

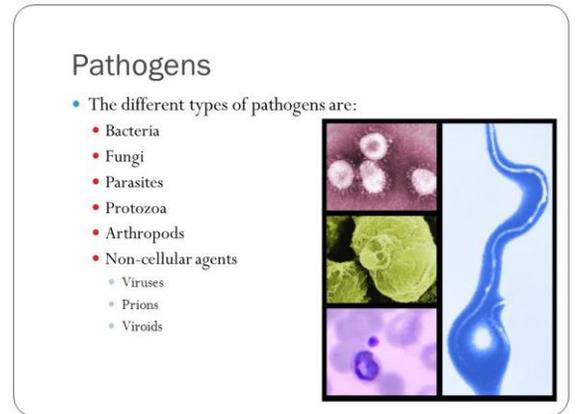
Communicating about High Consequence Pathogens: Lessons from Pandemic Influenza, Ebola, and Zika

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Ensuring Infection Control in the Pacific
March 1, 2019



Grady College of Journalism
and Mass Communication
UNIVERSITY OF GEORGIA

An infectious disease involving a high consequence pathogen can quickly bring. . .



- A need to quickly and effectively communicate through multiple channels and platforms, including:
 - Traditional news media
 - Partner organizations and key stakeholders (e.g., health departments, clinicians, professional medical societies)
 - Websites
 - Social media
- Uncertainty, anxiety, skepticism, criticism
- Recommendations and policies that quickly intersect with personal values, politics, and competing priorities
- Risks to organization, professional, and personal credibility and reputations

Effective health-related communication requires knowing your desired outcomes(s) and how you will achieve them

“A” – A set of people who have appropriate beliefs regarding a threat or potential threat and/or who are not doing a recommended behavior, such as receiving a recommended vaccination. . .



“B” – most or more people will have the desired beliefs regarding a threat or potential threat and/or do the recommended behavior, such as receiving a recommended vaccination.

The Core Questions:

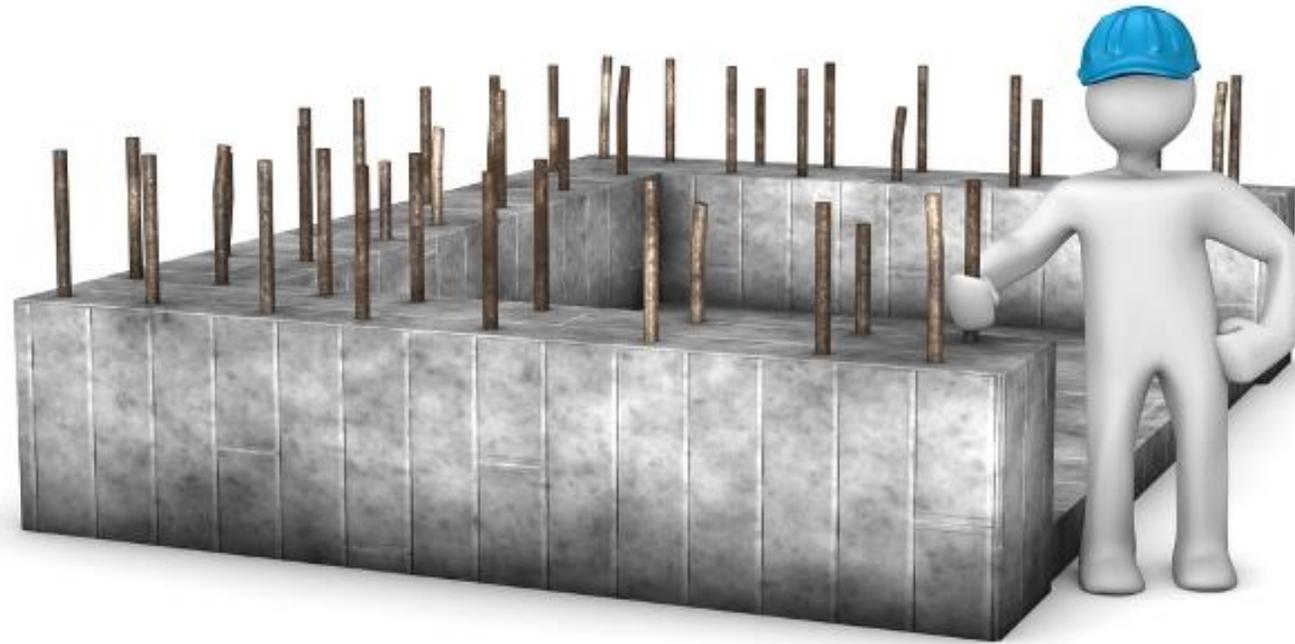
How can or will you influence or persuade individuals in your targeted audience(s)?

What communication approaches and messages are most likely to increase your communication success?





Starting from a strong communication foundation is essential.



Recognize that effective health communication efforts will take more time and effort than you prefer. . .

A group of people who are not doing a recommended behavior. . .

. . . are provided information and advice from an. . .

Immediate, widespread desired behavior change



**DON'T GET
THE FLU.
DON'T SPREAD
THE FLU.**

GET VACCINATED.

