Guillain-Barré Syndrome, a nervous system disorder, may have long-term health problems.

2. ***Children born with microcephaly, a birth defect, or people who contract Guillain-Barré Syndrome, a nervous system disorder, may have long-term health problems.***

- Most people infected with Zika who have illness are sick for several days to a week.
- Children born with microcephaly (an abnormally small head associated with incomplete brain development) can have a range of health problems.
 - Problems from microcephaly (an abnormally small head associated with incomplete brain development) can range from mild to severe and are often lifelong.
 - Problems from microcephaly include seizures, developmental delay, and learning disabilities.
- Guillain-Barré syndrome (GBS) symptoms typically begins with weakness of the arms and legs and can evolve into paralysis.

3. ***Some people, including those with no symptoms or signs of illness, could still have Zika in their bodies for weeks or months.***

- The virus can be present in semen longer than in blood, and can be sexually transmitted by a man to his partners.

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Continued - 105. Are there long-term effects of Zika?

- In the known cases of Zika sexual transmission, the men developed Zika symptoms.
- It is unknown whether men who have Zika without symptoms can transmit Zika through sex.
- In men, the virus can be transmitted before, during, and after symptoms develop.
- It is not yet known how long the virus can stay in the semen of men who have had Zika.

Soundbite (Shorter Answer):

1. *For most people, there does not appear to be long-term effects associated with Zika.*
2. *Children born with microcephaly, a birth defect, or people who contract Guillain-Barré Syndrome, a nervous system disorder, may have long-term health problems.*
3. *Some people, including those with no symptoms or signs of illness, could still have Zika in their bodies for weeks or months.*

106. Can pets and livestock be infected with Zika virus?

Shorter answer:

1. *It is possible for pets and livestock to be exposed to Zika, but the risk of infection is very low.*
2. *To date only nonhuman primates, such as monkeys and apes, have shown the ability to become infected with Zika.*
3. *There is no evidence that Zika is spread to people from contact with animals.*

Longer answer:

1. *It is possible for pets and livestock to be exposed to Zika, but the risk of infection is very low.*

- Being exposed to the virus is not the same thing as being infected — or becoming ill — as a result of coming into contact with Zika virus.
- There is no evidence to date that pets and livestock can get sick from Zika virus exposure.
- To date, there have not been reports of pets or livestock being infected with Zika virus or having illness as a result of being infected with Zika virus.
- There is limited evidence that horses, cows, goats, ducks, and bats could become infected with Zika, but no evidence that they develop disease or that they could spread Zika virus to humans.

2. *To date only nonhuman primates, such as monkeys and apes, have shown the ability to become infected with Zika.*

- Zika was first discovered in a monkey with a mild fever in the Zika Forest of Uganda in 1947.
- Only a few naturally and experimentally infected monkeys and apes have had any signs of illness from Zika.
 - The most common symptom of Zika infection among nonhuman primates is a short, mild fever without any other symptoms.
- An abnormally small head associated with incomplete brain development (microcephaly) has not been reported among monkeys or apes in areas where Zika is present.

3. *There is no evidence that Zika is spread to people from contact with animals.*

- Zika virus is transmitted to people primarily through the bite of infected *Aedes* species of mosquito — *Aedes aegypti* or *Aedes albopictus*.
- *Aedes* mosquitoes generally prefer feeding off humans rather than pets or livestock.
- Pets that spend time outside as well as inside can be bitten by mosquitoes.
- Using insect repellants, flea or tick collars, or topical treatments for dogs and cats can kill mosquitoes.

Continued on next page.



Continued - 106. Can pets and livestock be infected with Zika virus?

Soundbite (Shorter Answer):

1. *It is possible for pets and livestock to be exposed to Zika, but the risk of infection is very low.*
2. *To date only nonhuman primates, such as monkeys and apes, have shown the ability to become infected with Zika.*
3. *There is no evidence that Zika is spread to people from contact with animals.*



107. Could someone get Zika more than once in their lifetime?

Shorter answer:

1. *Based on current knowledge, a Zika infection may trigger lifelong immunity.*
2. *Most people may be unaware of a Zika infection and thus won't know if they have immunity.*
3. *It is possible that longer-term immunity may be related to the strain of Zika virus.*

Longer answer:

1. ***Based on current knowledge, a Zika infection may trigger lifelong immunity.***

- Because of the lack of long-term studies, available evidence is unclear whether a Zika infection will prevent future Zika infections.
- Viruses can and do change over time, and it is possible that Zika will evolve.
- If the Zika virus were to mutate or change, people infected with a previous strain of Zika may not be immune to a new one.
- It will take more time and research to know for certain that infection with Zika virus provides lifelong immunity or how long the protection is if it is not lifelong.

2. ***Most people may be unaware of a Zika infection and thus won't know if they have immunity.***

- Most people infected with Zika may not have any symptoms or signs of illness or infection.
- If people are unaware that they have been infected with Zika, neither they nor their healthcare provider will know if they have immunity.
- Since most people are unlikely to know if they were infected, and thus whether they have immunity, it is important for most people to take protective actions when in Zika areas.
- Immunity against Zika does not protect against other diseases spread by mosquitoes, such as dengue and chikungunya.

3. ***It is possible that longer-term immunity may be related to the strain of Zika virus.***

- Because of the lack of long-term studies, available tests for Zika immunity are not useful or widely available.
- When laboratory tests are widely available, the ability to find different strains of the Zika virus will increase.
- People infected with one strain of Zika virus may not be immune to a different strain of the virus.

{Technical Note: With the dengue virus, where there are four known strains, people can be infected with multiple strains.}

Continued on next page.

Continued - 107. Could someone get Zika more than once in their lifetime?

Soundbite (Shorter Answer):

1. *Based on current knowledge, a Zika infection may trigger lifelong immunity.*
2. *Most people may be unaware of a Zika infection and thus won't know if they have immunity.*
3. *It is possible that longer-term immunity may be related to the strain of Zika virus.*



V. 200 series: Pregnancy

<u>201.</u>	<u><i>If a woman thinks she has been exposed to Zika, how long should she wait before trying to become pregnant?</i></u>	17
<u>202.</u>	<u><i>How sure are we that Zika causes microcephaly (an abnormally small head associated with incomplete brain development)?</i></u>	18
<u>203.</u>	<u><i>What about pregnant women and Zika?</i></u>	20
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201. If a woman thinks she has been exposed to Zika, how long should she wait before trying to become pregnant?

Shorter Answer:

1. *Women and men should avoid getting or causing pregnancy for 8 weeks after returning from a Zika affected area.*
2. *If exposure to Zika is suspected, a woman desiring pregnancy should use effective contraception.*
3. *A previous Zika infection is unlikely to cause birth defects in future pregnancies.*

Longer Answer:

1. ***Women and men should avoid getting or causing pregnancy for 8 weeks after returning from a Zika affected area.***
 - Men with symptoms of Zika should avoid causing pregnancy for 6 months.
 - The bloodstream is likely free of Zika within 7 days from the onset of symptoms.
 - Conception is likely safe after the Zika virus is gone from the mother's blood.
 - There is no evidence that a baby conceived after the Zika virus has been eliminated from the mother's bloodstream would be at risk for Zika illness or birth defects.
2. ***If exposure to Zika is suspected, a woman desiring pregnancy should use effective contraception.***
 - Because many pregnancies are unintended, couples should be counseled to use the most effective contraceptive method that can be used correctly and consistently.
 - For women desiring highly effective contraception, long acting reversible contraception, including contraceptive implants and intrauterine devices, might be the best choice.
3. ***A previous Zika infection is unlikely to cause birth defects in future pregnancies.***
 - More research is needed to best understand whether a previous Zika infection produces protection from future Zika infections.
 - Once a person recovers from Zika, they are likely to have immunity from future infections.

Soundbite (Shorter Answer):

1. *Women and men should avoid getting or causing pregnancy for 8 weeks after returning from a Zika affected area.*
2. *If exposure to Zika is suspected, a woman desiring pregnancy should use effective contraception.*
3. *A previous Zika infection is unlikely to cause birth defects in future pregnancies.*

202. How sure are we that Zika causes microcephaly (an abnormally small head associated with incomplete brain development)?

Shorter Answer:

1. *There is scientific consensus that Zika can cause microcephaly (an abnormally small head associated with incomplete brain development) and other birth defects.*
2. *Microcephaly (an abnormally small head associated with incomplete brain development) can happen for many reasons.*
3. *Zika can cause abnormal birth outcomes beyond microcephaly (an abnormally small head associated with incomplete brain development).*
4. *There is no evidence that microcephaly (an abnormally small head associated with incomplete brain development) is caused by vaccines, the insecticide pyriproxyfen, nor sterilized male mosquitoes.*

Longer Answer:

1. ***There is scientific consensus that Zika can cause microcephaly (an abnormally small head associated with incomplete brain development) and other birth defects.***
 - In a New England Journal of Medicine report, CDC authors describe a rigorous weighing of evidence using established scientific criteria that shows that Zika causes microcephaly (an abnormally small head associated with incomplete brain development) and other birth defects.
 2. ***Microcephaly (an abnormally small head associated with incomplete brain development) can happen for many reasons.***
 - Microcephaly (an abnormally small head associated with incomplete brain development) can be caused by a variety of environmental and genetic factors.
 - Microcephaly (an abnormally small head associated with incomplete brain development) can be caused by factors such as Down syndrome, exposure to drugs, alcohol or other toxins in the womb, and maternal rubella infection during pregnancy.
 - Other viral infections can cause microcephaly (an abnormally small head associated with incomplete brain development) during pregnancy.
 3. ***Zika can cause abnormal birth outcomes beyond microcephaly (an abnormally small head associated with incomplete brain development).***
 - In addition to microcephaly (an abnormally small head associated with incomplete brain development), other problems have been detected among developing babies with Zika before birth.
- Continued on next page.**

Continued - 202. How sure are we that Zika causes microcephaly (an abnormally small head associated with incomplete brain development)?

- Other problems among developing babies with Zika include absent or poorly developed brain structures, defects of the eye, hearing deficits, and impaired growth.
- Although Zika has been linked with birth problems other than microcephaly (an abnormally small head associated with incomplete brain development), experts need to better understand these findings.
- Researchers are collecting data to better understand the extent of Zika on mothers and their children.

4. *There is no evidence that microcephaly (an abnormally small head associated with incomplete brain development) is caused by vaccines, the insecticide pyriproxyfen, nor sterilized male mosquitoes.*

- In 2014, the World Health Organization's Global Advisory Committee on Vaccine Safety found no evidence that any vaccine administered during pregnancy resulted in birth defects.
 - Experts found no evidence that a specific insecticide, pyriproxyfen, used for mosquito control, affects pregnancy or developing babies
 - Expert organizations that have examined this issue include the World Health Organization, the U.S. Environmental Protection Agency, and the European Union.
 - Studies done in Brazil show no evidence that Zika or microcephaly (an abnormally small head associated with incomplete brain development) is caused by sterilized male mosquitoes.

Soundbite (Shorter Answer):

1. *There is scientific consensus that Zika can cause microcephaly (an abnormally small head associated with incomplete brain development) and other birth defects.*
2. *Microcephaly (an abnormally small head associated with incomplete brain development) can happen for many reasons.*
3. *Zika can cause abnormal birth outcomes beyond microcephaly (an abnormally small head associated with incomplete brain development).*
4. *There is no evidence that microcephaly (an abnormally small head associated with incomplete brain development) is caused by vaccines, the insecticide pyriproxyfen, nor sterilized male mosquitoes.*

203. What about pregnant women and Zika?

Shorter Answer:

1. *Zika is associated with birth defects and more research is needed to understand it.*
2. *The best prevention for pregnant women concerned about Zika is preventing mosquito bites.*
3. *Pregnant women concerned about Zika should seek specific medical advice from their healthcare provider.*

Longer Answer:

1. *Zika is associated with birth defects and more research is needed to understand it.*

- Zika has been associated with increased reports of an abnormally small head associated with incomplete brain development (microcephaly) in children born in area where Zika is spreading.
 - Microcephaly is a birth defect where a baby's head is smaller than expected when compared to babies of the same sex and age.
 - Babies with microcephaly often have smaller brains than expected when compared to babies of the same sex and age.
- Evidence exists that Zika is associated with microcephaly but more research is needed to understand the association and how Zika may cause it.
- There are many unknowns regarding Zika and pregnancy.
 - It is unknown the proportion of pregnant women with Zika infection in areas with Zika transmission.
 - It is unknown the likelihood of the developing baby getting infected from the mother.
 - It is unknown the proportion of developing babies that develop microcephaly — abnormally small head associated with incomplete brain development.
 - It is unknown what factors increase risk to the developing baby.
- The many unknowns regarding Zika and pregnancy make it difficult for healthcare providers to offer advice patients with potential Zika virus exposure.
- The World Health Organization's designation of Zika as a global health emergency will help coordinate the many efforts to get desperately needed answers.
- The World Health Organization's designation of Zika as a global health emergency will help coordinate efforts to identify new Zika cases across countries.

2. *The best prevention for pregnant women concerned about Zika is preventing mosquito bites.*

- Mosquito control programs are effective in reducing the spread of disease.

