

# **“Fight the Bite” Zika Virus Webinar**

**District of Columbia Department of Health**

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# Zika Virus Background and Tracking in Washington, DC, and Surrounding States

Andrew Hennenfent, DVM, MPH

*DC Department of Health  
Center for Policy, Planning and Evaluation  
Senior Zoonotic Disease Epidemiologist*

# Aedes Mosquitoes

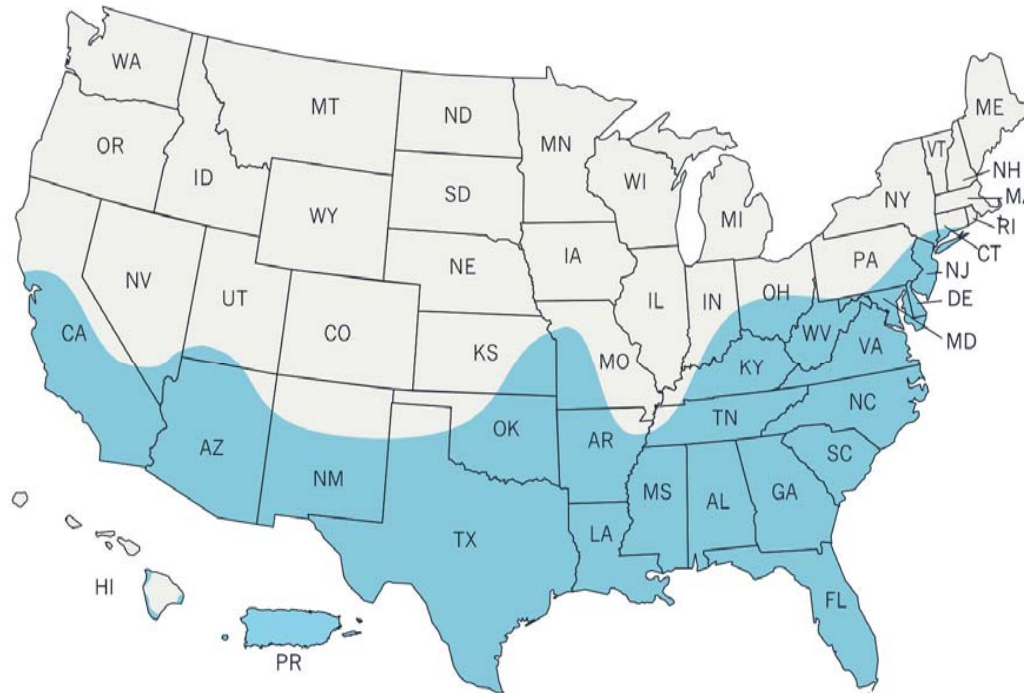
*Aedes aegypti*



*Aedes albopictus*



# *CDC's estimate of the potential range of *Aedes aegypti* in the United States.*



# Keeping Track of Zika in DC

## Who are we targeting through our surveillance?

- Persons who recently traveled to or live in a Zika-affected area (including Miami, Florida)
  - In some cases, the sexual partner (male or female) of someone who has traveled to a Zika-affected area
- Fetuses exposed during pregnancy or around the time of birth

# Keeping Track of Zika in DC

## How do we share the results?

- DC DOH reports the results to the patient's provider (not directly to the patient)
- Positive cases are reported to CDC to be included in national surveillance data
- Data for some cases are included in the US Zika Pregnancy Registry

# Keeping Track of Zika in DC

## How do we share the results?

- DC DOH reports the results to the patient's provider (not directly to the patient)
- Positive cases are reported to CDC to be included in national surveillance data
- Counts of travel-associated and local cases are posted on the DC DOH website (updated daily – as of 8/18/16)

### **Zika Virus Update:**

- Last Update: Daily (5 pm EST)
- Total Human Cases Related to International Travel: 16
- Locally Acquired Mosquito Borne Cases: 0

Zika Virus Information web page: <http://doh.dc.gov/publication/zika-virus-information>

