

# NEW HEALTH DIRECTORS ORIENTATION:

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## COMMUNICABLE DISEASE OVERVIEW

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# QUARANTINE AND ISOLATION ORDERS

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Not always clear and requires careful consideration

# Isolation and Quarantine

- Used to help protect the public by preventing exposure to people who have or may have a contagious disease.
- **Isolation** separates sick people with a contagious disease from people who are not sick.
- **Quarantine** separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick.
  - In addition to serving as medical functions, isolation and quarantine also are “police power” functions, derived from the right of the state to take action affecting individuals for the benefit of society.
  - The greater good of the public vs. individual rights.

# Federal Law: Rarely Used

- Under section 361 of the Public Health Service Act (42 U.S. Code § 264), the U.S. Secretary of Health and Human Services is authorized to take measures to prevent the entry and spread of communicable diseases from foreign countries into the United States and between states.
- The authority for carrying out these functions on a daily basis has been delegated to the Centers for Disease Control and Prevention (CDC).
- U.S. Customs and Border Protection and U.S. Coast Guard officers are authorized to help enforce federal quarantine orders (applicable in port counties and airports)

<https://www.cdc.gov/quarantine/aboutlawsregulationsquarantineisolation.html>

# State, Local, and Tribal Law

- States have police power functions to protect the health, safety, and welfare of persons within their borders.
- Goal: To control the spread of disease within their borders, states have laws to enforce the use of isolation and quarantine.
- Laws vary from state to state
  - Enforceable within their borders
  - Criminal misdemeanor in most states

## In North Carolina

Quarantine measures can be issued by the State Health Director or a Local Health Director (pursuant to NCGS130A-145 - Quarantine and Isolation Authority)

- Most frequently Local Health Director
- Therefore, when Local Health Director is unavailable must have clear line of delegation of this authority.

## Key Considerations:

**Scope: includes** those determined to be at risk of exposure and what is known about the incubation period (how long it takes for symptoms to develop after exposure)

**Quarantine period:** only as long as necessary to protect the public

**Exposure definitions: variable dependent on disease**

- **Air borne?**
- **Blood and body fluids?**
- **High-risk of exposure?**
- **Low-risk exposures?**

# Example:

## Ebola Memo – August 14, 2014

To: All North Carolina Local Health Directors

From: Megan Davies, MD, State Epidemiologist

Re: North Carolina INTERIM Quarantine Strategy for  
Persons Exposed to Ebola Virus Disease



# Ebola Memo

- **Scope:** This guidance shall apply to all persons who are determined to have had contact with a suspected or confirmed case of Ebola virus disease (EVD). This guidance sets the quarantine criteria and conditions for such persons arriving in North Carolina within 21 days after their most recent exposure.
- **Quarantine period:** For persons reasonably suspected of having had high-risk or low-risk exposures to EVD, the quarantine period will extend for 21 days after the last exposure.
- **Exposure definitions:** Please refer to the CDC EVD case definition(<http://www.cdc.gov/vhf/ebola/hcp/casedefinition.Html>) for information on what constitutes a suspected or confirmed case and what constitutes high-risk or low-risk exposure.
  - Definition varied at different stages of the Ebola crisis

# Conditions of quarantine

All persons arriving in North Carolina who -

1. Travelled to an affected region within 21 days and either had contact with a known or suspected Ebola case
2. Worked in a healthcare setting in an affected region
3. Or participated in funeral rites in an affected region

Should contact their local health department or the Communicable Disease Branch epidemiologist on call to undergo a thorough risk assessment.