Continued on next page.



Continued - 203. What about pregnant women and Zika?

- Mosquito bites can be prevented by using insect repellent on exposed skin at all times and wearing long pants, long sleeves, shoes and hats.
- Insect repellents must contain DEET, which has been shown to be safe in pregnant women when used as recommended on the label.
- Clothing can be treated with permethrin to prevent mosquito bites.
- Mosquito protection is required day and night because some mosquitoes that carry Zika bite during daylight hours.

3. *Pregnant women concerned about Zika should seek specific medical advice from their healthcare provider.*

- CDC recommends that pregnant women not travel to an area with active Zika virus transmission.
- Women should consult with their healthcare provider for specific medical advice, concerns and any testing for Zika related to a potential or actual pregnancy.
- Women should closely monitor the advice and recommendations from official sources, such as their local health department as made available on the internet or community bulletins.

Soundbite (Shorter Answer):

1. *Zika is associated with birth defects and more research is needed to understand it.*
2. *The best prevention for pregnant women concerned about Zika is preventing mosquito bites.*
3. *Pregnant women concerned about Zika should seek specific medical advice from their healthcare provider.*

204. What is the risk to my baby if I get a Zika-infected mosquito bite?

Shorter Answer:

1. *The exact risk of Zika to a developing baby is unknown and depends upon many factors.*
2. *The best way to reduce a baby's risk of Zika is for the mother to protect herself from mosquito bites.*
3. *Women should seek advice from their healthcare provider if they reside in or are traveling to a Zika infected area.*

Longer Answer:

1. *The exact risk of Zika to a developing baby is unknown and depends upon many factors.*

- Only a small fraction of mosquitoes carry the Zika virus.
- Most mosquito bites are from types of mosquitoes that do not carry Zika virus.
- Few people with Zika experience symptoms.
 - Even when someone has Zika symptoms, illness from Zika is usually mild.
- If a pregnant woman is bitten by a Zika infected mosquito, experts cannot exactly predict how likely she is to get Zika.
- If a pregnant woman is infected with Zika, experts cannot exactly predict how the virus will affect her pregnancy.
- Experts are investigating a large number of unknowns about Zika and pregnancy.
 - Unknowns about Zika and pregnancy include the following:
 - The likelihood that a pregnant woman with Zika will pass it to her developing baby.
 - If a developing baby is infected with Zika whether he/she will develop birth defects.
 - When during a pregnancy that Zika infection might cause harm to the developing baby.

2. *The best way to reduce a baby's risk of Zika is for the mother to protect herself from mosquito bites.*

- Mosquito bites can be prevented by using insect repellent on exposed skin at all times and wearing long pants, long sleeves, shoes and hats.
- Insect repellents with DEET have been shown to be safe for use by pregnant women when used as recommended on the label.
- Mosquito protection is required day and night because mosquitoes that carry Zika virus bite during daylight hours.

Continued on next page.



Continued - 204. What is the risk to my baby if I get a Zika-infected mosquito bite?

3. Women should seek advice from their healthcare provider if they reside in or are traveling to a Zika infected area.

- Women who are pregnant or think they might get pregnant should consult with their healthcare provider for advice, regarding testing for Zika.
- Experts advise pregnant women with potential Zika exposure to tell their healthcare provider about their travels.
- Pregnant women who have visited a Zika-infected area should be tested for Zika whether or not they have symptoms.
 - Pregnant women who live in Zika-infected areas should be tested at least twice during their pregnancy.
 - If testing indicates infection with Zika, the healthcare provider will provide additional recommendations based on current expert guidance.*
 - Pregnant women who have visited areas with active Zika transmission should have a blood test for the virus, whether or not they have symptoms.
 - Pregnant women who may have been exposed to Zika should have at least one ultrasound looking for evidence of developing baby abnormalities.
- Women should closely monitor the advice and recommendations from official sources, such as their local health department.

{Technical Note: For current guidance for healthcare providers, please visit:
<http://www.cdc.gov/zika/hc-providers/index.html>}

Soundbite (Shorter Answer):

1. *The exact risk of Zika to a developing baby is unknown and depends upon many factors.*
2. *The best way to reduce a baby's risk of Zika is for the mother to protect herself from mosquito bites.*
3. *Women should seek advice from their healthcare provider if they reside in or are traveling to a Zika infected area.*



205. What should a woman do if she finds out she is pregnant and had Zika or thinks she was exposed to Zika?

Shorter Answer:

1. *Pregnant women should consult their healthcare provider if they think they have been exposed to Zika.*
2. *Since there are many unknowns, the risk to a pregnant woman from Zika is unpredictable.*
3. *Suspected Zika infection can be confirmed by laboratory testing.*
4. *Laboratory testing and clinical evaluation for Zika is recommended for certain infants.*
5. *Infants with laboratory evidence or abnormalities consistent with Zika need ongoing, additional health care.*

Longer Answer:

1. ***Pregnant women should consult their healthcare provider if they think they have been exposed to Zika.***
 - Women should consult with their healthcare provider for advice related to Zika and pregnancy.
 - Women should closely monitor recommendations from official sources, such as their local health department.
 - Pregnant women who have recently travelled to an area with Zika should see a healthcare provider even if they feel well and have no symptoms.
2. ***Since there are many unknowns, the risk to a pregnant woman from Zika is unpredictable.***
 - If a pregnant woman is bitten by a Zika infected mosquitoes, experts cannot exactly predict how likely she is to get Zika.
 - If a pregnant woman is infected with Zika, experts cannot predict how the virus will affect her pregnancy.
 - Experts are investigating a large number of unknowns about Zika and pregnancy.
 - There are many unknowns about Zika and pregnancy, which include the following:
 - The likelihood a pregnant woman with Zika will pass it to her developing baby;
 - If a developing baby is infected with Zika whether he/she will develop birth defects;
 - When during a pregnancy that Zika infection might cause harm to the developing baby.
3. ***Suspected Zika infection can be confirmed by laboratory testing.***
 - Infection with Zika virus may be suspected based on symptoms and recent history, such as living in or traveling to an area known to have Zika.
 - Zika illness can be confirmed by laboratory testing for the presence of Zika in the blood.
 - Blood tests for Zika include testing for Zika viral material and antibodies to Zika proteins.

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Continued - 205. What should a woman do if she finds out she is pregnant and had Zika or thinks she was exposed to Zika?

- Because the symptoms of Zika are similar to other mosquito-borne diseases, pregnant women should be evaluated for other infections such as dengue.

{Technical Note on laboratory testing of pregnant women:

- Symptomatic pregnant women who seek care <2 weeks after symptom onset are recommended to have **serum, whole blood, and urine testing** by rRT-PCR. Symptomatic pregnant women who seek care 2–12 weeks after symptom onset should first receive Zika virus and dengue virus IgM antibody testing.
- Asymptomatic pregnant women living in areas without active Zika virus transmission who are evaluated <2 weeks after possible Zika virus exposure should be offered **serum, whole blood, and urine rRT-PCR testing**. Asymptomatic pregnant women living in an area without active Zika virus transmission, who seek care 2–12 weeks after possible Zika virus exposure, should be offered Zika virus IgM antibody testing.
- For current guidance for healthcare providers, please visit: <http://www.cdc.gov/zika/hc-providers/index.html> }

{Technical Note on CDC's enhanced Zika surveillance systems:

- The CDC will begin reporting the total number of pregnant women with Zika virus infection from two newly established enhanced surveillance systems: the U.S. Zika Pregnancy Registry and the Puerto Rico Zika Active Pregnancy Surveillance System.
- These new numbers reflect a broader group of pregnant women — pregnant women who have any laboratory evidence of possible Zika virus infection, and whether or not they recalled symptoms — compared with numbers previously reported.}

4. Laboratory testing and clinical evaluation for Zika is recommended for certain infants.

- Infants born to mothers with laboratory evidence of Zika infection during pregnancy should be tested.
- Infants who have abnormal clinical or neuro-imaging findings suggestive of congenital Zika syndrome and a maternal epidemiologic link suggesting possible transmission should be tested for Zika – regardless of maternal Zika virus test results.
- In addition to infant Zika virus testing, initial evaluation of all infants born to mothers with laboratory evidence of Zika virus infection during pregnancy should include a comprehensive physical examination.
 - This should include a neurologic examination, postnatal head ultrasound, and standard newborn hearing test.

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Continued - 205. What should a woman do if she finds out she is pregnant and had Zika or thinks she was exposed to Zika?

5. *Infants with laboratory evidence or abnormalities consistent with Zika need ongoing, additional health care.*

- These infants should have a coordinated evaluation by multiple specialists within the first month of life.
- These infants should have ongoing developmental monitoring and screening by a primary care provider
- These infants should have a comprehensive ophthalmologic exam and hearing assessment by auditory brainstem response (ABR) before 1 month of age.
 - Repeat hearing testing is recommended for these infants.
- Additional health evaluations will be needed within the first year of life, including assessments of vision, hearing, feeding, growing, and neurodevelopmental and endocrine function.

Soundbite (Shorter Answer):

1. *Pregnant women should consult their healthcare provider if they think they have been exposed to Zika.*
2. *Since there are many unknowns, the risk to a pregnant woman from Zika is unpredictable.*
3. *Suspected Zika infection can be confirmed by laboratory testing.*
4. *Laboratory testing and clinical evaluation for Zika is recommended for certain infants.*
5. *Infants with laboratory evidence or abnormalities consistent with Zika need ongoing, additional health care.*

206. What can a man who has traveled or plans travel to an area with active Zika transmission do to prevent giving Zika to a pregnant woman?

Shorter Answer:

1. *Men can sexually transmit Zika to women through semen.*
2. *Men who have traveled to, plan travel, or reside in an area with active Zika transmission should abstain from sex or use condoms with a pregnant woman.*
3. *Suspected Zika infection can be confirmed by laboratory testing.*

Longer Answer:

1. *Men can sexually transmit Zika to women through semen.*

- The most common way for Zika to spread is through the bite of an infected mosquito.
- Zika virus has been found in semen months after symptoms of infection disappeared.
- Scientists believe that the Zika virus may hide in organs protected from the immune system, such as male sex organs.
 - If the Zika virus enters a protected organ, it is much harder to fight.
- Transmission through sex has been reported in some countries.
 - In each case where details were available, the man who sexually transmitted Zika had symptoms of Zika.
- There are many unknowns regarding male transmission of Zika.
 - It is not known whether men must develop symptoms of Zika to be infectious.
 - It is not known whether men must have blood in their semen to be infectious for Zika.
 - It is not known how long a man can remain infectious for Zika.

2. *Men who have traveled to, plan travel, or reside in an area with active Zika transmission should abstain from sex or use condoms with a pregnant woman.*

- Health authorities recommend that women who are pregnant or trying to become pregnant avoid contact with semen from men who have visited areas where the Zika virus is transmitted.
 - Couples in which a woman is pregnant should abstain or use condoms consistently and correctly for the duration of the pregnancy.
 - Sexual contact includes vaginal intercourse, anal intercourse, or fellatio (oral sex).
- Recommended durations of strict condom use or abstaining from sex depend on whether men had confirmed infection or clinical illness consistent with Zika virus disease and whether men are residing in an area with active transmission.
 - Men who have been infected with Zika should wait at least six months after their symptoms first appear to have unprotected sex.

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Continued - 206. What can a man who has traveled or plans travel to an area with active Zika transmission do to prevent giving Zika to a pregnant woman?

- Regardless of whether they have symptoms, men with possible Zika exposure who are considering pregnancy with their partner should wait at least 6 months after last possible exposure or symptom onset before trying to conceive.
- Men who reside in an area with active Zika transmission should consider using condoms or abstain while active transmission persists.

3. Suspected Zika infection can be confirmed by laboratory testing.

- Infection with Zika virus may be suspected based on symptoms and recent history, such as living in or traveling to an area known to have Zika.
- Zika illness can be confirmed by laboratory testing for the presence of Zika in the blood.
 - Blood tests for Zika include testing for Zika viral material and antibodies.
- Zika virus has been found in semen when blood testing was negative.
- Tests for Zika in semen are limited and difficult to interpret.
 - There are no commercial tests for Zika in semen, so healthcare facilities cannot test for Zika like they do for HIV.
- Because the symptoms of Zika are similar to other mosquito-borne diseases, a man concerned about Zika should be evaluated for other infections such as dengue.

Soundbite (Shorter Answer):

1. *Men can sexually transmit Zika to women through semen.*
2. *Men who have traveled to, plan travel, or reside in an area with active Zika transmission should abstain from sex or use condoms with a pregnant woman.*
3. *Suspected Zika infection can be confirmed by laboratory testing.*

207. What can States and Territories do to help non-pregnant women who wish to delay or avoid pregnancy in the context of preparedness for Zika?