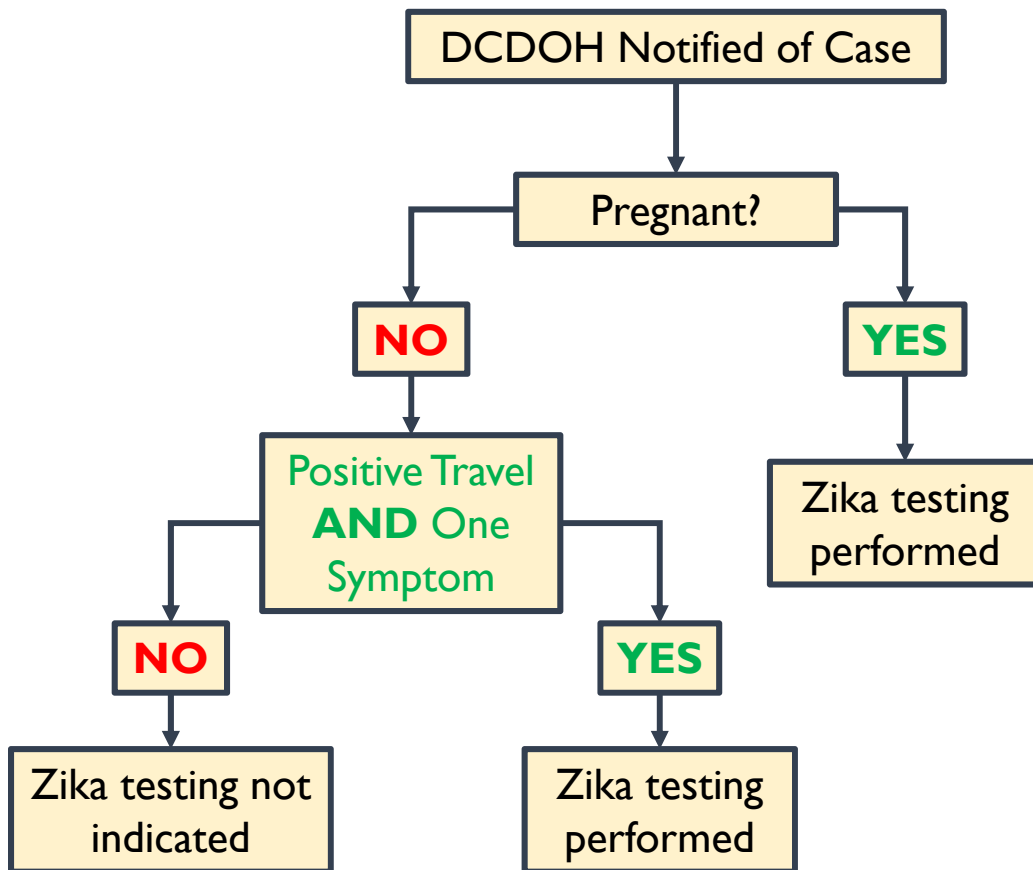
# Getting Tested for Zika

## Who can be tested?

- People that travelled to affected areas and who experience one of the following symptoms **within 2 weeks of travel**: **fever, rash, red eyes, or joint pain**
- All pregnant women who were exposed: by having travelled to affected areas (0-12 weeks after their travel) or by having had unprotected sexual contact with a partner who has travelled
- Pregnant women who were exposed eight weeks before conception (6 weeks before the last menstrual period)



# Getting Tested for Zika




## District of Columbia Department of Health (DC DOH) Zika Virus Laboratory Testing Recommendations


Testing for Zika virus depends on the time between potential exposure and the patient's symptom status

- Viral RNA RT-PCR:** performed on both **serum** and **urine** samples for symptomatic patients within **14 days** of onset and asymptomatic **pregnant women** within **14 days** of the last day of travel OR any pregnant women with an IgM positive test
- Serology (IgM ELISA):** performed on **serum** samples **2 to 12 weeks** after symptom onset for symptomatic patients or the last day of travel for asymptomatic pregnant women
- Plaque reduction neutralization test (PRNT):** confirmatory test performed on all IgM positive **serum** samples at CDC laboratories