cdc.gov/flu

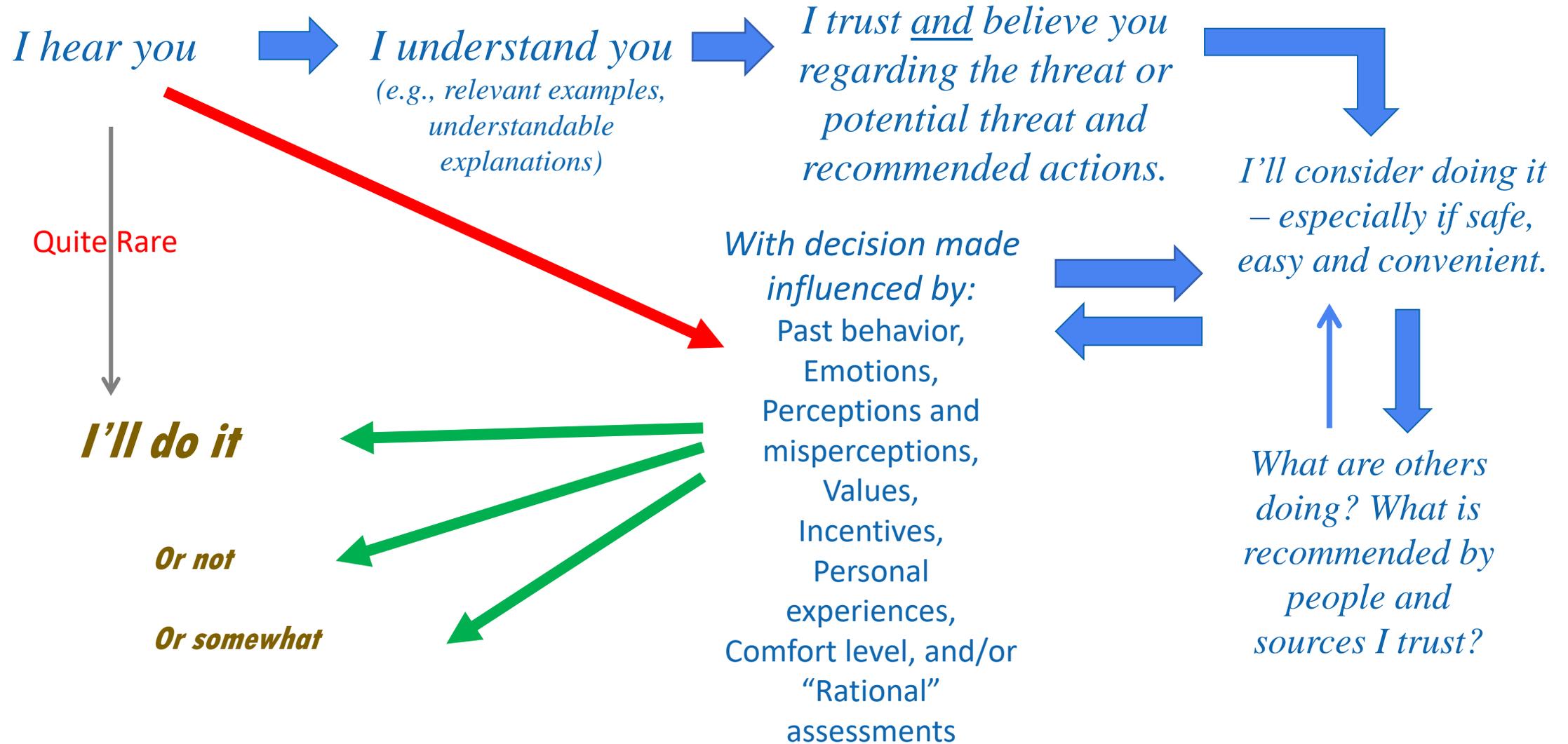


However, this rarely happens because simply providing more factual information is rarely enough to achieve success.

(Because) Health communication and education take more time, effort and resources when. . .

- You are trying to persuade or influence someone (vs. only inform them). . .
- The health threat is unfamiliar and unusual.
- The desired outcome is a new behavior or change in behavior.
- You want or need to have the outcomes happen quickly.
- Your messages are being sent into a “VUCA” world – i.e., a situation filled with “volatility, uncertainty, complexity, and ambiguity.”

Communication and education that seeks to achieve or increase a acceptance of a health-related behavior looks more like this. . .



Trust affects acceptance of public health recommendations, but adults' levels of trust might not be as high as you assume.

- Please rate your level of trust in. . . ('1' = 'no trust' / '5' = 'complete trust')
 - The annual or seasonal flu vaccine or shot
 - The tetanus vaccine or shot
 - A new Zika vaccine or shot, if it became available

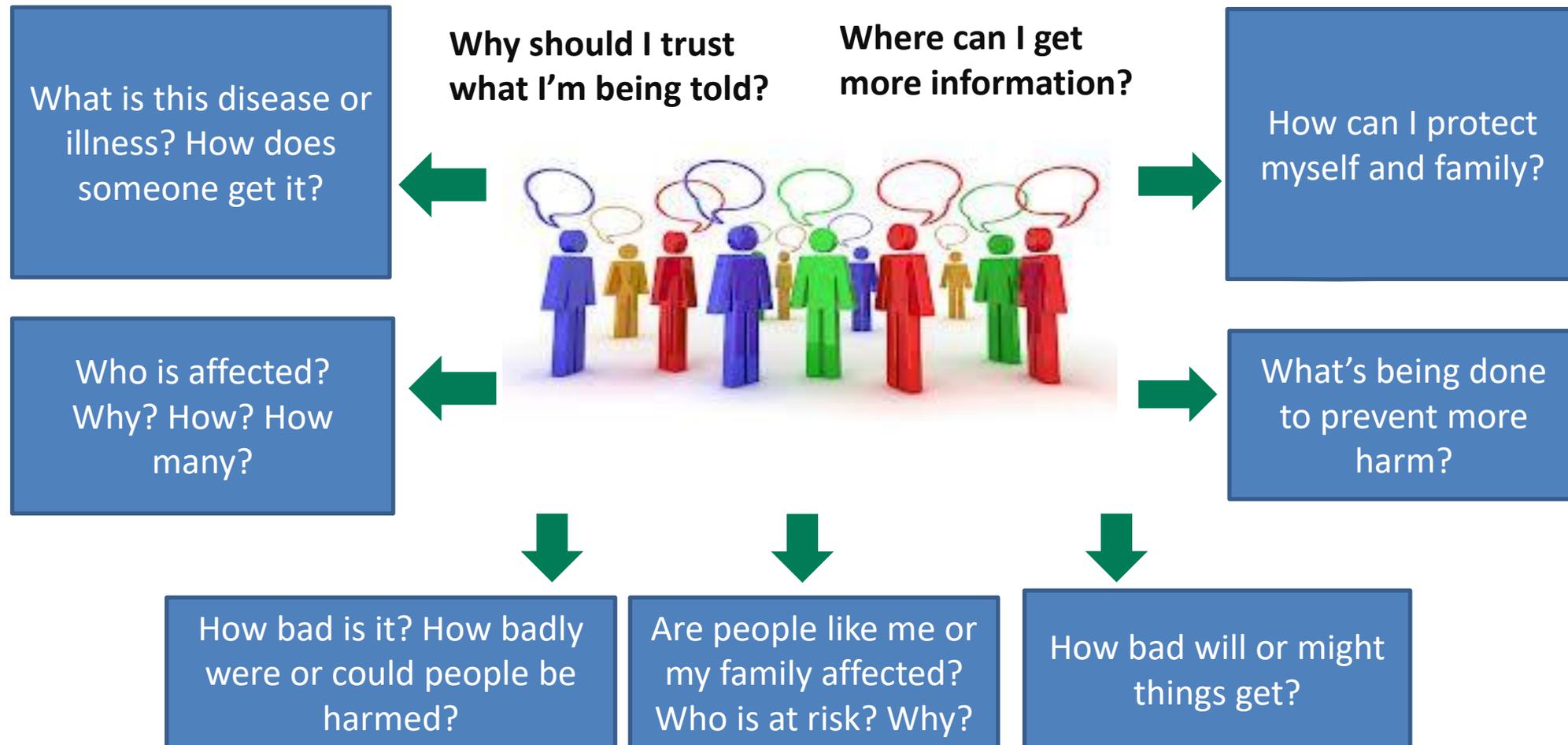
 - Vaccine information and recommendations from my doctor or healthcare provider
 - The scientists involved in developing and testing vaccines
 - The Centers for Disease Control and Prevention
 - The Food and Drug Administration
 - Federal government agencies responsible for monitoring the safety of recommended adult vaccines
 - The experts who make vaccination recommendations
 - The companies that make or produce the vaccines recommended for adults