Shorter Answer:

1. *Women who wish to avoid or delay pregnancy should have ready access to contraceptive methods.*
2. *States and Territories can help educate people on preventing pregnancy and Zika transmission.*
3. *States and Territories can educate people on mosquito control strategies.*

Longer Answer:

1. ***Women who wish to avoid or delay pregnancy should have ready access to contraceptive methods.***
 - The full range of contraceptive methods approved by the Food and Drug Administration (FDA) should be readily available and accessible for women who want to avoid or delay pregnancy.
 - Long-acting reversible contraceptives (LARCs) should be readily available and accessible to women who want to avoid or delay pregnancy.
 - States and Territories can provide information about effective contraception to avoid unintended pregnancy.
 - States and Territories can provide education on condom use to avoid sexual transmission to pregnant women.
 - States and Territories can provide contraceptive counseling for women who want to delay or avoid pregnancy.
2. ***States and Territories can help educate people on preventing pregnancy and Zika transmission.***
 - States and Territories can help with identifying, diagnosing, and clinically managing infection and exposure among pregnant women.
 - States and Territories can help with prevention efforts for all women and men of reproductive age to include targeted education about Zika virus and its transmission.
3. ***States and Territories can educate people on mosquito control strategies.***
 - People should eliminate standing water in your home, yard, workplace, neighborhood, and community.
 - People should consider consulting with a professional certified mosquito control company.
 - People should reduce or eliminate mosquitoes in your home and yard by using screens and other barriers.

Continued on next page.



Continued - 207. What can States and Territories do to help non-pregnant women who wish to delay or avoid pregnancy in the context of preparedness for Zika?

Soundbite (Shorter Answer):

- 1. Women who wish to avoid or delay pregnancy should have ready access to contraceptive methods.*
- 2. States and Territories can help educate people on preventing pregnancy and Zika transmission.*
- 3. States and Territories can educate people on mosquito control strategies.*



VI. 300 series: Preparedness and Protection

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301. What can people do to prevent infection with Zika?

Shorter Answer:

1. *Eliminate mosquito breeding sites.*
2. *Because there is no Zika vaccine, you must protect yourself and your partners from mosquito bites.*
3. *Because there is no Zika vaccine, use mesh screens and other physical barriers.*
4. *Because there is no Zika vaccine, use insect repellents.*

Longer Answer:

1. *Eliminate mosquito breeding sites.*

- Mosquitoes that carry the Zika virus breed wherever water accumulates including clean water.
 - Common breeding sites for mosquitoes in homes include storage tanks, bird basins, flowerpots, toys, tubs, roof gutters, ditches, and used tires.
 - Getting rid of mosquitoes is not enough: eliminate breeding grounds for mosquito eggs and larvae.
- Drain, dump out, and cover containers where mosquitoes can breed.
- A container as small as a bottle cap holds sufficient water for Zika-infected mosquitoes to breed.
 - Consider bringing in a professional to survey, fumigate, and clean out breeding sites.
- Lead or join community actions to eliminate breeding sites for mosquitoes.
 - Report mosquito-breeding sites in public places to appropriate authorities.
 - Survey and eliminate mosquito-breeding sites at schools, such as water tanks, play areas, pools, school gardens, and water fountains.
 - Survey and eliminate mosquito-breeding sites at public spaces, such as parks, gardens, community centers, playgrounds, fields, markets, and cemeteries.

2. *Because there is no Zika vaccine, you must protect yourself and your partners from mosquito bites.*

- Wear light colored clothing that covers as much as possible.
- Wear long pants, long sleeves, shoes, and hats.
- Since mosquitoes carrying Zika virus frequently bite during the daytime, wear protective clothing throughout the day.
- Wear permethrin-treated clothing.
- Consider postponing travel to areas where the Zika virus is spreading.
- Strictly follow steps to prevent mosquito bites in the home and workplace.

Continued on next page.



Continued - 301. What can people do to prevent infection with Zika?

3. Because there is no Zika vaccine, use mesh screens and other physical barriers.

- Cover windows with screens and curtains.
- Use door screens.
- Sleep under treated mosquito nets.
- Stay and sleep in screened-in rooms and rooms with air conditioners.
- Keep doors and windows closed.

4. Because there is no Zika vaccine, use insect repellents.

- Use insect repellents approved and recommended by official health authorities, such as DEET.
- Since mosquitoes carrying the Zika virus frequently bite during daytime, use insect repellents throughout the day.
- Use insect repellents strictly according to the instructions on the label.
 - Do not use insect repellents for babies under 2 months of age.
 - Reapply insect repellent as directed.
 - Do not spray repellent on the skin under clothing.
 - If using sunscreen, apply sunscreen before applying insect repellent.
 - Treat clothing and gear with permethrin or buy permethrin-treated items.
 - Treated clothing remains protective after multiple washings.
 - Read product information to learn how long the protection will last.
 - Do not use permethrin products directly on skin as they are intended to treat clothing.
 - Do not apply insect repellent onto a child's hands, eyes, mouth, and cut or irritated skin.
- Seek advice from a healthcare provider about insect repellents if you are pregnant or thinking of getting pregnant.
 - Closely monitor advice and recommendations regarding insect repellents from official health sources.
 - Consider postponing travel to areas where the Zika virus is spreading.

Soundbite (Shorter Answer):

1. *Eliminate mosquito breeding sites.*
2. *Because there is no Zika vaccine, you must protect yourself and your partners from mosquito bites.*
3. *Because there is no Zika vaccine, use mesh screens and other physical barriers.*
4. *Because there is no Zika vaccine, use insect repellents.*

302. Is there a test that can tell if someone has Zika?

Shorter Answer:

1. Suspected Zika can be confirmed by laboratory testing.
2. Laboratory testing is recommended for pregnant women with Zika-like illness.
3. Ultrasound and fluid testing (amniocentesis) are useful for detecting Zika later in pregnancy.

Longer Answer:

1. Suspected Zika can be confirmed by laboratory testing.

- Infection with Zika is suspected based on symptoms and on recent history, such as living in or traveling to an area known to have Zika.
- Persons with possible Zika virus exposure who have symptoms of Zika virus disease should receive testing in accordance with CDC interim guidance.
- CDC “does not recommend Zika virus testing of nonpregnant persons with possible Zika virus exposure who do not have symptoms of Zika virus disease, including persons who are planning to attempt conception, or to assess the risk for sexual transmission of Zika virus.”
- Zika illness can be confirmed by laboratory testing for the presence of Zika in the blood and urine.
 - The FDA has approved a blood test for clinical use.

{Technical Note: The FDA authorized Emergency Use Authorization (EUA) for three diagnostic tools for Zika virus, the Zika MAC-ELISA, Viracor-IBT’s Zika Virus Real-time RT-PCR, and Trioplex Real-Time RT-PCR Assay, which are being distributed to qualified laboratories that are certified to perform high-complexity tests in the United States. These tests can detect Zika virus in the blood of patients who have symptoms of Zika virus infection and live in or have traveled to an area with active Zika virus transmission.}

- The Centers for Disease Control and Prevention (CDC) has updated its interim testing recommendations for public health laboratories showing that Zika virus genetic material can be found earlier and more easily in urine than blood (serum).

{Technical Note: 1) Zika virus genetic material testing (rRT-PCR) should be performed on urine collected ≤14 days after illness onset; 2) Zika virus rRT-PCR testing should continue to be performed on serum or whole blood specimens collected <7 days after illness onset; 3) A positive Zika rRT-PCR result is evidence of a current Zika virus infection; and 4) Because viremia decreases over time, and dates of illness onset may not be accurately reported, a negative rRT-PCR test does not exclude Zika virus infection, and IgM antibody testing should be performed.}

- Because many of the symptoms of Zika are similar to that of other viral illnesses, evaluation for similar illnesses like dengue or chikungunya virus infection is recommended.

Continued on next page.



Continued - 302. Is there a test that can tell if someone has Zika?

2. Laboratory testing is recommended for pregnant women with Zika-like illness.

- Pregnant women should see their doctor or other healthcare provider if they develop a mild fever, rash, joint pain, or “pink eye” (conjunctivitis) within 2 weeks after traveling to a place where Zika has been reported.
- All pregnant women in the United States and U.S. territories should be assessed for possible Zika virus exposure at each prenatal care visit. Testing for Zika can include Zika virus antibodies.
- Testing should be performed 2-12 weeks after travel.

{Technical Note: Laboratory evidence of Zika infection includes: 1) Zika virus genetic material in any clinical specimen or 2) positive Zika virus antibody with confirmatory neutralizing antibody levels \geq 4-fold higher than dengue virus neutralizing antibody titers in serum.}

3. Ultrasound and fluid testing (amniocentesis) are useful for detecting Zika later in pregnancy.

- Ultrasound might not detect an abnormally small head associated with incomplete brain development (microcephaly) until the late second or early third trimester of pregnancy.
- Fetal fluid sampling (amniocentesis) is not recommended until after 15 weeks of pregnancy.

{Technical Note: Amniotic fluid can be tested for Zika viral genetic material by reverse transcriptase polymerase chain reaction (RT-PCR). The sensitivity and specificity of RT-PCR testing on amniotic fluid are not known.}

Soundbite (Shorter Answer):

1. Suspected Zika can be confirmed by laboratory testing.
2. Laboratory testing is recommended for pregnant women with Zika-like illness.
3. Ultrasound and fluid testing (amniocentesis) are useful for detecting Zika later in pregnancy.

303. What can communities do to prepare for Zika?

Shorter answer:

1. *The most important weapon in the fight against Zika is prevention.*
2. *Communities that need most to prepare are those where Zika-carrying mosquitoes are found.*
3. *Communities can reduce mosquito breeding sites and encourage people to avoid mosquito bites.*

Longer answer:

1. *The most important weapon in the fight against Zika is prevention.*

- Preventing mosquito bites is the best strategy to fight Zika.
- The best ways to prevent mosquito bites is to wear long-sleeved shirts and pants, stay in places with air conditioning and screened windows (if available), and use insect repellent that contains DEET.
- For women who are pregnant or are trying to conceive, travel to areas where Zika is occurring should be postponed or avoided.
- Male sexual partners who have traveled to countries with Zika outbreaks should use condoms and practice safe sex if their partner is pregnant or may get pregnant.

2. *Communities that need most to prepare are those where Zika-carrying mosquitoes are found.*

- Communities must enlist the assistance of the entire community to fight Zika.
- Effective control of mosquitoes requires the involvement of the entire community.
- Communities must mobilize to identify and eliminate potential mosquito breeding sites.
- Communities must educate citizens on how to eliminate mosquitoes in their yards and neighborhoods.
- Communities must have systems in place to identify potential or confirmed Zika cases.
- Community health departments and healthcare providers must report confirmed cases of Zika to health authorities at the regional and national level.
- Communities in warm and humid geographical areas must be ready to expand local mosquito control programs.

3. *Communities can reduce mosquito breeding sites and encourage people to avoid mosquito bites.*

- Communities can help inform citizens about ways to eliminate mosquito breeding sites.
- Communities can help educate citizens about how to avoid mosquito bites.

Continued on next page.



Continued - 303. What can communities do to prepare for Zika?

- Communities can assist citizens with the placement or repair of window screens, door screens, and air conditioners (if appropriate).
- Communities can help inform travelers about the places where Zika is spreading.
- Healthcare providers in communities should know the symptoms and risks associated with Zika.
 - Healthcare providers should ask patients concerned about Zika, especially pregnant women, about recent travel.

Soundbite (Shorter answer):

1. *The most important weapon in the fight against Zika is prevention.*
2. *Communities that need most to prepare are those where Zika-carrying mosquitoes are found.*
3. *Communities can reduce mosquito breeding sites and encourage people to avoid mosquito bites.*

304. How long will it take to develop a vaccine for Zika?

Shorter Answer:

1. *Scientists are working to develop a Zika vaccine.*
2. *Creating and testing a vaccine normally takes years.*
3. *Until a vaccine is developed, the best way to prevent Zika is protection against mosquito bites.*

Longer Answer:

1. *Scientists are working to develop a Zika vaccine.*

- On June 20, 2016, the U.S. Food and Drug Administration approved the first experimental vaccine for Zika.
 - The new approved experimental Zika vaccine, called GLS-5700, was co-developed by U.S. and Korean companies.
 - Human clinical trials of the new vaccine are expected to begin in the early summer of 2016.
 - Initial results from animal studies of the new Zika vaccine indicate the new Zika vaccine improves the body's immune response to Zika.
- Scientists have found two potential vaccine candidates that may help combat the Zika virus.
 - As reported in the journal *Nature* in June 2016, a single shot of each vaccine candidate was shown to completely protect mice against two strains of Zika.
 - The two Zika virus vaccine candidates still need to be tested on humans.
- Companies and governments have indicated they are at least 18 months away from large-scale testing of a Zika vaccine.
- The U.S. President has requested \$1.8 billion in emergency funding to support in part an accelerated effort to develop a Zika vaccine.

2. *Creating and testing a vaccine normally takes years.*

- A typical vaccine takes on average approximately 10 years to develop.
- A vaccine can be developed faster than 10 years if additional resources are made available.
- Vaccine development is typically lengthy because scientists and regulators need to be sure the vaccine is safe and effective.
- It often takes years of laboratory research to determine how to make an effective vaccine.
- Any candidate vaccine must go through at least three stages of clinical testing to determine safety, the dose needed, side effects, and effectiveness.