# EXAMPLES OF COMMON AND UNCOMMON CD ISSUES

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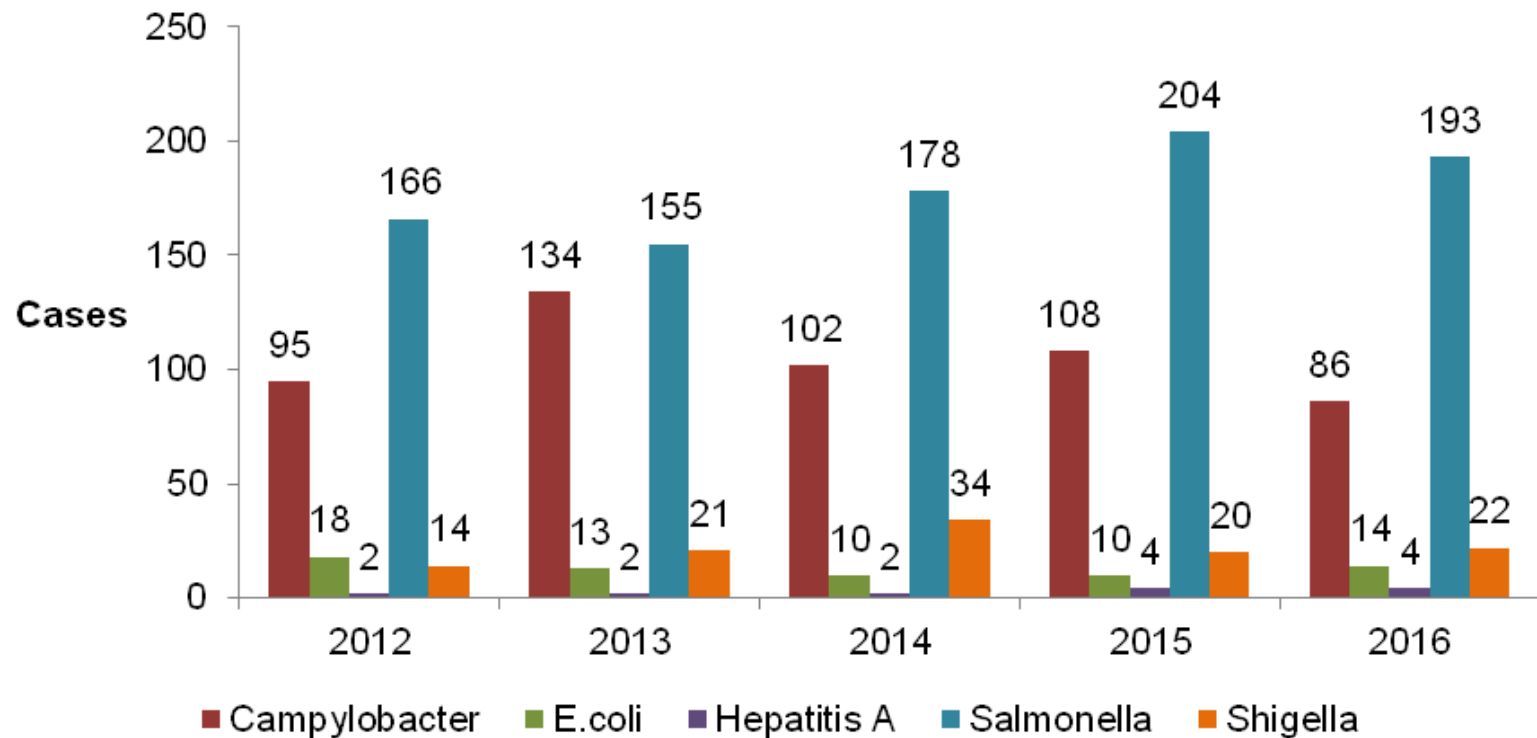
Wake County, NC