Item – <i>Level of trust in the...</i>	No Trust 1	2	3	4	Complete Trust 5	Average Rating
Annual or seasonal flu vaccine or shot	18.2%	13.6%	22.5%	20.7%	25.0%	3.2
Tetanus vaccine or shot	5.5%	6.7%	19.2%	26.1%	42.5%	3.9
A new Zika vaccine or shot, if it became available	20.2%	22.7%	33.0%	16.9%	7.2%	2.6

Item – <i>Level of trust in the...</i>	No Trust 1	2	3	4	Complete Trust 5	Average Rating
Vaccine information and recommendations from my doctor or healthcare provider	6.3%	7.4%	25.2%	33.5%	27.6%	3.7
Centers for Disease Control & Prevention – or CDC -	10.0%	12.9%	31.5%	30.4%	15.1%	3.3
Scientists involved in developing and testing vaccines	10.1%	13.4%	37.8%	29.0%	9.8%	3.1
The experts who make vaccination recommendations	11.7%	16.9%	34.2%	28.3%	8.4%	3.0
The Food & Drug Administration – or FDA	13.7%	18.1%	30.2%	26.8%	11.2%	3.0
Federal government agencies responsible for monitoring the safety of recommended adult vaccines	14.9%	18.8%	35.1%	21.5%	9.8%	2.9
The companies that make or produce the vaccines recommended for adults	20.8%	26.9%	32.6%	15.3%	4.3%	2.6

Practice and preparation matter

Preparation should be geared toward being able to quickly address. . .



Many infectious disease communication challenges and needs are known or predictable.

- **Disease threat, incidence, and likelihood often vary considerably;** places, areas, communities, states, and countries will have different experiences and needs;
- **Initial uncertainties are many** – but initial demands for information are usually high
 - Detection and diagnosis
 - Treatment(s)
 - Prevention and protection
- New infectious diseases, and rare infectious diseases in new places, can bring **rapid media, public, and policy maker interest and attention**

When an emerging or not often seen a high consequence infectious disease makes it to the U.S. you should expect . . .



Many infectious disease communication challenges and needs are known or predictable.

- **Developments** – both good and bad – **happen quickly and unpredictably**
- **Internal communications**, particularly for health care facilities, is as **important** as external communications.
- **Communications** efforts and messages need to **help set, guide, and manage expectations**

SCIENTIFIC
AMERICAN
CUSTOM MEDIA

The Universal Flu Shot Moves Within Reach

Long promised, a lifelong vaccine for every form of influenza has entered human trials.

This article was created for the [Icahn School of Medicine at Mount Sinai](#), in New York City, by [Scientific American Custom Media](#), a division separate from the magazine's board of editors.

October 19, 2018

What Is a Universal Flu Vaccine?

Criteria set out by NIAID for a universal vaccine includes that it be:

- At least 75 percent effective
- Protect against two different groups of type A influenza viruses (the type that can cause pandemics)
- Provide protection for at least a year
- Be suitable for all age groups

According to [Jennifer Louise Gordon, PhD](#), an influenza vaccine program officer at NIAID, a universal vaccine may still require boosters every few years.

**Provide “basic” information early
– and likely often, and continually, and in
easy to access places**

What is Zika virus disease (Zika)?

- Disease spread primarily through the bite of an Aedes mosquito infected with Zika virus.
- Most people infected with Zika virus won't even know they have the disease because they won't have symptoms.
- For those who do have symptoms, they are mild and last for several days to a week.



Symptoms of Zika

About 4 out of 5 people with Zika won't even know they have it. The illness is usually mild with symptoms lasting for several days to a week.

The most common symptoms of Zika are

- ◆ Fever
- ◆ Rash
- ◆ Joint Pain
- ◆ Red eyes

CS263062 February 23, 2016



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

The infographic features a central blue silhouette of a human figure. Red dots are scattered across the torso and arms, representing a rash. A red target symbol is on the knee, representing joint pain. A red eye icon is on the left, and a red thermometer icon is on the right, representing fever and red eyes. Dashed red lines connect these icons to the corresponding parts of the human figure.



Last Revised: November 26, 2014



Top Questions on Zika: Simple Answers

Developed by the
Association of State and Territorial Health Officials*
Edition: April 7, 2016

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.



* Citation: Hyer R and Covello V. Top Questions on Zika: Simple Answers. Association of State and Territorial Health Officials, April 7, 2016. Arlington, Virginia.

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.

It's easy for confusion to arise



Aedes Aegypti



Aedes albopictus



Southern House Mosquito

Not all mosquitoes transmit the Zika virus - and the mosquitoes that do may not be the most commonly found in an area, community, or state.

Sick with CHIKUNGUNYA, DENGUE, or ZIKA?

Protect yourself and others from mosquito bites during the first week of illness.

Protect family and friends

- During the first week of illness, chikungunya, dengue, or Zika virus can be found in the blood.
- A mosquito that bites you can become infected.
- An infected mosquito can bite a family member or neighbor and make them sick.



Watch for these symptoms

See your doctor if you develop a fever with any of the following symptoms:

- Muscle or joint pain
- Headache, especially with pain behind the eyes
- Rash
- Conjunctivitis (red eyes)

For more information:

www.cdc.gov/chikungunya
www.cdc.gov/dengue
www.cdc.gov/zika



Protect yourself from mosquito bites

- Wear long-sleeved shirts and long pants.
- Use door and window screens to keep mosquitoes outside.
- Use insect repellent.



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Posters

> Traveling to the American Tropics?

✓ For the media: What's the difference between a locally transmitted case and an imported case?



- What is an Imported Case? [PDF - 2 pages]



- What is Local Transmission? [PDF - 2 pages]

> Sick with chikungunya, dengue, or Zika virus?

> Public health prevention posters

Be prepared for commonly used words to bring and add confusion

- Infectious
- Infected
- Symptoms
- Contagious
- Exposure / Exposed

- How can someone know or tell if they have been “exposed” to the – virus, the disease, a person who is or was infected with the disease?
- If someone is sick or ill, are they infected?
- If someone is infected, will they have symptoms? Will everyone who is infected have symptoms? Will they have the same symptoms?
- If someone is infected, are they contagious?
- Can someone be infectious, but not contagious?
- Can someone be infected, not have symptoms, and be contagious?