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Continued - 304. How long will it take to develop a vaccine for Zika?**3. *Until a vaccine is developed, the best way to prevent Zika is protection against mosquito bites.***

- Because there is no Zika vaccine, you must wear protective clothing.
 - Wear light colored clothing that covers as much as possible.
 - Wear long pants, long sleeves, shoes, and hats.
 - Since mosquitoes carrying the Zika virus frequently bite during daytime, wear protective clothing throughout the day.
 - Wear insect repellent treated clothing.
- Because there is no Zika vaccine, use mesh screens and other physical barriers.
 - Cover windows with screens and curtains.
 - Use door screens.
 - Sleep under treated mosquito nets.
 - Stay and sleep in screened-in rooms and rooms with air conditioners.
 - Keep doors and windows closed.
- Because there is no Zika vaccine, use insect repellents.
 - Use insect repellents approved and recommended by official health authorities, such as DEET.
 - Since mosquitoes carrying the Zika virus frequently bite during daytime, use insect repellents throughout the day.
 - Use insect repellents strictly according to the instructions on the label.
 - Do not use insect repellents for babies under 2 months of age.
 - Reapply insect repellent as directed.
 - Do not spray repellent on the skin under clothing.
 - If using sunscreen, apply sunscreen before applying insect repellent.
 - Treat clothing and gear with permethrin or buy permethrin-treated items.
 - Treated clothing remains protective after multiple washings.
 - Read product information to learn how long the protection will last.
 - Do not use permethrin products directly on skin as they are intended to treat clothing.
 - Do not apply insect repellent onto a child's hands, eyes, mouth, and cut or irritated skin.
 - Seek advice from a healthcare provider about insect repellents if you are pregnant or thinking of getting pregnant.

Soundbite (Shorter Answer):

1. *Scientists are working to develop a Zika vaccine.*
2. *Creating and testing a vaccine normally takes years.*
3. *Until a vaccine is developed, the best way to prevent Zika is protection against mosquito bites.*

305. What can be done to protect young children from mosquito bites?

Shorter Answer:

1. *Parents should use insect repellent on young children.*
2. *Don't let young children apply insect repellents.*
3. *Dress young children in protective clothing.*
4. *When feasible and practical, provide protective barriers between young children and mosquitoes.*

Longer answer:

1. *Parents should use insect repellent on young children.*

- Read the label carefully before applying insect repellents to young children.
- Use insect repellents that protect the child for more than one hour.
- Do not use insect repellents on babies younger than 2 months old.
- Consider skipping most products made with natural plant oils.
 - Testing indicates that most natural plant oils often do not last for more than 1 hour against *Aedes* mosquitoes and some fail almost immediately.
 - Products made with natural plant oils include blends of citronella, cedar oil, rosemary oil, cinnamon oil, and lemongrass oil.
 - Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 years old.

2. *Don't let young children apply insect repellents.*

- Put the repellent on your own hands, then rub it on.
- Limit use of repellents on children's hands, because they often put their hands in their eyes and mouths.
- Do not apply insect repellent onto a child's eyes, mouth, cut or irritated skin.
- When applying insect repellent to the face of a young child, first spray the insect repellent onto your own hands and then apply it to child's face.
- Apply repellents only to exposed skin or clothing — never put it on under clothing.
- Use just enough insect repellent to cover and only for as long as needed; heavy doses don't work better.

3. *Dress children in protective clothing.*

- Dress children in clothing that covers their arms and legs.
- Dress children in long-sleeved pants and shirts when outdoors.

Continued on next page.



Continued - 305. What can be done to protect young children from mosquito bites?

4. When feasible and practical, provide protective barriers between children and mosquitoes.

- Cover the child's crib, stroller, and baby carrier with mosquito netting.
- Cover the child's bed with mosquito netting.
- Encourage children to play, study, and rest in rooms with window and door screens.
- If available and practical, encourage children to play, study, and rest in rooms with air conditioning.

Soundbite (Shorter Answer):

1. *Parents should use insect repellent on young children.*
2. *Don't let young children apply insect repellents.*
3. *Dress young children in protective clothing.*
4. *When feasible and practical, provide protective barriers between young children and mosquitoes.*

306. What is the medical treatment for children who have been infected with Zika after they were born?

Shorter Answer:

1. *There is currently no specific medicine that treats the Zika virus.*
2. *Symptoms of Zika can be managed with supportive care.*
3. *Most children infected with Zika have no symptoms or mild symptoms that go unnoticed.*
4. *There is a risk for Zika infection and transmission among sexually active adolescents and teens.*

Longer answer:

1. *There is currently no specific medicine that treats the Zika virus.*

- Over-the-counter fever medicines like acetaminophen (e.g., Tylenol) are usually sufficient to reduce fever and pain.
- Aspirin should not be used to treat symptoms because of the risk of “Reyes syndrome.”
- Non-steroidal anti-inflammatory drugs (e.g., ibuprofen) should also be avoided in children 5 years old and younger, and any child infected with Dengue virus.

2. *Symptoms of Zika can be managed with supportive care.*

- Children with symptoms should get plenty of rest.
- Children with symptoms should be encouraged to drink plenty of water and health fluids.
- Children with symptoms should not go to school or daycare if they have a fever.

3. *Most children infected with Zika have no symptoms or mild symptoms that go unnoticed.*

- Common symptoms of Zika infection include rash, a mild fever, redness in the eyes, and joint pain.
- Because of the frequent lack of symptoms, it is not possible to know exactly how many U.S. children have actually been infected with Zika.
 - According to the CDC, over 150 children (up to 18 years in age) in the U.S. between January 2015 and July 2016 have contracted Zika.
 - Healthcare providers and parents should consider Zika a possibility in children who have symptoms and a history of travel to areas where the virus is spreading.
- Serious complications from Zika in children are possible but very rare.
- To reduce the risk of transmission to others, parents should take precautions to prevent mosquitoes from biting an infected child.
- Healthcare professionals should report all suspected Zika cases to their state, local, territorial or tribal health officials.

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Continued - 306. What is the medical treatment for children who have been infected with Zika after they were born?

4. *There is a risk for Zika infection and transmission among sexually active adolescents and teens.*

- Sexually active teenagers need to protect themselves from Zika, especially during and after travel to places with active Zika outbreaks.
- Pregnant teenagers with possible Zika infection should consult a professional healthcare provider.

Soundbite (Shorter Answer):

1. *There is currently no specific medicine that treats the Zika virus.*
2. *Symptoms of Zika can be managed with supportive care.*
3. *Most children infected with Zika have no symptoms or mild symptoms that go unnoticed.*
4. *There is a risk for Zika infection and transmission among sexually active adolescents and teens.*

VII. 400 series: Transmission

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401. What do I do if I am traveling to an area where there is active Zika transmission?

Shorter Answer:

1. *CDC recommends that pregnant women not travel to an area with active Zika virus transmission.*
2. *Wear protective clothing.*
3. *Use screens, mosquito nets, and other physical barriers.*
4. *Use insect repellents.*

Longer Answer:

1. ***CDC recommends that pregnant women not travel to an area with active Zika virus transmission.***

- A Zika active transmission area (red) is a geographic area where local, state, and CDC officials have determined that the intensity of Zika virus transmission presents “a significant ongoing risk to pregnant women.”
- A Zika cautionary area (yellow) represents an additional safety buffer where active Zika virus transmission might be occurring, but evidence is lacking to support a determination of “a significant ongoing risk to pregnant women.”
 - Pregnant women and partners of pregnant women who are concerned about potential Zika virus exposure may also consider postponing nonessential travel to the area.
- Women and men who are planning to conceive in the near future should consider avoiding nonessential travel to areas with active Zika virus transmission.

2. ***Wear protective clothing.***

- Wear clothing that covers as much of the body as possible, such as long pants, long sleeves, shoes, and hats.
- Since mosquitoes carrying Zika frequently bite during daytime, wear protective clothing throughout the day.
- Wear insect repellent treated clothing.

3. ***Use screens, mosquito nets, and other physical barriers.***

- Cover windows with screens and curtains.
- Use door screens.
- Sleep under mosquito nets
- Stay and sleep in screened-in rooms and rooms with air conditioners.
- Keep doors and windows closed.

Continued on next page.



Continued - 401. What do I do if I am traveling to an area where there is active Zika transmission?

4. Use insect repellents.

- Use insect repellents approved and recommended by official health authorities, such as DEET.
- Since mosquitoes carrying Zika frequently bite during daytime, use insect repellents throughout the entire day.
- Use insect repellents strictly according to the instructions on the label.
 - Do not use insect repellents for babies under 2 months of age.
 - Reapply insect repellent as directed.
 - Do not spray repellent on the skin under clothing.
 - If using sunscreen, apply sunscreen before applying insect repellent.
 - Treat clothing and gear with permethrin or buy permethrin-treated items.
 - Treated clothing remains protective after multiple washings.
 - Read product information to learn how long the protection will last.
 - Do not use permethrin products directly on skin as they are intended to treat clothing.
 - Do not apply insect repellent onto a child's hands, eyes, mouth, and cut or irritated skin.
- Seek advice from a healthcare provider about insect repellents if you are pregnant or may become pregnant.
 - Closely monitor advice and recommendations from official health sources about recommended insect repellents.
 - Discuss with a healthcare provider which insect repellents to take on travel to areas with active Zika transmission if travel cannot be avoided or postponed.

Soundbite (Shorter Answer):

1. *CDC recommends that pregnant women not travel to an area with active Zika virus transmission.*
2. *Wear protective clothing.*
3. *Use screens, mosquito nets, and other physical barriers.*
4. *Use insect repellents.*

402. How does Zika spread?

Shorter Answer:

1. *Zika is spread primarily through the bite of an infected mosquito.*
2. *Pregnant women infected with Zika can pass the virus to their developing baby.*
3. *Both men and women infected with Zika can pass the virus to their sex partners.*
4. *The spread of Zika through blood transfusion and organ donations is being investigated.*

Longer Answer:

1. *Zika is spread primarily through the bite of an infected mosquito.*

- Zika is spread through the bites of two types of mosquitoes: *Aedes aegypti* mosquito and *Aedes albopictus* mosquito.
 - Researchers are investigating if there are other types of mosquitoes that could transmit Zika.
- Mosquitoes that spread Zika are aggressive daytime biters — but also bite at night.
- Not all people who are bitten by a mosquito that is carrying Zika get infected.
- Not all people infected with Zika virus get sick.
- Zika can pass from an infected person to another person when a mosquito bites the infected person and then bites another person.
 - Zika virus can be found in a person's blood during the first week of infection.
- The mosquitoes that spread Zika virus also spread dengue and chikungunya viruses.
- Female mosquitoes feed on blood, pierce the skin like a needle when feeding, and inject saliva containing the Zika virus.
- Once a female mosquito is infected with Zika virus, it will remain infected for life.
- A female mosquito lifespan is typically up to 30 days.

2. *Pregnant women infected with Zika can pass on the virus to their developing baby.*

- Pregnant women in their first trimester are at greatest risk of passing on Zika virus to their child.
- Pregnant women should avoid getting bitten by mosquitoes throughout the pregnancy.
- Women of child-bearing potential living in areas where Zika is spreading should receive counseling regarding Zika screening, testing, and protective behavior.
- Women of child-bearing potential who have traveled to areas where Zika is spreading should receive counseling regarding Zika screening, testing, and protective behavior.

3. *Both men and women infected with Zika can pass on the virus to their sex partners.*

- Zika is present in semen and lasts longer than in blood.
- Zika can be present in semen for as long two months after symptoms begin.

Continued on next page.



Continued - 402. How does Zika spread?

- There is evidence that Zika can be spread from an infected female to a male sex partner through condomless vaginal sex.
- Persons who want to reduce the risk for sexual transmission of Zika should abstain from sex or correctly and consistently use condoms for vaginal, anal, and oral sex.
- Sexually active men living in areas where Zika is spreading should receive counseling regarding Zika screening, testing, and protective behavior.
- Sexually active men who have traveled to areas where Zika is spreading should receive counseling regarding Zika screening, testing, and protective behavior.

4. *The spread of Zika through blood transfusion and organ donations is being investigated.*

- Steps are being taken to reduce the possibility of Zika transmission from blood transfusions and organ donations.
 - Blood donors are being screened for Zika using a donor history questionnaire
 - Blood banks are recommending that blood donors postpone giving blood for 28 days if they have traveled to a Zika infected area.
 - Blood centers in areas with active Zika transmission will cease blood collection until they are able to screen every unit of donated blood with the available investigational donor screening test for Zika virus RNA.
- Health care organizations are collaborating to develop improved Zika guidance on blood donor screening and product management.
- Healthcare organizations may need to revise their transfusion and donation policies as scientists learn more about Zika in blood and semen.

Soundbite (Shorter Answer):

1. *Zika is spread primarily through the bite of an infected mosquito.*
2. *Pregnant women infected with Zika can pass the virus to their developing baby.*
3. *Both men and women infected with Zika can pass the virus to their sex partners.*
4. *The spread of Zika through blood transfusion and organ donations is being investigated.*

403. How long can an infected man or infected woman spread the Zika virus to his sex partners?

Shorter Answer:

1. *Zika is present in semen.*
2. *Zika can also be present in vaginal fluid and menstrual fluid.*
3. *In the reported cases of sexual transmission of Zika through semen, the men had Zika symptoms.*
4. *Currently available tests for Zika in semen are limited and difficult to interpret.*

Longer Answer:

1. *Zika is present in semen.*

- The Zika virus in semen lasts longer than the Zika virus in blood.
- Live Zika virus has been found in semen more than two months after symptoms of infection disappeared.
- It is not certain how long Zika is present in semen after symptoms of infection disappear.
- Research is being done to better understand the duration of Zika in semen.
- Men concerned about transmitting Zika to their sex partners who reside in or have traveled to an area of active Zika transmission should abstain from sexual activity or use condoms consistently and correctly during sex.