# 74 Reportable Diseases in NC Code

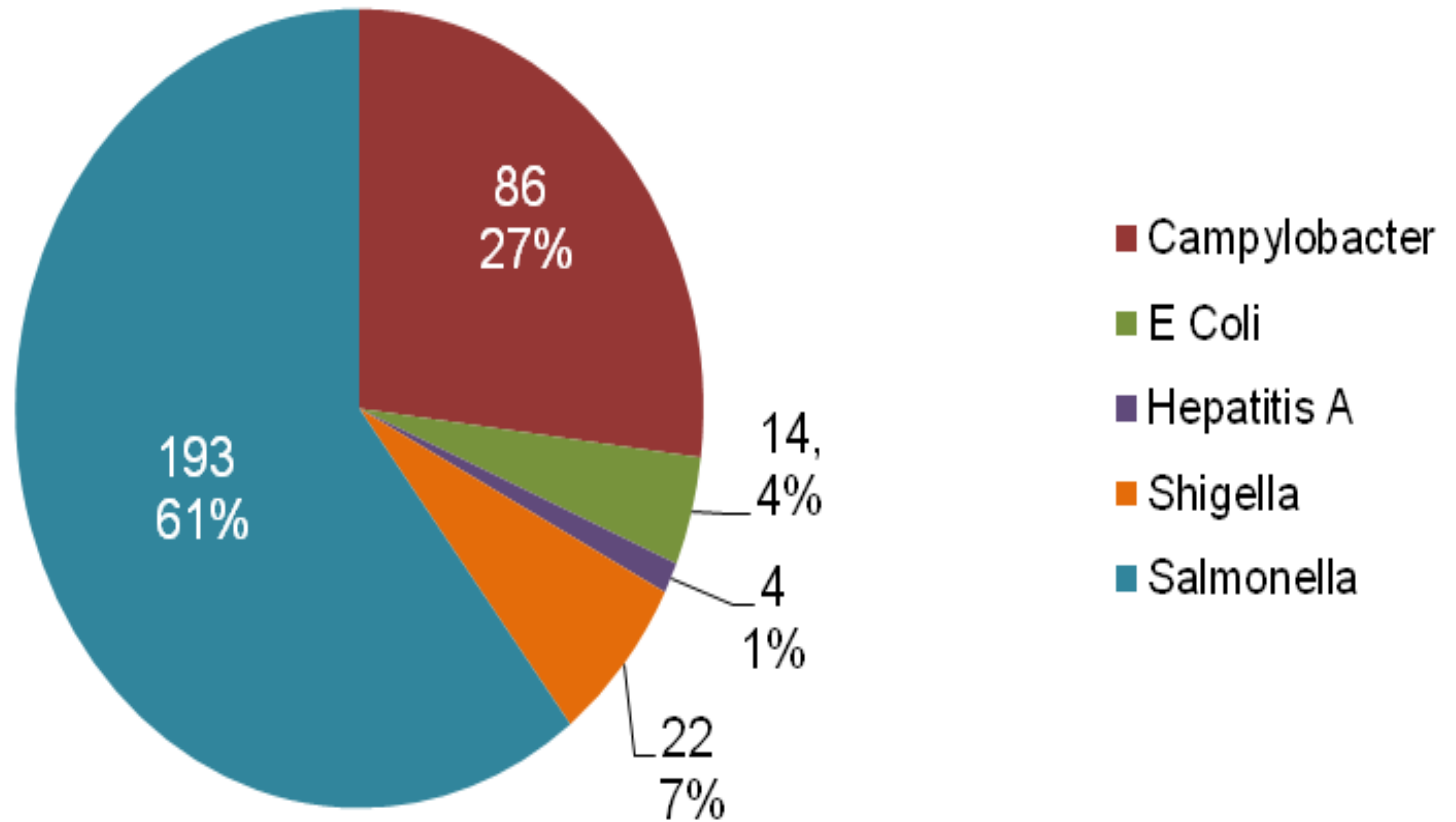
- 74 reportable diseases and conditions specified in the N.C. Administrative Code rule 10A NCAC 41A .0101  
<http://epi.publichealth.nc.gov/cd/index.html>
- Communicable diseases are illnesses caused by infectious agents (bacteria, viruses, parasites, fungi and prions) or their toxins that are transmitted from an infected person, animal, plant or from the environment
- See online link to PH Quarterly Reports  
<http://www.wakegov.com/humanservices/data/Documents/Communicable%20Disease%20Report%202017%20FINAL.pdf>