Collect 6 mL of venous blood in a **tiger/speckled top tube** or **red top tube**



Collect 5 - 15 mL of urine in a **sterile screw-top container** and seal with parafilm



To test other sample types (CSF, amniotic fluid, placenta, cord blood) contact DOH at (202) 442-8141 or [DOH.EPI@dc.gov](mailto:DOH.EPI@dc.gov)

**Who qualifies for testing?**

**Symptomatic** (*fever, conjunctivitis, rash, or arthralgia*) men and women with **appropriate travel history** or **sexual exposure**

**All pregnant women**, regardless of symptoms, with **appropriate travel history** or **sexual exposure**

**Interpreting test results**

Detailed guidance on interpreting test results can be found in the CDC MMWR titled: **Interim Guidance for Interpretation of Zika Virus Antibody Test Results**

**Always submit serum and urine samples when testing pregnant women**

Symptom Onset	Testing Symptomatic Non-Pregnant Patients					Testing not indicated
	RNA RT-PCR			IgM ELISA		
Day 0	Day 1	Day 7	Day 14	Beyond Day 14	Week 12	Beyond Week 12
	Viremia					

Last day of Travel	Testing Pregnant Women					Contact DOH to discuss case
	RNA RT-PCR			IgM ELISA		
Day 0	Day 1	Day 7	Day 14	Beyond Day 14	Week 12	Beyond Week 12

Last Updated 8/18/2018

# Zika Risk

## What are the long-term side effects?

- For most people, nothing
- Sexual transmission
- Microcephaly
- Guillain-Barré syndrome



# Zika Risk

## What is the risk?

- Pregnant women
- Women trying to become pregnant
- Men whose partner is pregnant
- Infants



# Recommendations for Pregnant Women

- **Avoid travel** to Zika-affected areas
- **Avoid sexual contact** with anyone who may have been infected with the Zika virus, or use condoms consistently and correctly for the duration of the pregnancy



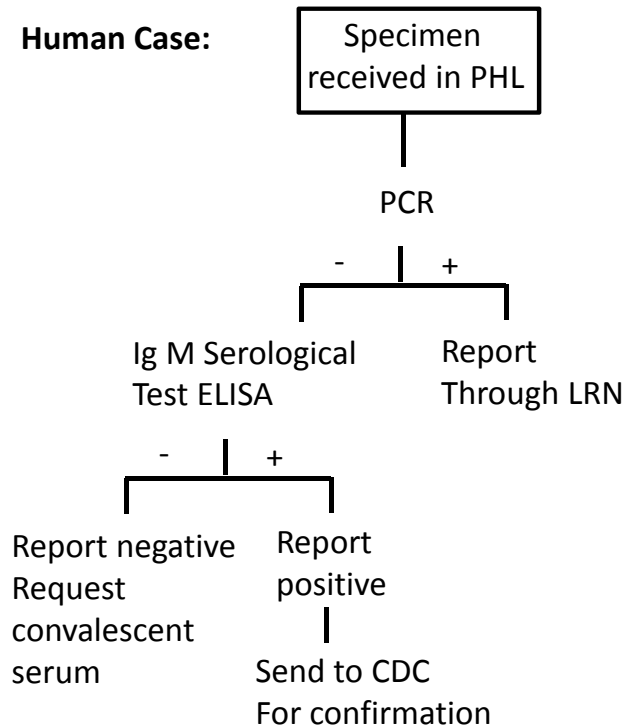
# Laboratory Testing

Horng-Yuan Kan, Ph.D, TS (ABB)