2. *Zika can also be present in vaginal fluid and menstrual fluid.*

- Zika is currently thought to stay in vaginal fluid for up to two weeks.
- Male-to-female transmission is considered far more likely than female to male transmission.
- It is not certain how long Zika is present in vaginal or menstrual fluid after symptoms of infection disappear.
- The Centers for Disease Control and Prevention (CDC) recommends that "barrier methods," such as condoms, be used by all pregnant women who have a sex partner who lives in or travels to a Zika outbreak area.

3. *In most reported cases of the sexual transmission of Zika through semen, the men had Zika symptoms.*

- In one reported case, a man passed the Zika virus to others a few days before he developed symptoms.
- Researchers are studying if infected men who never develop symptoms can pass on the Zika in their semen.

Continued on next page.



Continued - 403. How long can an infected man or infected woman spread the Zika virus to his sex partners?

4. Currently available tests for Zika in semen are limited and difficult to interpret.

- There are no commercial tests for Zika in semen, so healthcare facilities cannot test for Zika like they do for HIV.
- Some sperm banks are taking steps to keep Zika out of their supplies of donor sperm.
- Sperm banks are screening and asking donors about travel to Zika-infected areas.

Soundbite (Shorter Answer):

1. *Zika is present in semen.*
2. *Zika can also be present in vaginal fluid and menstrual fluid.*
3. *In the reported cases of sexual transmission of Zika through semen, the men had Zika symptoms.*
4. *Currently available tests for Zika in semen are limited and difficult to interpret.*

404. Are there other modes of transmission beyond mosquitoes and sexual transmission?

Shorter Answer:

1. *A mother can pass Zika to her child during pregnancy.*
2. *Both men and women can pass Zika to female or male sex partners.*
3. *The spread of Zika through blood transfusion is being investigated.*
4. *To date, there is no evidence that Zika can be transmitted through organ donation or transplantation.*

Longer Answer:

1. *A mother can pass the Zika to her child during pregnancy.*

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

2. *Both men and women can pass Zika to female or male sex partners.*

- Like most diseases that can be transmitted through sexual contact, Zika can be spread by both men and women.
 - Evidence supports female-to-male Zika virus transmission through condom-less vaginal intercourse.
 - Evidence suggests it is more difficult for a woman to transmit the virus to sex partners than a man.
- Male-to-female transmission is considered far more likely than female to male transmission.
- Persons who want to reduce the risk for sexual transmission of Zika virus should abstain from sex or correctly and consistently use condoms for vaginal, anal, and oral sex, as recommended.
 - Zika virus can be present in semen, vaginal fluid, and menstrual fluid for weeks.
 - It is not certain how long Zika is present in vaginal or menstrual fluid after symptoms of infection disappear.
- In the known cases of male transmission, the men had signs or symptoms of Zika infection.
 - Men without symptoms may be able to pass Zika on to their female or male sex partners.
 - Zika can stay in the semen longer than in the blood, and it is not yet known for how long.
- Condoms can reduce the chance of getting Zika from sex if used correctly.
- If a woman is pregnant and her male partner could possibly have been infected, they should use a condom or abstain from sex for the whole pregnancy.

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Continued - 404. Are there other modes of transmission beyond mosquitoes and sexual transmission?

3. *The spread of the Zika through blood transfusion is being investigated.*

- To date, there have been no confirmed blood transfusion transmission cases in the U.S.
- Brazil has reported cases of blood transfusion transmission cases of Zika.
- In previous outbreaks of Zika, the virus had been found in blood donors.
- During the French Polynesian outbreak, 2.8% of blood donors tested positive for Zika.

4. *To date, there is no evidence that Zika can be transmitted through organ donation or transplantation.*

- The risk of transmitting the disease through solid organ transplantation is unknown at this time,
- Based on preliminary reports, it is theoretically possible that the virus could be transmitted through blood transfusion.
- It is not known which organs might become infected with Zika virus or how long the infectious virus might be present in those organs.

Soundbite (Shorter Answer):

1. *A mother can pass Zika to her child during pregnancy.*
2. *Both men and women can pass Zika to female or male sex partners.*
3. *The spread of Zika through blood transfusion is being investigated.*
4. *To date, there is no evidence that Zika can be transmitted through organ donation or transplantation.*

405. What can be done to prevent sexual transmission of Zika?

Shorter Answer:

1. *Men and women who live in or travel to areas where Zika is spreading should avoid unprotected sex.*
2. *If a couple believes that one or the other has been infected with Zika, they should seek advice from their healthcare provider.*
3. *If a person believes he has been infected with Zika during travel, he or she should seek advice from a healthcare provider.*

Longer Answer

1. ***Men and women who live in or travel to areas where Zika is spreading should avoid unprotected sex.***

- Males who live in or travel to areas where Zika is spreading should consistently and correctly use condoms.
- Male partners of pregnant women who live in or travel to areas where Zika is spreading should consider abstaining from sexual activity for the duration of the pregnancy.
- Sexually active men and women who live in or travel to an area where Zika is spreading should strictly follow all recommended steps to prevent mosquito bites.
- Men returning home from countries affected by Zika should abstain from sex or use condoms if their partner is pregnant or might become pregnant.
- Women of reproductive age with possible Zika virus exposure who do not want to become pregnant should consistently use effective contraception.
- Women with possible Zika virus exposure who are not and do not plan to become pregnant should use condoms in addition to their chosen birth control method.
 - Correct and consistent use of condoms also reduces the risk for other sexually transmitted infections.
- Men who want to minimize their risk of sexual transmission of Zika should use condoms.
 - Correct and consistent use of condoms also reduces the risk for other sexually transmitted infections.
- Women who are not and do not plan to become pregnant can choose not to have sex for at least 8 weeks after possible Zika virus exposure.
- Men who want to minimize their risk of sexual transmission of Zika can choose not to have sex for at least 6 months after last possible exposure or symptom onset.
- Women and men who live in areas with active Zika transmission and who are considering pregnancy in the near future should talk with their healthcare provider.

Continued on next page.



Continued - 405. What can be done to prevent sexual transmission of Zika?

2. *If a couple believes that one or the other has been infected with Zika, they should seek advice from their healthcare provider.*

- Healthcare providers should ask couples concerned about Zika about their mosquito bite histories, their travel histories, their use of contraceptive protection, and any symptoms of Zika infection.
- Healthcare providers should discuss Zika testing with couples concerned about Zika.

{Technical Note: Special Considerations for Women Undergoing Fertility Treatment. Zika virus transmission through assisted reproductive technology has not been reported. However, transmission through gametes or embryos is theoretically possible. Sexually intimate couples with Zika virus infection or possible Zika virus exposure undergoing fertility treatment with their own gametes and embryos should follow current testing and timing recommendations.}

- If a woman thinks her male partner may have been infected with Zika virus during travel, she should seek advice from her healthcare provider.
 - The healthcare provider can inquire about the male sex partner's mosquito bite history, travel history, and symptoms of Zika infection.
 - The healthcare provider can inquire if the woman has had sex with her male partner without protection since his return from travel.
 - The healthcare provider can determine if Zika virus testing is needed to establish a diagnosis of infection.
 - Healthcare providers do not currently recommend Zika virus testing to determine the risk of sexual transmission.

3. *If a person believes he has been infected with Zika during travel, he or she should seek advice from a healthcare provider.*

- The healthcare provider can inquire about mosquito bite history, travel history, use of contraceptive protection, any symptoms of Zika infection, and if he or she has had sex without a condom since their return.
- The healthcare provider can determine if Zika virus testing is needed to establish a diagnosis of infection.
- There is currently no widely-available nor reliable test to determine the risk of sexual transmission of Zika.

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Continued - 405. What can be done to prevent sexual transmission of Zika?

Soundbite (Shorter Answer):

1. *Men and women who live in or travel to areas where Zika is spreading should avoid unprotected sex.*
2. *If a couple believes that one or the other has been infected with Zika, they should seek advice from their healthcare provider.*
3. *If a man believes he has been infected with Zika during travel, he should seek advice from a healthcare provider.*



406. Can infected men who have no symptoms spread Zika to their partners?

Shorter Answer:

1. *In most reported cases of sexual transmission, the man had experienced Zika symptoms.*
2. *In one reported case of sexual transmission of Zika, a man passed the virus to others a few days before he developed symptoms.*
3. *Since Zika can remain in semen longer than blood, men who experience Zika symptoms should avoid unprotected sex even after recovering from illness.*

Longer Answer:

1. ***In most reported cases of sexual transmission, the men had experienced Zika symptoms.***
 - Researchers are studying if infected men who never develop symptoms can pass on Zika in their semen.
 - More research on sexual transmission of Zika is needed.
 - Tests to detect Zika in semen are currently not widely available and are difficult to interpret.
 - Men who have been infected with Zika should abstain from sexual activity, or use condoms consistently and correctly during sex for at least six months.
2. ***In one reported case of sexual transmission of Zika, a man passed the virus to others a few days before he developed symptoms.***
 - Zika is present in semen and lasts longer than in blood.
 - Zika can be present in semen for months after symptoms begin.
3. ***Since Zika can remain in semen longer than blood, men who experience Zika symptoms should avoid unprotected sex even after recovering from illness.***
 - More research on sexual transmission of Zika is needed.
 - Researchers are studying if infected men who never develop symptoms can pass Zika in their semen.
 - Tests to detect Zika in semen are currently not widely available and are difficult to interpret.

Soundbite (Shorter Answer):

1. *In most reported cases of sexual transmission, the man had experienced Zika symptoms.*
2. *In one reported case of sexual transmission of Zika, a man passed the virus to others a few days before he developed symptoms.*
3. *Since Zika can remain in semen longer than blood, men who experience Zika symptoms should avoid unprotected sex even after recovering from illness.*



407. What is being done in the U.S. to prevent Zika virus transmission from blood transfusions and organ donations?

Shorter Answer:

1. *The risk of getting Zika from a blood transfusion in the U.S. is thought to be very low due to the lack of local mosquito transmission.*
2. *Steps to reduce the possibility of Zika transmission from blood transfusions and organ donations include screening of all blood donations in the U.S.*
3. *There have been no confirmed cases of Zika transmission through blood transfusion in the U.S.*

Longer Answer:

1. *The risk of getting Zika from a blood transfusion in the U.S. is thought to be very low due to the lack of local mosquito transmission.*

- Research is ongoing to better understand the risk of Zika transmission from blood transfusion or organ donation.

2. *Steps to reduce the possibility of Zika transmission from blood transfusions and organ donations include screening of all blood donations in the U.S.*

- Blood donors in the U.S. are screened for Zika using a donor history questionnaire that asks about recent travel to areas where Zika is spreading.
- The American Red Cross has recommended that blood donors postpone giving blood for 28 days if they have travelled to a Zika infected area.
- FDA also now recommends the testing of all blood donations in the U.S. with an investigational donor screening test for Zika virus – or with a licensed screening test when one becomes available.
 - The U.S. Food and Drug Administration has granted emergency use authorization for use of a Zika virus screening test for blood donations.
 - There is no U.S. Food and Drug Administration licensed blood donor laboratory screening test available to detect Zika in blood.
 - The Zika virus screening test is called an Aptima Zika Virus assay.
 - The screening test is similar to tests shown to be effective in screening for viruses such as West Nile Virus and HIV.
 - The Zika virus screening test is expected to be used by blood donation centers in the U.S., including the American Red Cross.

{Technical Note: With respect to testing of donated blood in the U.S., because an FDA approved pathogen reduction technology is available for plasma and certain platelet products, blood establishments may use such technology for those products instead of blood screening tests.}

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Continued - 407. **What is being done in the U.S. to prevent Zika virus transmission from blood transfusions and organ donations?**

3. *There have been no confirmed cases of Zika transmission through blood transfusion in the U.S.*

- Zika spread through blood transfusions has been reported in other countries. Several countries have reported multiple cases of blood transfusion transmission of Zika.
- There is no U.S. Food and Drug Administration licensed blood donor laboratory screening test available to detect Zika in blood.