# Foodborne Disease

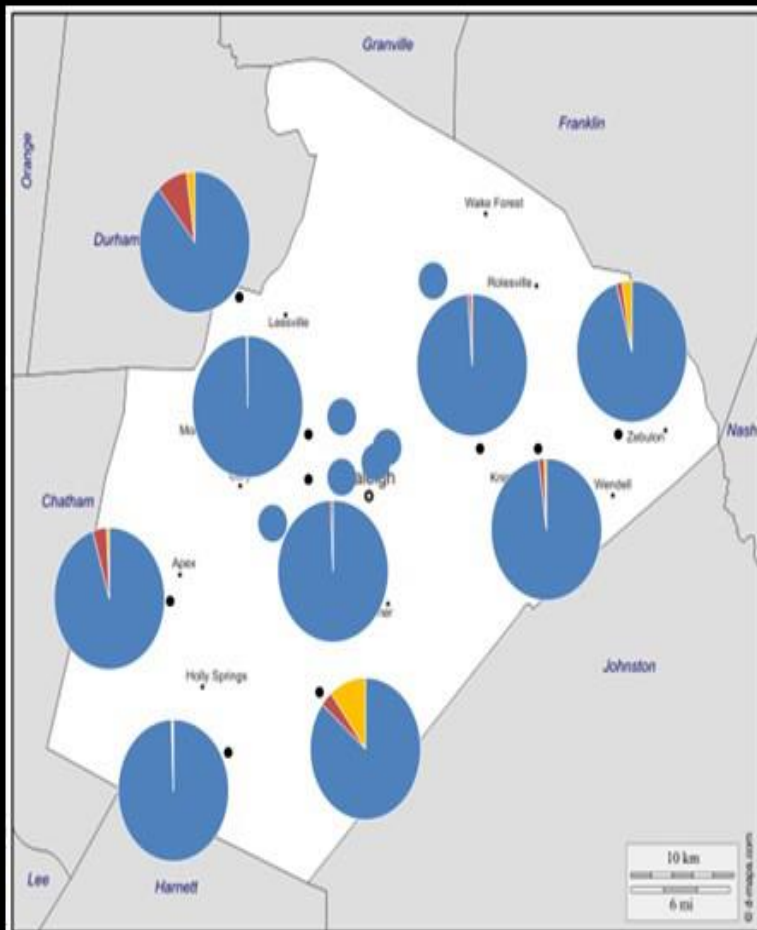
Five-Year Trend,  
Most Frequently Reported Foodborne Diseases  
Wake County, 2012-2016



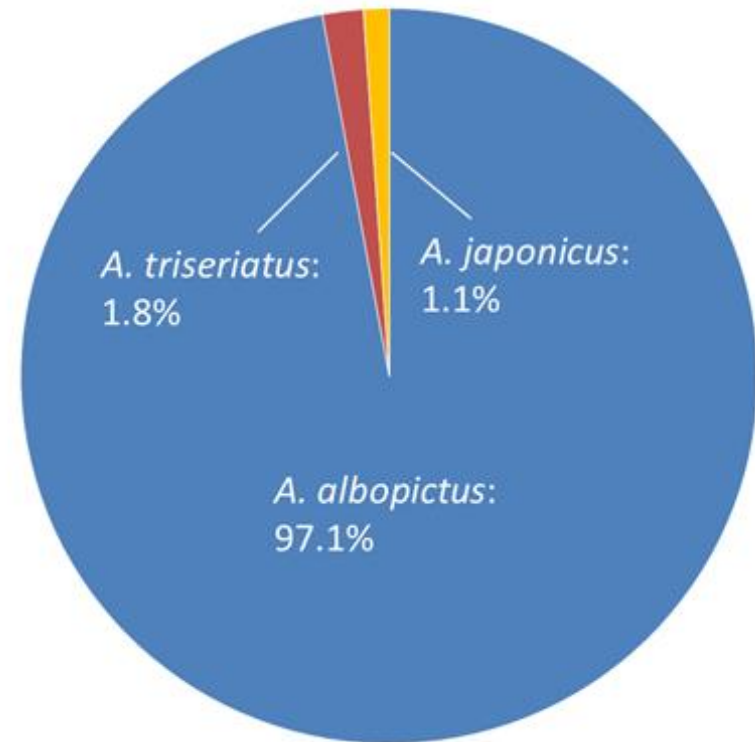
## Reported Foodborne Illness Cases in Wake County, 2016



# Zika Mosquito Surveillance –



Total Species Diversity Across All Wake County Sites



# Pools and Cryptosporidium

- Summer 2016:
  - 62 Wake County residents had symptoms of cryptosporidiosis (crypto) severe enough to go to the doctor for testing.
  - Many others were most likely infected.
  - The crypto outbreak investigation revealed that those infected had been swimming in pools.
  - Thirty-nine pools at 17 different locations were affected and several pools had to be closed temporarily.