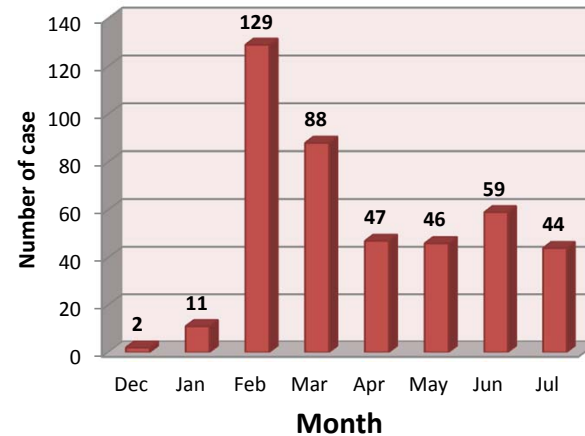
*DC Department of Forensic Sciences  
Public Health Laboratory  
Interim Assistant Laboratory Director*

# DFS-PHL Zika virus Testing

**Human Case:**



**Zika Specimen Received**



To date, a total 426 specimens have been tested at DC PHL by PCR with 16 positive of Zika virus.

# DFS-PHL Zika virus Testing

## Guidance for U.S. Laboratories Testing for Zika Virus Infection

Specimen Types	Test		Virus detection
Serum, CSF	PCR	Zika IgM	Zika, Dengue, and Chikungunya

Specimen Types	Test	Virus detection
Urine, Amniotic fluid	PCR	Zika

Specimen Types	Test	Virus Detection
Tissue Specimens	PCR	Zika, Dengue, and Chikungunya



# DFS-PHL Enhanced Mosquito Surveillance

## Proper Clinical Specimen for Laboratory Testing

Case	Specimen type	Diagnostic methods	
		RT-PCR	Serology Testing : IgM and PRNT
Symptomatic Suspect Cases	Serum	Yes	Yes
	CSF	Yes	Yes
	Urine	Yes	No
	Other*	Yes	No
Asymptomatic Pregnant Women	Serum	Yes	Yes

\*: amniotic  
fluid, placental  
tissue, cord

# DFS-PHL Enhanced Mosquito Surveillance

## Guidance for U.S. Laboratories Testing for Zika Virus Infection

Type of specimen	Sample volume (ml)	Storage condition	Shipping condition	Reference
Serum	6 ml	2-8°C	4°C Ice pack	PHL Zika Sample Collection Guidance
Urine	5 to 15 ml	2-8°C	4°C Ice pack	
CSF	3 ml	2-8°C	4°C Ice pack	
Amniotic fluid	3 to 5 ml	2-8°C	4°C Ice pack	
Cord Blood	3 ml	2-8°C	4°C Ice pack	
Tissue	See CDC guideline*			

\* <http://www.cdc.gov/zika/laboratories/test-specimens-tissues.html>  
Collecting & Submitting Fetal Tissue Specimens for Zika Virus Testing

# DFS-PHL Enhanced Mosquito Surveillance

## Specimen storage and shipping:

- Store all specimens at 4°C and ship in a cooler with ice packs within 24 to 72 hours after collection. For delays exceeding 72 hours, freeze at -20°C and ship with ice packs.
  - **Note:** It is important that frozen samples not thaw during shipping. To prevent this be sure to pack with extra ice packs during the summer months.
- **Required** Documentation:
  - CDC 50.34 form
  - Case report
  - DC Public Health Laboratory Chain of Custody form
  - DC Public Health Laboratory Test requisition form