Soundbite (Shorter Answer):

- 1. The risk of getting Zika from a blood transfusion in the U.S. is thought to be very low due to the lack of local mosquito transmission.*
- 2. Steps to reduce the possibility of Zika transmission from blood transfusions and organ donations include screening of all blood donations in the U.S.*
- 3. There have been no confirmed cases of Zika transmission through blood transfusion in the U.S.*

VIII. 500 series: Outbreak

<u>501.</u>	<u><i>How worried should people be about a Zika outbreak in the U.S.?</i></u>	60
<u>502.</u>	<u><i>What are the chances there will be a Zika outbreak in the U.S./my State?</i></u>	62
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<u>504.</u>	<u><i>How contagious is Zika?</i></u>	66



501. How worried should people be about a Zika outbreak in the U.S.?

Shorter answer:

1. *It is understandable that many people are concerned or worried about a Zika outbreak.*
2. *For most people, Zika is unlikely to be a problem or health threat.*
3. *Pregnant women — and those trying to get pregnant — face the biggest danger when it comes to Zika.*
4. *While Zika virus has caused outbreaks, most people do not become ill as a result of Zika and most illnesses are relatively mild.*

Longer answer:

1. *It is understandable that many people are concerned or worried about a Zika outbreak.*

- People are concerned because Zika is a new virus.
- People are concerned because Zika has infected large numbers of people and appears to be spreading.
- People are concerned because of the reports of a birth defect — microcephaly (an abnormally small head associated with incomplete brain development) associated with Zika.
- People are concerned because of the reports of Guillain-Barré syndrome (GBS) associated with Zika.
- People are concerned because Zika can be sexually transmitted.
- Pregnant women who have recently traveled to or who will be traveling to areas that have large Zika outbreaks should be the most concerned about Zika.

2. *For most people, Zika is unlikely to be a problem or health threat.*

- For those not traveling to Zika affected areas nor living where the Aedes species of mosquitoes are found, there is little to be worried about with risk to Zika.
- While cases of Zika are likely to happen in the U.S., conditions make it unlikely there will be a significant Zika outbreak.
- Experiences with other mosquito-spread illnesses in the U.S. indicate that large outbreaks are unlikely to happen.

3. *Pregnant women — and those trying to get pregnant — face the biggest danger when it comes to Zika.*

- Pregnant women who have recently traveled to or who will be traveling to areas that have large Zika outbreaks should be the most concerned about Zika.
- Zika is associated with birth defects and more research is needed to understand it.
- The best prevention for pregnant women concerned about Zika is preventing mosquito bites.

Continued on next page.



Continued - 501. How worried should people be about a Zika outbreak in the U.S.?

- Pregnant women concerned about Zika should seek specific medical advice from their healthcare provider.

4. *While Zika virus has caused outbreaks, most people do not become ill as a result of Zika and most illnesses are relatively mild.*

- Most people who are infected will not have signs or symptoms of illness — and Zika rarely causes serious illness.
- Warmer weather will bring more mosquito activity but for Zika to cause an outbreak, there also needs to be large numbers of infected people.
- There is no local mosquito-borne transmission of Zika in the U.S. and very few actively infected people.

Soundbite (Shorter Answer):

1. *It is understandable that many people are concerned or worried about a Zika outbreak.*
2. *For most people, Zika is unlikely to be a problem or health threat.*
3. *Pregnant women — and those trying to get pregnant — face the biggest danger when it comes to Zika.*
4. *While Zika virus has caused outbreaks, most people do not become ill as a result of Zika and most illnesses are relatively mild.*

502. What are the chances there will be a Zika outbreak in the U.S./my State?

Shorter answer:

1. *There have been confirmed non-travel related cases of Zika in Puerto Rico and Florida, and continued limited outbreaks are likely.*
2. *Most U.S. states are not places where mosquitoes that can transmit Zika are found in large numbers.*
3. *An extensive Zika outbreak needs, at a minimum: the right kind of mosquitoes and many people who are infected.*

Longer answer:

1. ***There have been confirmed non-travel related cases of Zika in Puerto Rico and Florida, and continued limited outbreaks are likely.***
 - The Aedes mosquitoes that transmit Zika virus are commonly found in the U.S., particularly in southern states, and as a result, there have been Zika infections in Puerto Rico and Florida.
 - The same kind of mosquito has caused limited U.S. outbreaks of other mosquito-carried diseases, but no widespread outbreaks or epidemics.
 - It is possible that people infected elsewhere, such as during travel or time spent in Zika affected areas, will discover their infection while in the U.S.
 - There may be cases of Zika infection in the U.S. from sexual transmission.
2. ***Most U.S. states are not places where mosquitoes that can transmit Zika are found in large numbers.***
 - It is likely that Puerto Rico and the U.S. Virgin Islands could have many infections with Zika and that U.S. travelers may return with Zika infections.
 - Florida has seen cases from local mosquito transmission of Zika and local mosquito-transmitted cases may occur in other states.
 - Zika cases may still occur in people who became infected in other countries or other states.
 - Maps showing where the two Aedes species mosquitoes that transmit Zika can be found are available from official sources, such as the Centers for Disease Control, or in Appendix 1.
3. ***An extensive Zika outbreak needs, at a minimum: the right kind of mosquitoes and many people who are infected.***
 - To date, Zika is spreading fastest in tropical cities with poor mosquito control and large numbers of people living very close to one another.
 - Air conditioning and screens prevent mosquito-borne disease in much of the U.S.

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Continued - 502. What are the chances there will be a Zika outbreak in the U.S./my State?

- Even if a state has Aedes mosquitoes, those mosquitoes need a pool of infected people to bite before they could spread the virus.
- Even though mosquitoes have caused Zika infections in Florida, it is still unlikely that Aedes mosquitoes will bite people in the U.S. who are actively infected with Zika.

Soundbite (Shorter Answer):

1. *There have been confirmed non-travel related cases of Zika in Puerto Rico and Florida, and continued limited outbreaks are likely.*
2. *Most U.S. states are not places where mosquitoes that can transmit Zika are found in large numbers.*
3. *An extensive Zika outbreak needs, at a minimum: the right kind of mosquitoes and many people who are infected.*

503. What is the U.S. doing to make sure that Zika does not spread?

Shorter Answer:

1. *Federal, state, and local governments are doing much to limit the spread of Zika virus as warm summer weather brings more mosquito activity to the U.S.*
2. *The Centers for Disease Control and Prevention (CDC) working closely with State Health Departments to limit the spread of Zika.*
3. *CDC has developed a plan for assisting states in response to Zika outbreak.*
4. *Mosquito control is the best and most effective way to limit the spread of Zika.*

Longer answer:

1. ***Federal, state, and local governments are doing much to limit the spread of Zika virus as warm summer weather brings more mosquito activity to the U.S.***
 - Puerto Rico and the Gulf states are expecting potential high levels of Zika activity.
 - Florida has declared a state of emergency over Zika for several counties.
 - Health experts are providing advice to travelers and people living in areas with outbreaks.
 - The President has asked Congress for emergency funding to expand mosquito control programs, educate health care providers about Zika, educate pregnant women about Zika, and help other countries better combat mosquitoes.
 - The state of Florida has declared a state of emergency over Zika for several counties.
 - Experts believe living conditions in the U.S. will slow the spread of Zika.
2. ***The Centers for Disease Control and Prevention (CDC) is working closely with State Health Departments to limit the spread of Zika.***
 - CDC and State Health Departments are working with scientists and medical experts to eliminate the *Aedes aegypti* mosquito.
 - CDC has developed a test that can confirm Zika in the first week of illness.
 - CDC is working to make diagnostic tests more widely available — that will help track the spread of Zika.
 - CDC is supporting state health departments and laboratories to test blood samples and provide guidance for healthcare providers and the public.
3. ***CDC has developed a plan for assisting states in dealing with Zika.***
 - CDC's plan is a tiered-approach response plan to assist states.
 - The plan includes support for dealing with the mosquito season.
 - The plan identifies the actions that will happen if a state has a Zika outbreak.
 - CDC will send response teams to assist states that have Zika outbreaks.

Continued on next page.



Continued - 503. What is the U.S. doing to make sure that Zika does not spread?

4. Mosquito control is the best and most effective way to limit the spread of Zika.

- There are important and effective measures that individuals can take to reduce the number of places that mosquitoes can live and breed.
- Effective mosquito control programs remove or prevent standing water in both large (e.g., puddles and ditches, used tires) and small (e.g., flower pots, bottle caps) water containers.
- Mosquito bites can be prevented by using insect repellent on exposed skin at all times and wearing long pants, long sleeves, shoes and hats.

{Technical Note: Preliminary findings suggest that the use of specialized mosquito traps (Autocidal Gravid Ovitrap or AGO) to attract and capture the female *Aedes aegypti* mosquitoes responsible for spreading Zika may also help prevent chikungunya virus infection. AGO traps are designed to attract mosquitoes into a pail from which the mosquitoes cannot escape.}

Soundbite (Shorter Answer):

1. *Federal, state, and local governments are doing much to limit the spread of Zika virus as warm summer weather brings more mosquito activity to the U.S.*
2. *The Centers for Disease Control and Prevention (CDC) is working closely with State Health Departments to limit the spread of Zika.*
3. *CDC has developed a plan for assisting states in response to Zika outbreak.*
4. *Mosquito control is the best and most effect way to limit the spread of Zika.*



504. How contagious is Zika?

Shorter answer:

1. *Zika is mostly a mosquito-borne disease and is transferred between people by mosquito bites.*
2. *A pregnant woman can pass Zika virus to her developing baby during pregnancy.*
3. *Sexual transmission is also possible, but less is known about this type of spread.*

Longer answer:

1. ***Zika is mostly a mosquito-borne disease and is transferred between people by mosquito bites.***

- Zika virus is spread to people primarily through the bite of an infected *Aedes* species of mosquito.
- Two types of *Aedes* species are present in the U.S.: *Aedes aegypti* and *Aedes albopictus*.
- If a mosquito bites someone who is infected with Zika in the first week of illness, that mosquito picks up the virus.
- For mosquitoes to cause large outbreaks, there needs to be many people who are actively infected.
- To date, there have been no confirmed cases of transmission caused by blood transfusion in the U.S.

2. ***A pregnant woman can pass Zika virus to her developing baby during pregnancy.***

- It is not known how often this occurs.
- Women who live in or travel to an area where Zika is found can get it from mosquito bites or from unprotected sex with a man who has Zika in his semen.
- No evidence suggests that pregnant women are more likely to get a Zika infection than other people or that pregnant women will have more severe disease or symptoms.
- While Zika and an abnormally small head associated with incomplete brain development (microcephaly) appear to be associated, there is not yet definitive proof that Zika virus infection causes microcephaly.

3. ***Sexual transmission is also possible, but less is known about this type of spread.***

- Zika virus is not contagious like the flu, but it can be passed from a man to his partner(s) through sexual contact (i.e., semen).
- Men who have traveled to affected areas should know that Zika virus probably remains longer in semen than in blood, making sexual transmission possible after returning from travel.

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Continued - 504. How contagious is Zika?

Soundbite (Shorter Answer):

1. *Zika is mostly a mosquito-borne disease and is transferred between people by mosquito bites.*
2. *A pregnant woman can pass Zika virus to her developing baby during pregnancy.*
3. *Sexual transmission is also possible, but less is known about this type of spread.*

IX. 600 series: Response

<u>601.</u>	<u><i>What do authorities recommend people do if they think they have Zika?</i></u>	69
<u>602.</u>	<u><i>What is being done to keep Zika from happening in the U.S.?</i></u>	71



601. What do authorities recommend people do if they think they have Zika?

Shorter answer:

1. *The greatest concern is for women who are pregnant and who have been in areas with Zika outbreaks during their pregnancy.*
2. *People should know the symptoms and signs of Zika as well as risk factors for Zika.*
3. *As with many viruses, people may feel well even if they have Zika.*

Longer answer:

1. *The greatest concern is for women who are pregnant and who have been in areas with Zika outbreaks during their pregnancy.*

- CDC recommends that all pregnant women in the United States and U.S. territories should be assessed for possible Zika virus exposure at each prenatal care visit.
- Women who have been in a place with Zika outbreaks while pregnant should know the signs and symptoms of Zika — and also know most people don't have symptoms.
- For other people, Zika is not a serious health risk — most people will not even show signs or symptoms of infection.

2. *People should know the symptoms and signs of Zika as well as risk factors for Zika.*

- People who have been in or traveled to places where Zika is currently found would be most likely to have a possible Zika infection.
- The symptoms or signs of Zika are usually mild, and include mild fever, rash, joint pain, “pink eye” (or conjunctivitis), muscle pain, and headache.
- The symptoms or signs of Zika are ones seen with many different kinds of infections.
- It usually takes between two and ten days after a bite from a mosquito carrying the virus to show signs or symptoms of infection.
- People who have recently been in an area where Zika has been occurring should see their doctor or a healthcare provider if they or any of their family members experience Zika symptoms – and they should seek care early.

3. *As with many viruses, people may feel well even if they have Zika.*

- Few people infected with Zika will show signs of illness.
- It is especially important for pregnant women who have recently been in or traveled to an area where Zika outbreaks were occurring to see a healthcare provider if they have signs of a Zika infection.
- For most people, any illness or symptoms will go away within a few days to weeks.
- Although there is no specific treatment for Zika infection, healthcare providers may make recommendations for treating symptoms of Zika.

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Continued - 601. What do authorities recommend people do if they think they have Zika?