**DO YOUR PART**  
to keep our pools clean and healthy!

WAKE COUNTY  
NORTH CAROLINA

**DON'T SWIM IF YOU'RE SICK!**

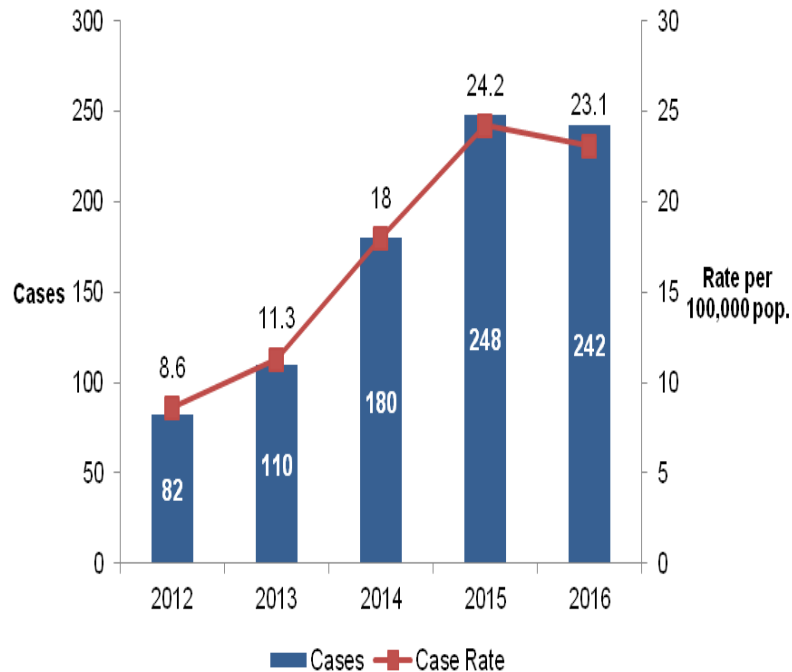
**STAY OUT OF THE POOL FOR 2 DAYS**  
after the last time you vomited or had diarrhea.

**TAKE KIDS TO THE BATHROOM EVERY 1 HOUR**  
Change diapers in the bathroom, not poolside.



# Early Syphilis

Early Syphilis Cases and Rates, Wake County 2012-16



Those at highest risk for early syphilis continue to be:

- People with HIV infection
- People who meet partners on the internet
- People ages 25-34
- Men (particularly men who have sex with men, or MSM)
- Black/African-Americans