# DFS-PHL Enhanced Mosquito Surveillance

Total number of positive of Flavivirus from mosquito pool samples

Month	April	May	June	July
WNV	0	0	3	16
CHIKV	0	0	0	0
Dengue	0	0	0	0
Zika	0	0	0	0

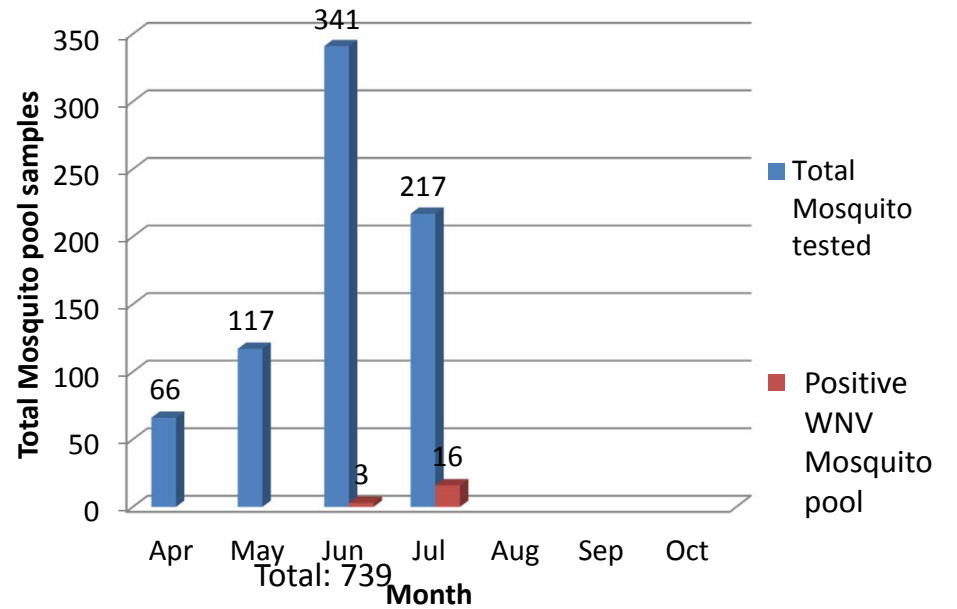


*Aedes aegypti*



*Aedes albopictus*

Total and positive mosquito pool samples



# Arbovirus Surveillance and Mosquito Control in Washington, DC

Vito DeVento, DVM, MS

*DC Department of Health  
Health Regulation and Licensing Administration  
Animal Services Program Manager  
Executive Director Board of Veterinary Medicine*

# National Capital Region Response



# Arbovirus Surveillance of Zika in DC

## How is the surveillance being conducted?

- Weekly surveillance throughout all 8 District Wards
- Sites selected on population and environment
- Traps utilized:
  - Gravid Traps
  - Carbon Dioxide Traps