Soundbite (Shorter answer):

1. *The greatest concern is for women who are pregnant and who have been in areas with Zika outbreaks during their pregnancy.*
2. *People should know the symptoms and signs of Zika as well as risk factors for Zika.*
3. *As with many viruses, people may feel well even if they have Zika.*



602. What is being done to keep Zika from happening in the U.S.?

Shorter answer:

1. *Zika cases will happen in the U.S. but are expected to be on a smaller scale than elsewhere.*
2. *Health agencies and mosquito experts are providing guidance on how to avoid Zika.*
3. *Efforts are underway to prevent the spread of Zika in the U.S.*
4. *People in the U.S. must protect themselves and their partners – mosquito control and preventing bites are most important.*

Longer answer:

1. *Zika cases will happen in the U.S. but are expected to be on a smaller scale than elsewhere.*

- The types of mosquitoes that transfer Zika virus are found in the U.S. and will be more active as the weather gets warmer and more humid.
- In the past, most cases of mosquito-borne illness in the U.S. have been among people who were infected in other countries.
- CDC and state health experts are working to determine where mosquitoes with the virus may go and are taking steps to attack the mosquitoes.
- Experience with other mosquito-borne diseases suggests it is not likely that there will be large outbreaks of Zika in the U.S.

2. *Health agencies and mosquito experts are providing guidance on how to avoid Zika.*

- The Centers for Disease Control and Prevention (CDC) has issued recommendations for Americans on how to avoid contracting Zika and are updating those recommendations regularly.
- The CDC, along with state and community health departments, are working to ensure all Americans have information about Zika and steps they can take to better protect themselves from infection.
- The main way to protect people and prevent infection is eliminating mosquitoes and preventing mosquito bites.
- CDC has issued recommendations for people who are traveling or who have returned from areas that have Zika outbreaks.

3. *Efforts are underway to prevent the spread of Zika in the U.S.*

- States, especially those in the warmest and most humid parts of the U.S., have extensive experience in fighting mosquitoes.
- Early mosquito control helps. At the beginning of the mosquito season, CDC recommends monitoring and spraying areas that have or could have high numbers of mosquitoes.

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Continued - 602. What is being done to keep Zika from happening in the U.S.?

- Early detection is important – so research is underway to make available better tests for diagnosing if someone is infected.
- Research on ways to detect, prevent, and treat Zika is being ramped up.

4. *People in the U.S. must protect themselves and their partners – mosquito control and preventing bites are most important.*

Soundbite (Shorter Answer):

1. *Zika cases will happen in the U.S. but are expected to be on a smaller scale than elsewhere.*
2. *Health agencies and mosquito experts are providing guidance on how to avoid Zika.*
3. *Efforts are underway to prevent the spread of Zika in the U.S.*
4. *People in the U.S. must protect themselves and their partners – mosquito control and preventing bites are most important.*

X. 700 series: Control

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701. What can people do to reduce or eliminate mosquitoes?

Shorter Answer:

1. *Eliminate standing water in your home, yard, workplace, neighborhood, and community.*
2. *Consider consulting with a professional certified mosquito control company.*
3. *Reduce or eliminate mosquitoes in your home and yard by using screens and other barriers.*

Longer Answer:

1. *Eliminate standing water in your home, yard, workplace, neighborhood, and community.*

- Without water, mosquitoes can't reproduce.
 - All stages in the life of a mosquito but the last stage in the life cycle of a mosquito occur in water.
 - Mosquitoes go through four stages in their life cycle: egg, larvae, pupa, and adult.
 - After a female mosquito eats a blood meal, it searches for water to lay eggs.
 - Only female mosquitoes bite because they need blood for reproductive purposes.
 - Once mosquitoes start to hatch, there is on average a new crop of mosquitoes every seven to 10 days
- Mosquitoes can breed wherever water accumulates
- Even a bottle cap full of water can become a breeding ground for large numbers of mosquitoes.
 - Mosquitoes can breed both in stagnant and clean water.
 - Mosquito eggs and larvae must be eliminated as well as the mosquitoes that produce them.
- Drain, dump out, and cover containers or sites where mosquitoes can breed.
 - Common sources for standing water and breeding sites for mosquitoes in the home include sinks, cups, toilet tanks, and flowerpots, and containers of any type that hold water.
 - Common sources of standing water and breeding sites for mosquitoes in yards include buckets, bird basins, flowerpots, tubs, pools, garden ornaments, children's wagons, plastic toys, plant saucers, pet bowls, and gutters.
 - Clogged gutters, gutters that don't drain properly, and gutters with puddles that form underneath and around downspouts are common mosquito breeding site.
 - Low points in a gutter can collect water and become a place for mosquitoes to lay eggs.
 - Debris that collects in the yard, such as grass clippings and piles of leaves, can become a place for mosquitoes to lay eggs.
 - Common sources for standing water and breeding sites for mosquitoes in neighborhoods and communities include water storage tanks, ditches, pools, gardens, and water fountains.
 - Become informed about community wide efforts to survey and eliminate mosquito-breeding sites in public spaces, such as parks, gardens, community centers, playgrounds, fields, markets, and cemeteries.

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Continued - 701. What can people do to reduce or eliminate mosquitoes?

2. Consider consulting with a professional certified mosquito control company.

- Professional certified mosquito control companies provide spray treatments that kill adult mosquitoes and kill mosquitoes in the larvae stage.
- Professional mosquito control companies provide spray treatments that often contain pyrethrin or pyrethroids.
 - Pyrethrin is a botanical pesticide derived from dried chrysanthemum plants.
 - Pyrethroid sprays contain a synthetically produced insecticide that mimics the chemistry of naturally occurring pyrethrin.
- Professional certified mosquito control companies may recommend the use of larvicides that kill mosquitoes in the larvae stage.
 - Larvicides are used for treating water bodies such as ponds, ditches, and lakes.
 - The most common larvicide is BTI, *Bacillus thuringiensis israelensis*, a naturally occurring bacterium.
 - BTI can be applied directly to water via dissolvable briquettes, backpack sprayers, and aircraft.
 - BTI is considered safe to use in the environment and is nontoxic to mammals, fish and birds, according to the U.S. Environmental Protection Agency.
 - BTI is only effective on larvae and doesn't kill adult mosquitoes.

3. Reduce or eliminate mosquitoes in your home and yard by using screens and other barriers.

- Cover windows with screens and curtains.
- Use door screens.
- Consider using approved mosquito control products, such as mosquito misting systems, air curtains, repellents, and traps.
- Sleep under mosquito nets.
- Stay and sleep in screened-in rooms and rooms with air conditioners.
- Keep doors and windows closed.

Soundbite (Shorter Answer):

1. *Eliminate standing water in your home, yard, workplace, neighborhood, and community.*
2. *Consider consulting with a professional certified mosquito control company.*
3. *Reduce or eliminate mosquitoes in your home and yard by using screens and other barriers.*



702. Are the types of mosquitoes that can spread Zika found in the U.S.?

Shorter answer:

1. *The Aedes mosquitoes that transmit Zika are commonly found in the U.S., particularly in southern states and some U.S. territories.*
2. *Zika is transmitted to people primarily through the bite of an infected female Aedes species of mosquito.*
3. *Aedes mosquitoes must have standing water to reproduce.*

Longer answer:

1. *The Aedes mosquitoes that transmit Zika are commonly found in the U.S., particularly in southern states and some U.S. territories.*

- The Aedes aegypti mosquito is the primary source of Zika transmission.
- Aedes aegypti mosquitoes prefer very warm and humid areas.
- Aedes aegypti mosquitoes are found most often in places with tropical and sub-tropical climates.
- Most states in the U.S. are not places where Aedes aegypti mosquitoes are found or are found in large numbers.
- Even if a state has Aedes mosquitoes, those mosquitoes need a pool of infected people to bite before they could spread Zika.
- Mosquito control measures in warm and humid places in the U.S., such as in Texas and Florida have historically been very effective.

2. *Zika is transmitted to people primarily through the bite of an infected females Aedes species of mosquito.*

- There are two types of Aedes species of mosquito — Aedes aegypti and Aedes albopictus.
- Mosquitoes typically lay their eggs in and near standing water in containers such as buckets, bowls, animal dishes, flower pots and vases.
- Female mosquitoes become infected when they feed on a person already infected with the virus.
 - Infected mosquitoes can spread the virus to people through bites.
- A single mosquito bite can transfer the virus from an infected mosquito to a person.
- An Aedes aegypti mosquito can bite four or five people in the course of one blood meal.

3. *Aedes mosquitoes must have standing water to reproduce.*

- All except the last stage in the life cycle of a mosquito occur in water.
 - Mosquitoes go through four stages in their life cycle: egg, larvae, pupa, and adult.
 - After a female mosquito eats a blood meal, it searches for water to lay eggs.

Continued on next page.



Continued - 702. Are the types of mosquitoes that can spread Zika found in the U.S.?

- Only female mosquitoes bite because they need blood to reproduce.
- Once mosquitoes start to hatch, there is a new crop of mosquitoes in as little as 7 days.
- Mosquitoes can breed wherever there is standing water.
- Even a bottle cap full of water can become a breeding ground for large numbers of mosquitoes.
 - Mosquitoes can breed both in stagnant and clean water.
- Mosquito eggs and larvae must be eliminated as well as the mosquitoes that produce them.

Soundbite (Shorter Answer):

1. *The Aedes mosquitoes that transmit Zika are commonly found in the U.S., particularly in southern states and some U.S. territories.*
2. *Zika is transmitted to people primarily through the bite of an infected female Aedes species of mosquito.*
3. *Aedes mosquitoes must have standing water to reproduce.*

703. What states could be affected by Zika?

Shorter Answer:

1. *Zika virus can potentially be found anywhere in the U.S. because of mosquito bites, sexual transmission and travel.*
2. *Local and travel-associated mosquito-borne Zika cases have been reported in the U.S.*
3. *Local mosquito-borne transmission of Zika has been reported in US territories.*
4. *It is possible that as the weather gets hotter and more humid, there could be mosquito-borne Zika cases in the U.S.*

Longer answer:

1. ***Zika virus can potentially be found anywhere in the U.S. because of mosquito bites, sexual transmission and travel.***
2. ***Local and travel-associated mosquito-borne Zika cases have been reported in the U.S.***
 - The Aedes species or type of mosquitoes that transmit the virus are found in the U.S., most commonly in places where there is very warm and humid weather.
 - The mosquitoes that transmit Zika do not like cold and dry conditions.
 - Some people have discovered their Zika virus infection while in the U.S. or after they returned to the U.S. after travel to a country having Zika outbreaks.
 - There have also been cases of Zika in the U.S. from sexual transmission.
 - Zika virus can be present in semen, vaginal fluid, and menstrual fluid for weeks.
 - With the recent outbreaks occurring in other parts of the world, the number of Zika cases among travelers visiting or returning to the U.S. will likely increase.
3. ***Local mosquito-borne transmission of Zika has been reported in U.S. territories.***
 - To date, local mosquito-borne transmission of Zika has been reported in the Commonwealth of Puerto Rico, the U.S. Virgin Islands, and American Samoa.
 - To date, Zika is spreading fastest in tropical cities with limited mosquito control and with large numbers of people living close to one another.
 - Many states may have Aedes mosquitoes during warm and humid months.
 - Mosquitoes need to bite people who are actively infected with Zika in order to spread the virus.

Continued on next page.

Continued - 703. What states could be affected by Zika?

4. *It is possible-that as the weather gets hotter and more humid, there could be mosquito-borne Zika cases in the U.S.*

- Aedes species mosquitoes have been found in many states, but more needs to be learned about where they are and where they aren't.
- Even if a state has Aedes mosquitoes, those mosquitoes need to have infected people to bite before they can spread the virus.
- Experts believe that large outbreaks Zika are unlikely in the U.S.
- The places where mosquitoes that can carry Zika have or could be found do not mean that there are Zika infected mosquitoes in those areas.
 - The Centers for Disease Control and Prevention (CDC) has created maps that show where Aedes aegypti and Aedes albopictus mosquitoes have and can be found in the U.S.
 - The maps are CDC's best estimate of the potential range of Aedes aegypti and Aedes albopictus mosquitoes in the U.S.
 - The maps can be found at: <http://www.cdc.gov/zika/vector/index.html>.

Soundbite (Shorter Answer):

1. *Zika virus can potentially be found anywhere in the U.S. because of mosquito bites, sexual transmission and travel.*
2. *Local and travel-associated mosquito-borne Zika cases have been reported in the U.S.*
3. *Local mosquito-borne transmission of Zika has been reported in U.S. territories.*
4. *It is possible that as the weather gets hotter and more humid, there could be mosquito-borne Zika cases in the U.S.*

704. Will the Zika virus mutate so that other mosquitoes can carry it?

Shorter answer:

1. *As with all viruses, it is possible that the Zika virus can change in unpredictable ways.*
2. *While Zika was discovered in 1947, it has not been studied much because the symptoms are typically mild.*
3. *Experts are unsure whether the Zika virus has changed since first discovered.*
4. *The more people become infected and the more places the virus is found, the more it is possible that Zika could change.*
5. *More studies need to be done to fully understand the Zika virus and its ability to change.*

Longer answer:

1. ***As with all viruses, it is possible that the Zika virus can change in unpredictable ways.***
 - Zika's ability to change does not affect current strategies.
2. ***While Zika was discovered in 1947, it has not been studied much because the symptoms are typically mild.***
 - Most people get over Zika in a few days.
3. ***Experts are unsure whether the Zika virus has changed since first discovered.***
 - If Zika is proven to cause microcephaly (an abnormally small head associated with incomplete brain development) and Guillain-Barré syndrome (a rare nervous system disorder), Zika may have adapted and may have become more dangerous to humans.
 - Experts are investigating if Zika has changed, and if so, what has changed and why.
4. ***The more people become infected and the more places the virus is found, the more it is possible that Zika could change***
 - Zika can spread quickly if the Aedes mosquitoes are in places that have large numbers of infected people and many people who have never been infected.
5. ***More studies need to be done to fully understand the Zika virus and its ability to change.***
 - There is a need for genetic studies to understand the origin of the Zika virus.
 - Current research indicates that there are two different strains: one originating in Africa and one from Asia.
 - Scientists believe that the outbreak in Brazil seems to be from the Asian strain, which may have evolved to be better at invading nerve cells or at evading the immune system.