Expect low media and public understanding of likely to be often mentioned health-related concepts

- Fever
- Diagnosis and diagnostic tests
- Case definition
- Airborne
- Fomite
- Outbreak vs. epidemic vs. pandemic

What is a fever – how high does one's temperature need to be?

How is a diagnosis made? Confirmed?

What is a case definition? Why is it needed?

Are there diagnostic tests? How long do they take? Who does the testing?

Is a confirmed diagnosis needed for treatment?

Is airborne transmission possible?

Does the (virus/bacteria) live on surfaces? If so, for how long?

Is this an outbreak? An epidemic? Will it become one?

Clinicians will need information, too: Distinguishing Zika from Dengue and Chikungunya

- Dengue and chikungunya viruses transmitted by same mosquitoes with similar ecology
- Dengue and chikungunya can circulate in same area and rarely cause co-infections
- Diseases have similar clinical features
- Important to rule out dengue, as proper clinical management can improve outcome*



Clinical Features: Zika Virus Compared to Dengue and Chikungunya

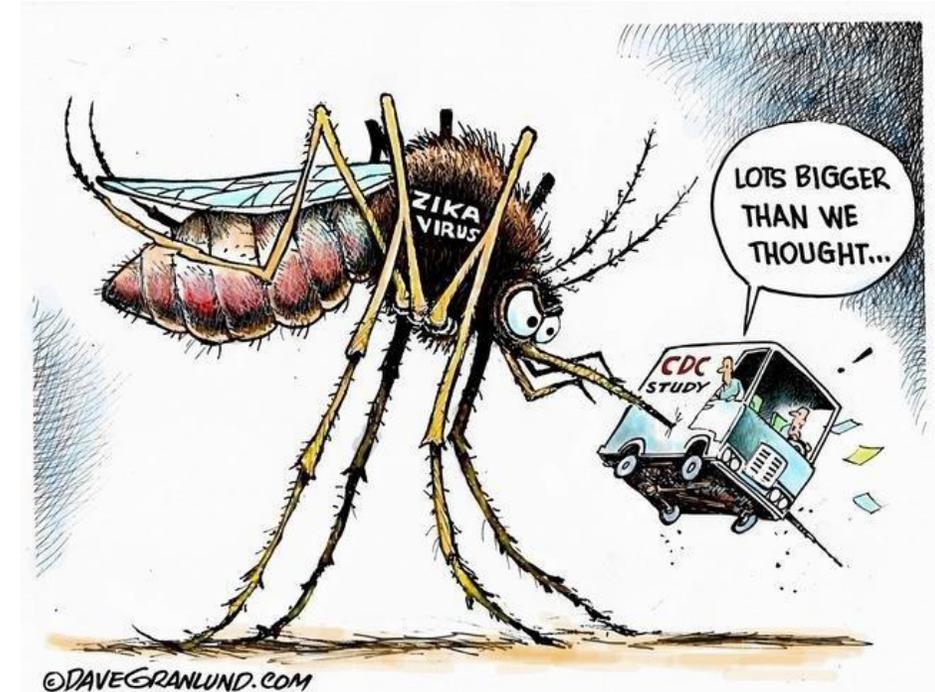
Features	Zika	Dengue	Chikungunya
Fever	++	+++	+++
Rash	+++	+	++
Conjunctivitis	++	-	-
Arthralgia	++	+	+++
Myalgia	+	++	+
Headache	+	++	++
Hemorrhage	-	++	-
Shock	-	+	-

*WHO dengue clinical management guidelines: http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf

Risk communication principles do provide a strong and needed foundation

Key Risk Communication Concepts

- **Beware of the “Holy Grail of risk communication”:** believing you can inform people, educate people, and/or motivate precautionary behavior without scaring anyone.
- **Anticipate that exotic, unfamiliar threats often bring or foster a seemingly disproportionate amount of interest, attention and concern** – even if a very small actual threat to most individuals.
- **Adjustment Reaction/Period:** the “OMG” phase of learning about a new risk; a new risk can cause temporary overreaction, but also creates opportunity for teachable moments.



Risk Communication Key Points

- **Express** – and often lead with – **empathy and caring**
- **Anticipatory Guidance:** foreshadow that recommendations will likely change as new information emerges (reduce audience perception of future changes as evidence of prior mistakes)
- **Acknowledge** – early on – **1) uncertainties and 2) the possibility of rapid change, differences in actions** as well as expert opinions, and the likelihood of things arising that aren't easily foreseen
- **Be very careful about assurances** and offering “reassurance” and “guarantees” or “ensuring that you can do something”

HUFFPOST HEALTHY LIVING

FRONT PAGE POLITICSENTERTAINMENT WHAT'S WORKING HEALTHY LIVING WORLDPOSTHIGHLINE HU

A Zika Virus Outbreak In The U.S. Is 'Likely,' The CDC Says

But “for the average American who is not traveling, this is not something they need to worry about.”

01/23/2016 04

TIME

LATEST MAGAZINE VIDEOS

HEALTH ZIKA

Zika Crisis May Get Worse Before It Gets Better, WHO Chief Says

Rishi Iyengar @iyengarsh Feb 24, 2016

The mosquito-borne disease has already been reported in 46 countries



CDC'S RESPONSE TO ZIKA

WHAT WE KNOW



AND WHAT WE DON'T KNOW.

What we don't know



If there's a safe time during your pregnancy to travel to an area with Zika



If you do travel and are bitten

- How likely you are to get Zika
- How likely it is that your baby will have birth defects from the infection

Crisis and Emergency Risk Messaging Best Practices

(Parmer et al., 2016, Health Communication)

- Explain what is currently known about the event's impact on human health
- Explain what is not known about the threat to human health
- Explain how or why the event happened
- Promote action steps that people can take to reduce the personal threat
- Express empathy about the threat to human health
- Express accountability
- Express commitment

Identify what is and isn't known: Microcephaly and Zika

What we know

- Small number of positive test results for Zika virus infection in infants with microcephaly
- Microcephaly pattern consistent with Fetal Brain Disruption Sequence
 - Based on photos/scans of a small number of affected infants from Brazil
 - Retrospective investigation in French Polynesia outbreak in 2013-2014
 - Infants with other intrauterine infections such as cytomegalovirus (CMV)

What we don't know

- Causal relation between Zika virus and microcephaly or other adverse pregnancy outcomes
- Full spectrum of phenotypes in affected infants
- Impact of timing of infection during pregnancy
- Impact of severity of maternal infection
- Magnitude of the possible risk of microcephaly and other adverse pregnancy outcomes



What we don't know



If there's a safe time during your pregnancy to travel to an area with Zika



If you do travel and are bitten

- How likely you are to get Zika
- How likely it is that your baby will have birth defects from the infection



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

February 22, 2016

For more information:
www.cdc.gov/zika

02/22/16

that can carry Zika are found in some areas of the US.

found throughout the tropics, outbreaks will likely continue.