Table 9

### People Screened by WCHS for HIV and Hepatitis C April 1, 2016 — March 31, 2017

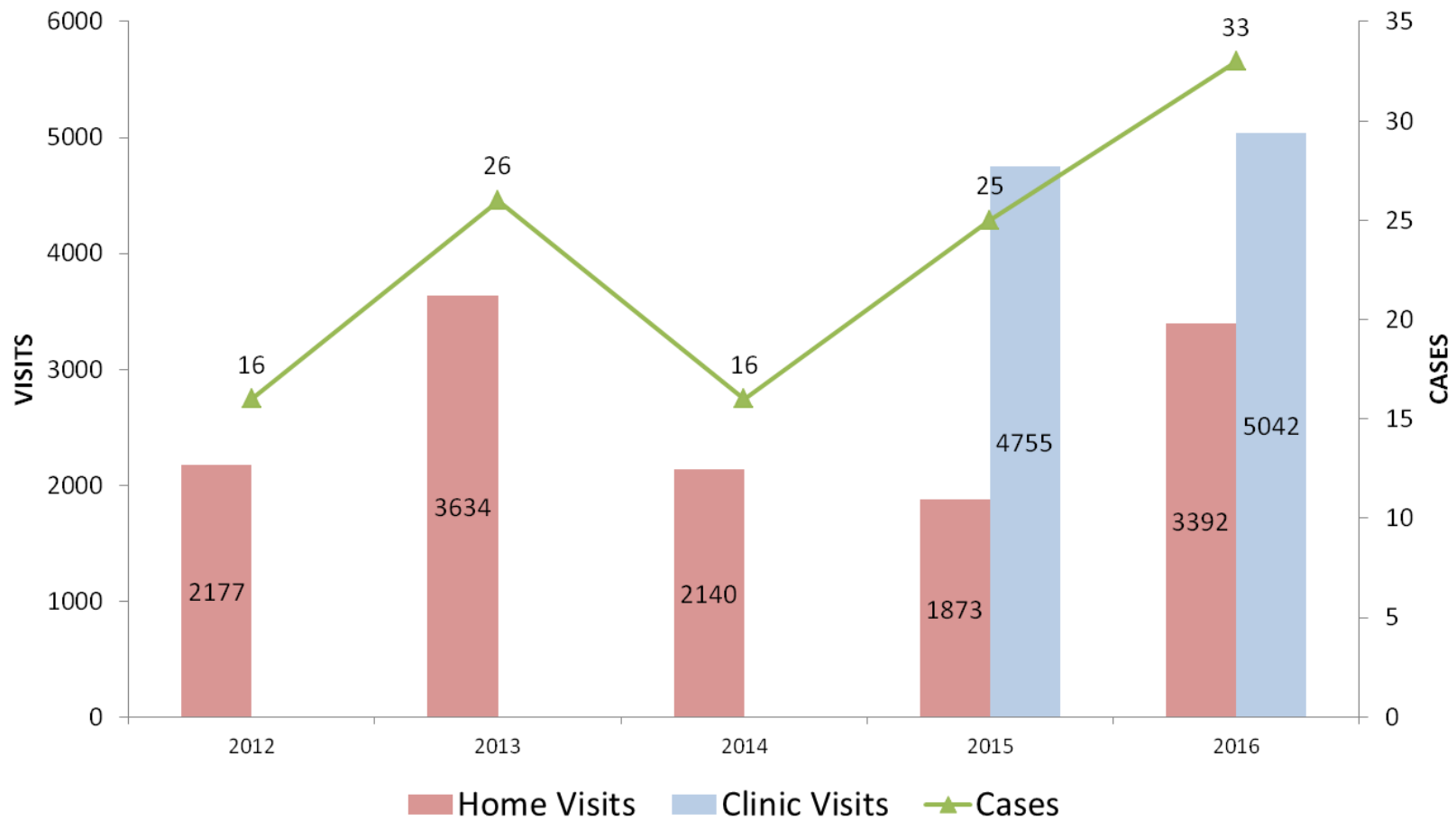
	Baseline						FOCUS Project Start						
HIV	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	TOTAL
Number HIV tests performed*	1680	1700	1655	1685	1760	1691	1711	1184	366	1809	1625	1115	18981
Number HIV + patients identified through testing	11	12	21	7	9	17	11	8	8	13	9	7	126
Number diagnosed acute HIV infections	0	0	0	3	0	0	0	0	0	0	0	7	10
Hepatitis C	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	TOTAL
Number HCV Ab tests performed	260	253	264	162	157	137	372	414	398	442	420	585	3864
Number HCV Ab positive patients identified through testing	11	17	17	12	15	16	19	16	11	25	19	21	199
Number HCV RNA tests performed	11	16	17	11	11	16	19	16	11	25	18	21	192
HCV RNA positive patients identified through testing	10	11	10	8	11	16	19	12	7	17	14	13	148
HCV RNA positive patients (identified through testing) attended first appointment for clinical services	0	0	0	0	0	0	5	0	5	13	4	36	63

Source: WCHS Centricity Electronic Medical Record.