Samples tested weekly by the Public Health Laboratory



# Mosquito Traps

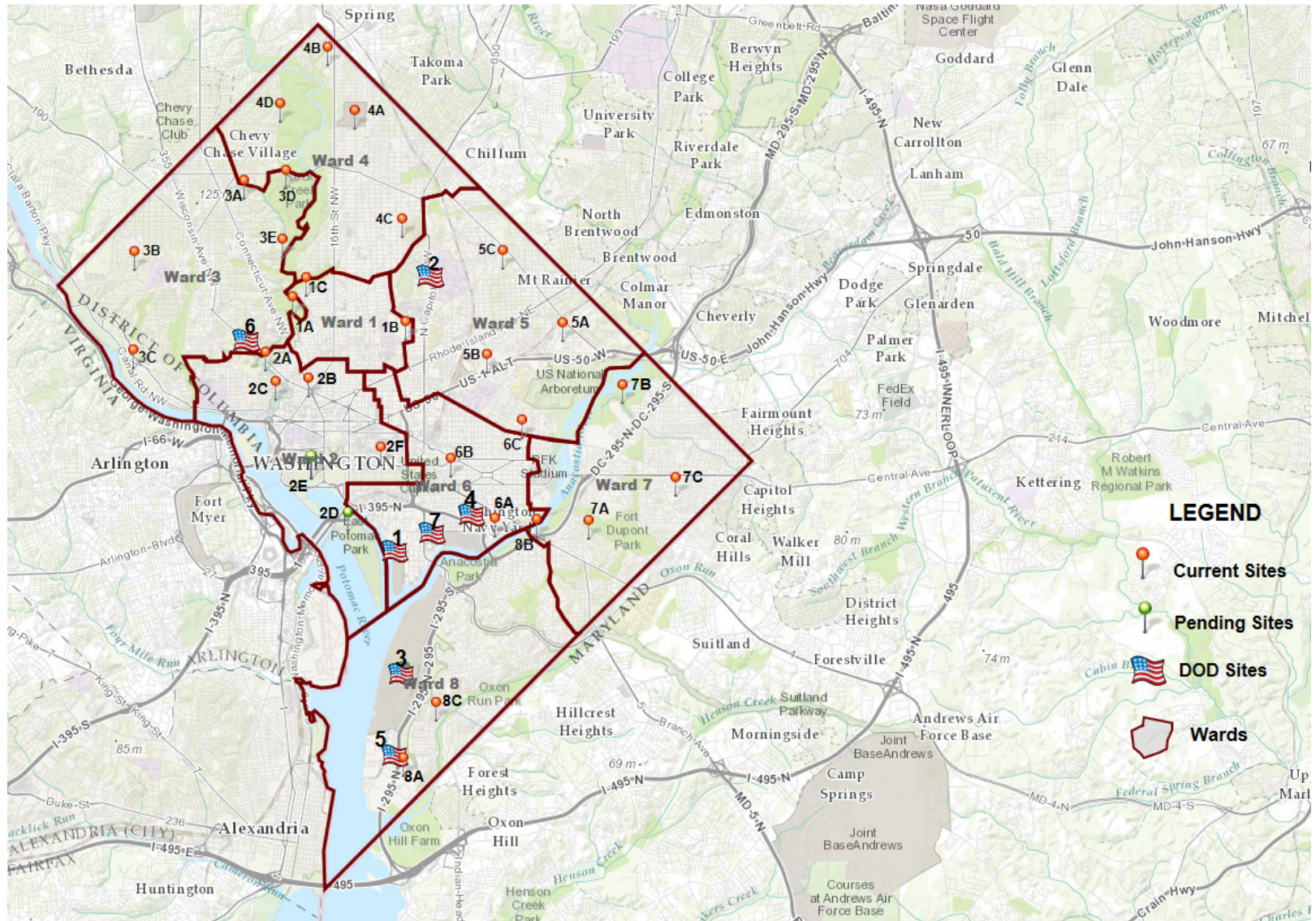


Gravid Style Trap



Carbon Dioxide Style Trap





# Mosquito Control in DC

## What methods of control are being utilized?

- Reduce or eliminate mosquito breeding habitats
- Larvicide application



# Mosquito Control in DC

- Reduce or eliminate mosquito breeding habitats



# Mosquito Control in DC

## Enforcement:

- Investigations
- Abatement notice
- Citation issuance



# Mosquito Control in DC

- Larvicide application

## Dunks



## Vectolex





# Mosquito Control in DC

## Larvicide application

- District-wide: storm drains, standing water
- Sister government agencies
- Residential application



# Mosquito Prevention in DC

- When outdoors, wear long sleeves, pants, socks and shoes
- Apply Environmental Protection Agency (EPA)- approved insect repellent to exposed skin and/or clothing as directed by the product label
- When indoors, use air-conditioning and ensure that windows have intact screens and doors are secured



# Zika Outreach in DC

- Website
- Neighborhood community meetings
- Community events
- OB-GYN providers
- Department of Health – walk in appointment



# DCDOH Zika Contact Information

DC DOH Website:

<http://doh.dc.gov/publication/zika-virus-information>

Testing or Travel Questions:

[DOH.EPI@dc.gov](mailto:DOH.EPI@dc.gov)

Mosquito Related Issues:

[Mosquito.Info@dc.gov](mailto:Mosquito.Info@dc.gov)

or (202) 442-5833

The screenshot shows the DC Department of Health website. At the top right, there are links for "311 Online", "Agency Directory", "Online Services", and "Accessibility". The DC.gov logo is on the left, with "Mayor Muriel Bowser" and "Department of Health" below it. A search bar is on the right. A navigation menu includes "Home", "Services", "Health Professionals", "Infants, Children and Teens", "HIV/AIDS", "Resources", "Vital Records", and "About DOH". Three featured service cards are visible: "Take the Safer, Stronger DC Survey", "Staying Informed on Zika Virus", and "DC Center for Rational Prescribing".

# Questions?

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