Messages, Messages, Messages

Everyone knows that messages matter – however, often underestimated is 1) how many “messages” will be needed; 2) how quickly they will be needed; and 3) how challenging this aspect of risk communication quickly becomes in an infectious disease outbreak that involves a high-risk pathogen



Messages

- Know what you are trying to achieve with your media and public messages – what does success look like? What are you trying to achieve in terms of beliefs and behaviors?
- Think “headlines” – what headline(s) are you trying to achieve with your messages?

Note: News story headlines are often a very good place to find good, short, and easy to understand key or core messages.

Louisiana's flu season: Severe, but not as bad as last year

More than 8 percent of patients are reporting flu-like symptoms to doctors statewide, making it a severe season, Frank Welch, ...

WWL-TV · 4d

Louisiana seeing high number of flu cases

Doctors said getting the flu shot is the best protection. Vaccination rates for kindergarten and sixth grade students 2017 an...

WVUE FOX 8 News · 4d

Flu outbreak in New Orleans area reaches high level, officials tell people with flu to stay home

Frank Welch, medical director for the Louisiana Department of Health's Immunization Program, said the percentage of patients ...

The Advocate · 5d



Flu vaccine doing a relatively good job this season

NEW YORK (AP) — The flu vaccine is doing a relatively good job this season, protecting about half the people who got it, U.S. ...

YAHOO! · 2d



This Year's Flu Shot Was Far More Effective Than Last Year's. Here's Why

The 2018-2019 flu season has been a relatively mild one — and a pretty effective flu shot is part of the reason why. Mid-seas...

YAHOO! · 2d



This year's flu vaccine is doing well, but deaths are still high

This season's flu vaccine reduces the need to go to the doctor's office by about half, according to figures released Thursday ...

The Washington Post · 2d



Milder flu season may be due to a better flu vaccine match, report says

This season's flu vaccine is a good match for the virus strains in circulation, according to new data from the Centers for Di...

NBC News · 2d



CDC: Flu shot much more effective this year

This year's flu shot is already outperforming the vaccine issued during the tough 2017-2018 influenza season, federal health ...

Upi.com · 2d



Messages

- Know what you are trying to achieve with your media and public messages – what does success look like? What are you trying to achieve in terms of beliefs and behaviors?
- Think “headlines” – what headline(s) are you trying to achieve with your messages?
- In an infectious disease situation or response, you may have to determine the headlines you are striving for – and the key messages related to them – each day you are communicating to the media and public.
- Think sound bites and good quotes – because how you frame and state things does matter.
- ***Use your messages to set and guide expectations.***

Example: Dr. Richard Besser, 2009 H1N1A – Initial Press Conference

- “I want to acknowledge the importance of uncertainty. At the early stages of an outbreak, there’s much uncertainty, and probably more than everyone would like. Our guidelines and advice are likely to be interim and fluid, subject to change as we learn more. We’re moving quickly to learn as much as possible and working with many local, state, and international partners to do so.”
- “I want to recognize that while we’re moving fast, it’s very likely this will be more of a marathon than a sprint. I want to acknowledge change. Our recommendations, advice, and approaches will likely change as we learn more about the virus and we learn more about its transmission.”
- “I want to acknowledge that we’re likely to see local approaches to controlling the spread of this virus, and that’s important; that can be beneficial; that can teach us things that we want to use in other parts of the country and that other people in other places may find useful.”

Example: CDC's Initial Zika-related key messages

- Zika is not a new virus, but what we are seeing in the Americas right now is new.
- Zika is not currently found in the continental U.S. The mosquitoes that can carry Zika are found in some areas of the U.S. – but, mosquitoes need to find infected people in order to transmit and spread the virus.
- Women who are infected with Zika virus either with or without symptoms could have a baby with one of the birth defects. First thing to say is that we don't know for sure if the health of the baby will be affected.
- We should expect cases in the U.S., including from mosquitoes. Conditions in the U.S. make it unlikely, but not impossible there will be a serious outbreak here.

Diverse communication channels & material will be needed

- Materials developed specifically for local areas
- Education material for different population
- Online, social networks, mobile, etc.
- Multi-language material
- News Media

CDC's Response to Zika
PREGNANT and living in an area with Zika?

What we know about Zika

- Zika can be passed from a mother to her fetus during pregnancy.
- Infection with Zika during pregnancy is linked to birth defects in babies.
- Zika is spread mostly by the bite of an infected Aedes species mosquito.
- These mosquitoes are aggressive daytime biters. They also bite at night.
- There is no vaccine to prevent or medicine to treat Zika.
- Zika can be spread by a man to his sex partners.

What we don't know about Zika

- When during pregnancy Zika might cause harm to the fetus.
- How likely it is that Zika infection will affect your pregnancy.
- If your baby will develop birth defects.

COVER EXPOSED SKIN

cdc.gov/zika

ZAP

CDC @CDCgov · Sep 28
A1: #Zika can be spread during sex by a person with Zika to his/her partners. 1.usa.gov/1OtaX6 #WellnessWed

Así es como detenemos el zika

Toma medidas para protegerte y proteger a tu bebé en gestación del virus del Zika. Si tienes dudas o preocupaciones, consulta a tu médico.

Protégete así:

- Usa repelente de mosquito y evita caminar de noche por áreas con mucha vegetación.
- Usa condones cada vez que tengas cualquier tipo de contacto sexual.
- Evita que los mosquitos entren a tu casa. Pon "mosquitos" en las puertas y ventanas.
- Usa una lámpara con luz azul o verde para atraer a los mosquitos lejos de tu casa. Deséchala los recipientes para eliminar los huevos de mosquito.

Tu familia y tu comunidad serán contigo para ayudarte a detener al Zika.

ZIKA AND SEXUAL TRANSMISSION

To help protect you from mosquito bites, ask a grown-up to put bug spray on you. The bug spray will go on your skin but not your eyes, mouth, or under your clothes. Make sure to put bug spray on outside and do not spray it around any food or animals!

Be very careful should you spread it on the face!

CDC @CDCgov · Sep 28
Get #Zika updates for your destination via text. Text PLAN to 855-255-5606. [ow.ly/OZ3H3043yrR](https://www.ow.ly/OZ3H3043yrR) #NatiPrep

U.S. Surgeon General @Surgeon_General

Only 10 min until I talk w/ @MomsRising @WhatToExpect @HeidiMurkoff @CDCgov @SaluddeMinorias & more about #Zika. share the latest recs

#WellnessWed

Topic: Zika Virus

Join MomsRising, the Surgeon General, What To Expect and Heidi Murkoff as we discuss the Zika Virus.