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Continued - 704. Will the Zika virus mutate so that other mosquitoes can carry it?

Soundbite (Shorter answer):

1. *As with all viruses, it is possible that the Zika virus can change in unpredictable ways.*
2. *While Zika was discovered in 1947, it has not been studied much because the symptoms are typically mild.*
3. *Experts are unsure whether the Zika virus has changed since first discovered.*
4. *The more people become infected and the more places the virus is found, the more it is possible that Zika could change.*
5. *More studies need to be done to fully understand the Zika virus and its ability to change.*



705. Is aerial spraying to reduce mosquitoes safe?

Shorter Answer:

1. *Aerial spraying is a mosquito control technology that uses aircraft to spray insecticides.*
2. *Aerial spraying is most helpful when large numbers of mosquitoes are present and occupy a large geographical area.*
3. *Aerial spraying is only one of the many approaches for reducing the mosquito population.*
4. *Aerial spraying takes place under controlled conditions designed to maximize safety and effectiveness.*

Longer answer:

1. *Aerial spraying is a mosquito control technology that uses aircraft to spray insecticides.*
 - Aerial spraying can quickly reduce the number of mosquitoes in a large geographical area.
 - When conducted according to strict regulations, aerial spraying is safe for people, animals, and the environment.
 - The U.S. Environmental Protection Agency (EPA) has rigorously studied aerial spraying and found the amount of insecticides used is safe and effective.
 - One of the most commonly used insecticides in “Naled,” which is sprayed at low altitudes in a superfine mist that kills mosquitoes on contact.
 - Aerial spraying has been successfully used in the United States for decades to reduce mosquito populations.
2. *Aerial spraying is most helpful when large numbers of mosquitoes are present and occupy a large geographical area.*
 - The amount of insecticide used in aerial spraying is typically small — often no more than two tablespoons for an area about the size of a football field.
 - The insecticides used in aerial spraying typically evaporate within hours and break down quickly in water and sunlight.
3. *Aerial spraying is only one of the many approaches for reducing the mosquito population.*
 - Other approaches for reducing the mosquito population include outdoor spraying around homes, larvicides, and removing standing water.
 - Larvicides kill young mosquitoes before they grow into biting adults and are used to kill mosquitoes in standing water, such as in rain barrels.
 - Each approach for reducing mosquito populations helps to reduce the chance of being bitten by a mosquito carrying a virus.

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Continued - 705. Is aerial spraying to reduce mosquitoes safe?

4. *Aerial spraying takes place under controlled conditions designed to maximize safety and effectiveness.*

- Aerial spraying is preceded by notifications when and where the spraying will occur.
- People may prefer to stay inside and close doors and windows during spraying but it is not necessary.
- Agriculture workers and others involved in aerial spraying are required to wear specialized personal protective equipment.
- Aerial spraying operations for mosquitoes are scheduled for times that minimize harm to other insects such as honeybees.

Soundbite (Shorter Answer):

- 1. *Aerial spraying is a mosquito control technology that uses aircraft to spray insecticides.***
- 2. *Aerial spraying is most helpful when large numbers of mosquitoes are present and occupy a large geographical area.***
- 3. *Aerial spraying is only one of the many approaches for reducing the mosquito population.***
- 4. *Aerial spraying takes place under controlled conditions designed to maximize safety and effectiveness.***

XI. Appendices

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XII. Appendix A: Message Mapping

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I. Overview

"Message maps" are risk communication tools used to help organize complex information and make it easier to express current knowledge. The development process distills information into easily understood messages written at an approximately 6th to 8th grade reading level.

Messages are presented initially in no more than 3-5 short sentences that convey 3-5 key messages, in as few words as possible. The approach is based on surveys showing that lead or front-page media and broadcast stories usually convey only 3 key messages usually in less than 9 seconds for broadcast media or 27 words for print.

Each key message has 3-5 supporting messages. These can be used when and where appropriate to provide context for the issue being mapped.

II. SAMPLE MESSAGE MAP – SMALLPOX (WITH KEYWORDS IN ITALICS)

Stakeholder: Public

Question or Concern: How contagious is smallpox?

a. Bullet format message map

Shorter Answer:

- Smallpox *spreads slowly* compared to other diseases.
- The slow spread of smallpox allows time *to find those infected*.
- People infected with smallpox *can be vaccinated* to prevent illness.

Longer Answer:

- Smallpox *spreads slowly* compared to other diseases.
 - People are only infectious when the rash appears.
 - Smallpox typically requires hours of face-to-face contact.
 - There are no smallpox carriers without symptoms.



Continued - Appendix A: Message Mapping

- The slow spread of smallpox *allows time to find those infected*.
 - The time period before smallpox symptoms appear is 10–14 days
 - Resources are available for finding people who may have become infected with smallpox.
 - Finding people who have been exposed to smallpox and vaccinating them has proved successful in the past.
- People infected with smallpox *can be vaccinated* to prevent illness.
 - People who have never been vaccinated are the most important to vaccinate.
 - Adults who were vaccinated for smallpox as children may still have some immunity.
 - Adequate smallpox vaccine is on hand.

b. Box Format Message Map

Stakeholder: Public		
Question or Concern: How contagious is smallpox?		
<u>Key Message 1</u>	<u>Key Message 2</u>	<u>Key Message 3</u>
Smallpox spreads slowly compared to other diseases.	The slow spread of smallpox allows <i>time to find those Infected</i>.	People infected with smallpox <i>can be vaccinated</i> to prevent illness.
Supporting Information 1-1	Supporting Information 2-1	Supporting Information 3-1
People are only infectious when the rash appears.	The time period before smallpox symptoms appear is 10–14 days	People who have never been vaccinated are the most important to vaccinate.
Supporting Information 1-2	Supporting Information 2-2	Supporting Information 3-2
Smallpox typically requires hours of face-to-face contact.	Resources are available for finding people who may have become infected with smallpox.	Adults who were vaccinated as children may still have some immunity.
Supporting Information 1-3	Supporting Information 2-3	Supporting Information 3-3
There are no smallpox carriers without symptoms.	Finding people who have been exposed to smallpox and vaccinating them has proved successful in the past.	Adequate vaccine is on hand.

Continued - Appendix A: Message Mapping

III. Ten Principles of Message Mapping

- 1) Limiting the number of key messages to a maximum of 3-5 using as few words as possible, ideally no more than 9 seconds or 27 words to express the necessary information.
- 2) Constructing messages that can be easily understood by an adult with a 6th to 8th grade education. This can be tested using the “readability” utility in word-processing programs.
- 3) Adhering to the “primacy/recency” or “first/last” principle. This principle states that the most important messages should occupy the first and last position in a list.
- 4) Citing third parties or sources that would be perceived as credible by the receiving audience.
- 5) Providing a preamble to the message map that indicates genuine empathy, listening, caring and compassion – crucial factors in establishing trust in high-concern, high-stress situations.
- 6) Developing graphics, visual aids, analogies and narratives (such as personal stories), which can increase an individual’s ability to hear, understand and recall a message by more than 50%.
- 7) Constructing messages while recognizing the dominant role of negative thinking in high-concern situations. Examples include: avoiding unnecessary, indefensible or non-productive uses of absolutes, and of the words “no”, “not”, “never”, “nothing” and “none”; balancing or countering a negative key message with positive, constructive or solution-oriented key messages; and providing three or more positive points to counter a single negative point or bad news.
- 8) Presenting the full message map using the repetitive structure found in the “Tell me, Tell me more, Tell me again model” (the “Triple T Model”): telling people the information in summary form (i.e., the three key messages; telling people more (i.e., the supporting information); and telling people again what was told in summary form (i.e., repeat the three key messages).
- 9) Developing key messages and supporting information that address important risk perception, outrage and fear factors such as trust, benefits, control, voluntariness, dread, fairness, reversibility, catastrophic potential, effects on children, morality, origin and familiarity.
- 10) Ideally, each message should be able to stand alone for purposes of quotation without reference to other messages in the map.



XIII. Appendix B: Media Interviews: Tips and Pitfalls

Authors:

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1. Overview

In general, the media is interested in the following:

- Human interest stories
- Bad news more than good news
- People's perspectives
- Yes or no/safe or unsafe answers
- Front-page news stories.

2. Preparing for the Media Interview

- The media will be seeking information on: Who? What? When? Where? Why? How?
- To maximize your impact, prepare and practice delivering your key message.
- For broadcast media: 27 words or 9-second "sound bite."
- For print media: 1 to 3 key messages.

3. Before, During, and After a Media Interview

a. Before the Media Interview

Do:

- Ask who will be conducting the interview.
- Ask which subjects they want to cover.
- Caution them when you are not the correct person to interview because there are topics you cannot discuss (because lack of knowledge, etc.).
- Inquire about the format and duration.
- Ask who else will be interviewed.
- Prepare the key take away messages you want the media to report.
- Practice.



Continued - Appendix B: Media Interviews: Tips and Pitfalls

Don't:

- Tell the news organization which reporter you prefer.
- Ask for all the questions in advance.
- Insist they do not ask about certain subjects.
- Demand your remarks not be edited.
- Insist an adversary not be interviewed.
- Think that keeping a lid on the story will prevent the media from finding out.
- Assume it will be easy.

b. During the Media Interview

Do:

- Express caring, concern, or empathy.
- Acknowledge the legitimacy of people's emotions and concerns.
- Be honest and accurate.
- Stick to your key message(s).
- State your conclusions first, then provide supporting data.
- Offer to get information you don't have.
- Stress the facts.
- Give a reason if you can't discuss a subject.
- Correct mistakes by stating you would like an opportunity to clarify.

Don't:

- Lie or try to cloud the truth.
- Improvise or dwell on negative allegations.
- Raise issues you don't want to see in the story.
- Fail to think it through ahead of time.
- Guess.
- Use jargon or assume the facts speak for themselves.
- Speculate or discuss hypothetical situations.
- Lose your composure.
- Say, "No comment."
- Demand an answer not be used.



Continued - Appendix B: Media Interviews: Tips and Pitfalls

c. After the Media Interview

Do:

- Remember you are still on the record.
- Be helpful. Volunteer to get information. Make yourself available.
- Respect deadlines.
- Watch for and read the resulting report.
- Call the reporter to politely point out inaccuracies, if any.

Don't:

- Assume the interview is over or the equipment is off.
- Refuse to talk further.
- Ask, "How did I do?"
- Ask to review the story before publication or broadcast.
- Complain to the reporter's boss first.



XIV. Appendix C: CDC Zika-related Updates and Technical Resources and Links

CDC's Zika homepage – including latest updates and overview:

<http://www.cdc.gov/zika/index.html>

Zika-related travel information:

<http://wwwnc.cdc.gov/travel/page/zika-information>

Zika communication planning guide for states:

<http://www.cdc.gov/zika/public-health-partners/comm-planning-guide.html>

Information for health care workers and settings:

<http://www.cdc.gov/zika/hc-providers/index.html>

Tools for health care providers:

<http://www.cdc.gov/zika/hc-providers/tools.html>

Zika clinical evaluation and disease information:

<http://www.cdc.gov/zika/hc-providers/diagnostic.html>

Zika diagnostic testing information:

<http://www.cdc.gov/zika/hc-providers/diagnostic.html>

United States Zika pregnancy registry:

<http://www.cdc.gov/zika/hc-providers/registry.html>

CDC guidance on mosquito and vector control:

<http://www.cdc.gov/zika/vector/index.html>

CDC recommendations for Zika vector control in the continental United States:

<http://www.cdc.gov/zika/public-health-partners/vector-control-us.html>

Biosafety guidance for transportation of specimens and for work with Zika virus in the laboratory:

<http://www.cdc.gov/zika/state-labs/biosafety-guidance.html>



XV. Appendix D: WHO Guidebooks on “Effective Media Communication during Public Health Emergencies”

Handbook

The handbook describes a seven-step process to assist officials and others to communicate effectively through the media during emergencies.

- [Handbook \(pdf, 448 kb\)](#)

Field Guide

The Field Guide is a shortened version of the Handbook. It highlights the practical aspects of the seven-step approach.

- [Field Guide \(pdf, 218 kb\)](#)

Wall Chart

The chart shows the seven-step approach and provides easily recalled key information and advice.

- [Wall Chart \(pdf, 218 kb\)](#)