MomsRising.org 3 p.m. ET | 09.28.16 MamásConPoder.org

DETÉN EL ZIKA

APRENDE MÁS

DETENELZIKA.ORG

Camps	Colleges and Universities	Community, Faith-based, & Youth-Serving Organizations	Daycares
Elementary - High Schools	Healthcare Providers & Management	Housing Management & Associations	Outdoor Workers

Organizers of camps involving outdoor activities, including both daytime and overnight camps

- Zika: Protecting Children from Mosquito Bites at Camp [PDF - 2 pages] (fact sheet)
- Zika: Protecting Camp Staff and Campers [PDF - 2 pages] (fact sheet)
- Zika: The Basics of the Virus and How to Protect Against It [PDF - 2 pages] (fact sheet)
- Outdoor Activities [PDF - 1 page] (fact sheet)
- Keep Mosquitoes Out of Your Septic Tank [PDF - 1 page] (fact sheet)
- Protect Yourself from Mosquito Bites [PDF - 1 page] (fact sheet)
- How to Protect Against Mosquito Bites [PDF - 2 pages] (fact sheet)
- Sick with Chikungunya, Dengue, or Zika? [PDF - 1 page] (fact sheet)
- Help Control Mosquitoes that Spread Dengue, Chikungunya, and Zika Viruses [PDF - 2 pages] (fact sheet)



Zika Virus and Pregnancy

Provide tailored materials and information to those at high risk

CDC's Response to Zika
THINKING ABOUT HAVING A BABY?
WARNING: ZIKA IS LINKED TO BIRTH DEFECTS

Plan Your Pregnancy

With the Zika outbreak, planning your pregnancy is more important than ever. There is no vaccine to prevent Zika virus infection.

If you are thinking about having a baby, your doctor or other healthcare provider can help you plan for a safe pregnancy. Talk with your doctor about:

- Your plans for having children
- The potential risk of getting Zika during pregnancy
- Your partner's potential exposures to Zika

If you decide that now is not the right time for you to have a baby, your doctor or other healthcare provider can help you find a birth control method that is safe, effective, and works for you and your lifestyle.

Protect yourselves from getting Zika from mosquito bites

Use insect repellent

- Protect yourself and your family from mosquito bites all day and night, whether you are inside or outside.
- Insect repellent is safe and it works! Read the label and follow the directions.

Cover your skin

- Wear long-sleeved shirts and long pants. For extra protection, treat clothing with permethrin.*

Mosquito-proof your home

- Use screens on windows and doors.
- Use air conditioning when available.
- Empty containers with standing water.

Once you're pregnant, protect yourself from getting Zika

Use a condom

- Use a condom every time you have sex during your pregnancy. Condoms must be used every time, every time, every time, including vaginal, anal, and oral sex.

OR

Don't have sex

- Don't have sex during your pregnancy.

Talk to your healthcare provider

- If you think you or your partner may have had Zika, tell your healthcare provider if you had sex with a partner who has had Zika.

What we know about Zika

- Zika can be passed from a mother to her fetus during pregnancy.
- Infection with Zika during pregnancy is linked to birth defects in babies.
- Zika is spread mostly by the bite of an infected Aedes species mosquito.
- These mosquitoes are aggressive daytime biters. They also bite at night.
- There is no vaccine to prevent or medicine to treat Zika.
- Zika can be spread by a man to his sex partners.

What we don't know about Zika

- When during pregnancy Zika might cause harm to the fetus.
- How likely it is that Zika infection will affect your pregnancy.
- If your baby will develop birth defects from the infection.

Symptoms of Zika

About 4 out of 5 people with Zika won't even know they have it. The illness is usually mild with symptoms lasting for several days to a week.

The most common symptoms of Zika are:

- Fever
- Rash
- Joint Pain
- Red eyes

CDC recommends special precautions for pregnant women and women trying to become pregnant

Pregnant?

Pregnant women and their male partners should strictly follow steps to prevent mosquito bites.

If you have a male partner, either use condoms the right way every time you have sex during your pregnancy, or do not have sex.

If you develop the symptoms of Zika, see a healthcare provider right away for testing.

Testing is recommended for pregnant women at their first prenatal care visit.

Trying to become pregnant?

Women trying to become pregnant and their male partners should strictly follow steps to prevent mosquito bites.

Talk to your healthcare provider about plans to become pregnant.

Your Best Protection: Prevent Mosquito Bites

Clothing

Wear long-sleeved shirts and long pants.

Treat clothing and gear with permethrin or purchase permethrin-treated items.

- Treated clothing remains protective after multiple washings. See product information to learn how long the protection will last.
- If treating items yourself, follow the product instructions carefully.
- Do NOT use permethrin products directly on skin. They are intended to treat clothing.

Room Protection

Use air conditioning or that use window and door screens to keep mosquitoes outside.

Use a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.

Insect Repellent

Use EPA-registered insect repellents on your skin and clothing.

- Use only an EPA-registered insect repellent.
- Always follow the directions on the bottle.
- Do not spray repellent on the skin under clothing.
- If you are also using sunscreen, apply sunscreen first and insect repellent second.
- When used as directed, these insect repellents are proven safe and effective even for pregnant and breastfeeding women.

Bed Net

- Keep mosquitoes out of your room day and night. If your room is not well screened, use this bed net when sleeping or resting.
- Mosquitoes can live indoors and will bite at any time, day or night.

Condoms

- During sex, it is possible to get Zika virus from a partner who has Zika. If you have sex during your pregnancy, every time, you should use condoms the right way.
- Not having sex eliminates the risk of getting Zika through sex.

Standing Water Treatment Tabs

- Use water treatment tabs to kill larvae in standing water around your house. Do not put them in water you drink.
- Always follow directions on the package.
- When used as directed, these tabs will not harm you or your pets (dogs and cats).

Permethrin Spray

- Spray your clothing and gear with permethrin to help protect you from mosquito bites.
- Always follow the directions on the bottle. Respray as directed.
- Do not spray permethrin on your skin.

Pregnant AND WORRIED ABOUT ZIKA?

Zika Prevention Kit for Pregnant Women

The products below can help protect you from Zika. Use these items to build your own Zika prevention kit.

www.cdc.gov/zika

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Account for Fears, be prepared for misperceptions

When it comes to public health and high consequence pathogens, communication should recognize there will be conflicting information, fear raising information mis-information, and dis-information.

Sources of conflicting information include. . .

- Differences among experts
 - Lack of consensus and/or consistency among health care providers, public health experts, scientists, and others in the media
 - Different studies producing different results
 - Varying recommendations from experts and expert bodies
 - Changes in preferences, differences in preferences
- Differences in preventative measures and treatments
 - Differences in design or efficacy (e.g., respiratory protection)
 - Different and/or multiple formulations (e.g., medicines, mosquito control measures)
 - Use of less familiar ingredients – e.g., adjuvants in vaccines
- Journalists and news media (and others) are often attracted to disagreements, differences, changes, and perceived inconsistencies.

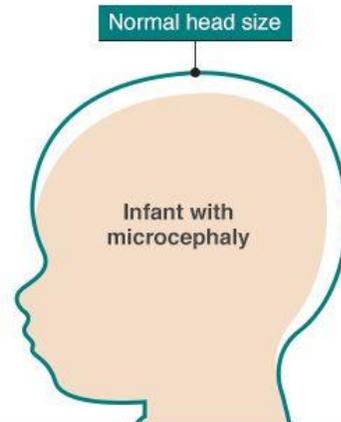
Images can – and sometimes are used – to raise awareness or heighten fear

Images of babies with microcephaly fueled fears and heightened attention.



Microcephaly

- Symptoms include below-average head size
- Often caused by failure of brain to grow at normal rate
- Head circumference measuring **less than 31.5-32cm** at birth
- Affects **25,000 children** in US each year



Media images will compete with your messages



Municipal workers wait before spraying insecticide at Sambodrome in Rio de Janeiro, Brazil, in this January 26, 2016 photo / Pilar Olivares, Reuters

The public and media assume and understand things differently

Experts and leaders

- There are possible, suspected, reported, and confirmed cases
- Initial estimates are incomplete because of diagnostic & reporting lags
- Significant increases in reports or estimates may reflect reporting or confirmation lags, or the impact of increased media attention
- This will be hard to diagnosis - symptoms are similar to other things
- Only sophisticated lab tests can detect and tell us for sure
- “Infected” doesn’t necessarily mean “contagious”
- Treatments may only alleviate symptoms
- “New” means “we now have a helpful way to reduce harm”

Public and media

- The number of cases is the number of people who have been infected
- Assume you have complete, real time data – *and will always have*
- Significant increases in reports or estimates mean things changed dramatically overnight and/or things are getting worse (e.g., more and new illnesses)
- There are clear symptoms or indications of disease/condition
- Assume there are widely used and highly accurate rapid diagnostic tests
- “Infected” means “contagious”
- “Treatment” means “cure”
- “New” is often understood to mean “experimental”

Rumors and Misinformation

**“Rumors are the lifeblood of any epidemic”
-Dr. Howard Markel, medical historian**

THE RUMORS

Vaccines are to blame for rise in microcephaly:

Tdap vaccine

Expired or ‘bad lot’ of MMR vaccine

HPV vaccine

Larvicide Pyriproxyfen—pesticide dispensed in water tanks

Genetically modified mosquitoes

Mercury in seafood

Gold dust

THE FACTS

Mosquitos have been in Brazil for centuries.

Zika is new to the country; believed to have arrived in 2014

There has been a rise in cases of microcephaly, a condition in which the brain stops growing mid-pregnancy

Aretha Franklin speculates whether Prince's death was from the Zika virus

BY [PETER SBLENDORIO](#) / NEW YORK DAILY NEWS / Thursday, April 21, 2016, 4:58 PM

[A](#) [A](#) [A](#)

Powerhouse songstress Aretha Franklin wondered whether Prince's sudden death Thursday was the result of a Zika virus infection.

The Queen of Soul speculated on the matter during her live interview with MSNBC's Brian Williams shortly after the legendary pop musician died in his Minnesota studio.

"They're saying flu-like symptoms," Franklin pondered on air. "I'm wondering if it has anything to do with this Zika virus."

[The CDC website](#) cautions that people "very rarely die of Zika."

Collaborate and Coordinate –

Infectious disease-related risk and crisis communication often requires *rapidly* identifying and engaging with multiple stakeholders and influencers

Infectious diseases can and do affect tourism & private business

Adventurer's Guide
@guide4disney

PHOTOS - #Disney steps up the fight against Zika at Walt Disney World
wdwmagic.com/resorts/walt-d...



RETWEETS 4 LIKES 7

6:24 AM - 29 Aug 2016

Troy Campbell
@TroyLeeCampbell

We are talking #Zika prevention at @WaltDisneyWorld @UniversalORL & @SeaWorld w/ free spray @ 6:30 on @news6wkm

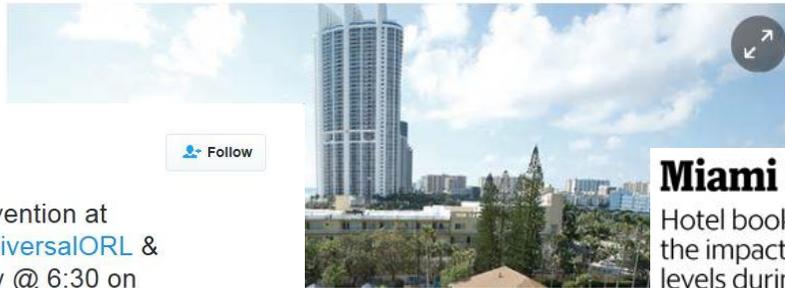


If you are traveling to the Big Island of Hawai'i...

The Hawai'i State Department of Health (DOH) has recently confirmed the presence of dengue fever on Hawai'i Island (the Big Island). The Big Island and the rest of Hawai'i remain safe destinations for visitors and residents, and there are no travel restrictions for any of these locations. Extensive control efforts are currently underway in the affected areas across the island and the investigation is ongoing.

Miami fears Zika virus may hit \$24bn tourism industry hard

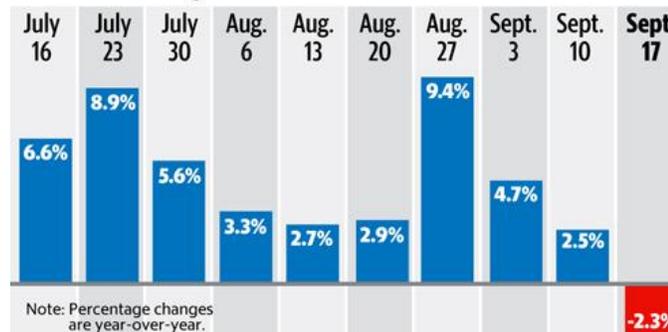
With the number of confirmed cases continuing to rise and peak winter tourism season two months away, businesses and hotels worry about losing visitors



Miami Beach hotels stung by Zika

Hotel bookings in **Miami Beach** have begun to show the impact of Zika, with demand dropping below 2015 levels during the week of Sept. 17. On Sept. 16, the Zika transmission zone on the beach tripled to run from Eighth Street to 63rd Street.

Week ending



Source: STR, a data and analytics specialist.

MARCO RUIZ mruiz@miamiherald.com



Boots on the ground: working with local community on infectious disease response

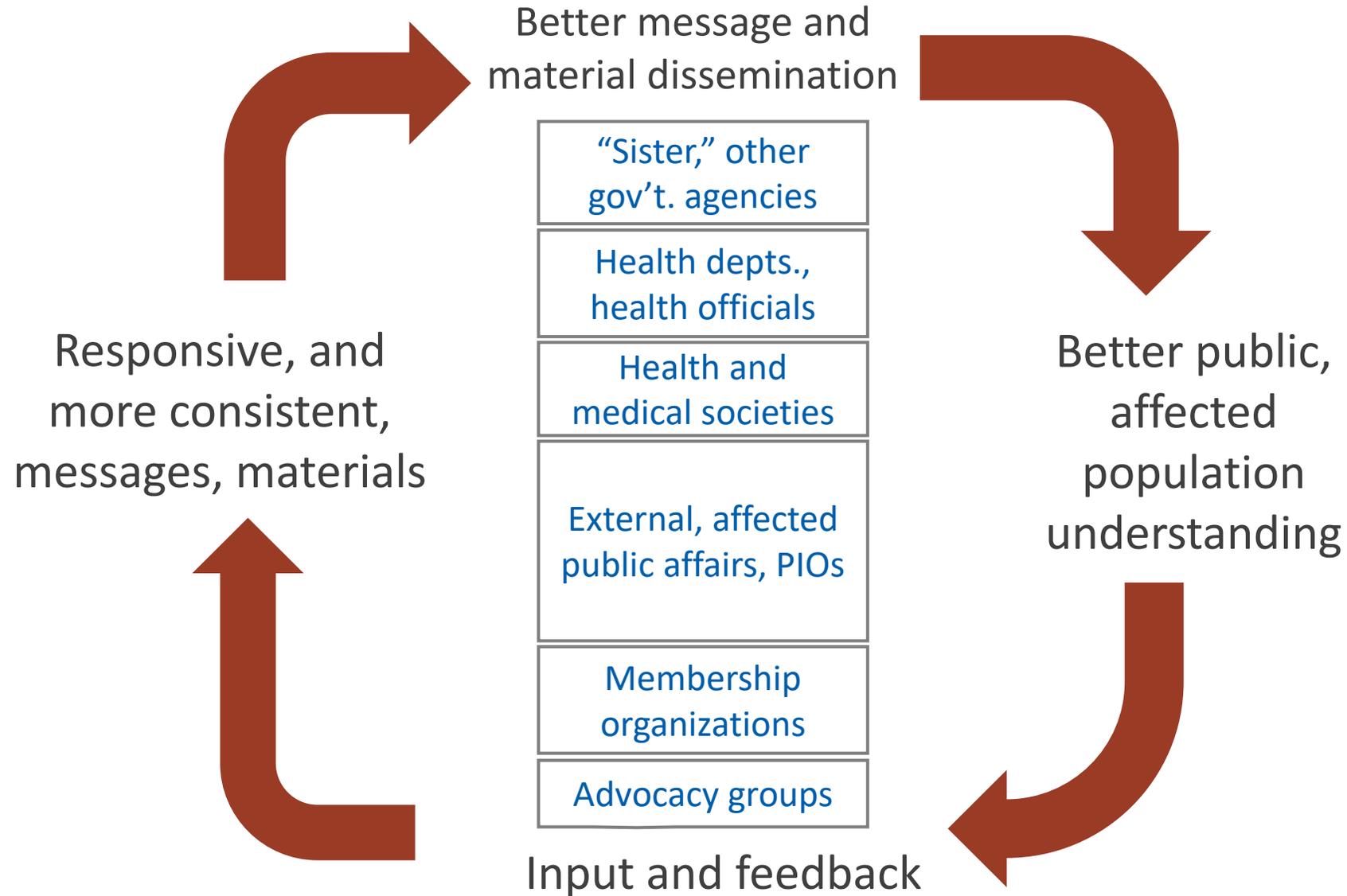
- Start with listening and learning from community
- Be mindful of local concerns and sensitivities
- Understand the influence of the political environment
- Identify organizations and individuals with influence



Areas of Active Local Zika Virus Transmission
 Wynwood Area - NW 22nd St. at the South, NE 2nd Ave to NE 23rd St. at the east; NW 3rd Ave to the west; and NE 36th St to the north
 Miami Beach Area - 28th Street to the north; 8th Street to the south; Intercoastal water to the west and the Atlantic Ocean to the east



Infectious Disease Collaboration and Coordination



In sum, when it comes to high consequence pathogens. . .

1. Practice and preparation do matter
2. Risk communication principles do provide a strong and needed foundation – and are helpful for building and maintaining trust
3. When it comes to public health, communicators must recognize the public, including those most affected, likely have little knowledge and understanding of the pathogen and thus the basis for recommended actions
4. Communication responses, especially messages, need to be multi-faceted, ongoing, and evolve over the course of the outbreak
5. Effective crisis and emergency response communication require quickly engaging with multiple stakeholder and influencers (e.g., politicians, activists groups, etc.)

Effective communication requires knowing your desired outcomes(s) and how you will achieve them

“A” – A set of people who have appropriate beliefs regarding a threat or potential threat and/or who are not doing a recommended behavior, such as receiving a recommended vaccination. . .



“B” – most or more people will have the desired beliefs regarding a threat or potential threat and/or do the recommended behavior, such as receiving a recommended vaccination.

The Core Questions:

How can or will you influence or persuade individuals in your targeted audience(s)?

What communication approaches and messages are most likely to increase your communication success?



Effective communication requires knowing your desired outcomes(s) and how you will achieve them

“A” – A set of people who have appropriate beliefs regarding a threat or potential threat and/or who are not doing a recommended behavior, such as receiving a recommended vaccination. . .



- Expressing empathy and acknowledging uncertainties.
- Recognizing that many, perhaps most, adults know very little about 1) the pathogen and health threat; 2) why protective measures are recommended for specific people; and 3) how vaccines or medicines work.
- Establishing and maintaining trust by personalizing information and advice – including information on the risks as well as benefits of recommended actions.
- Addressing, through explanations and relate-able examples, questions and doubts about recommended actions.

“B” – most or more people will have the desired beliefs regarding a threat or potential threat and/or do the recommended behavior, such as receiving a recommended vaccination.



Thank you