\*Note: The FOCUS project has not modified the WCHS universal opt-out HIV testing which had been implemented prior to the start of the FOCUS grant.

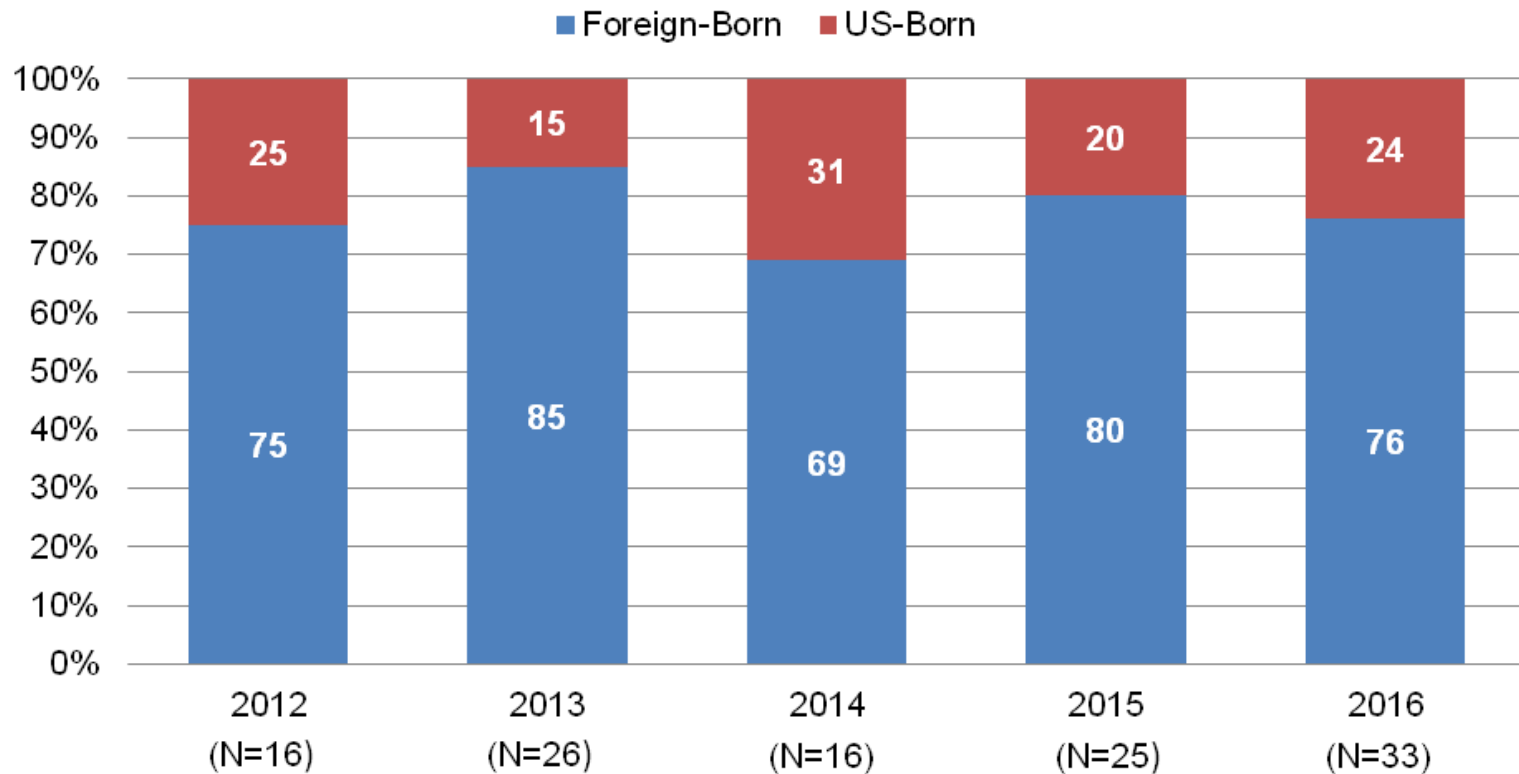
# Work involved with 33 TB Cases in Wake County

**TB Cases Compared to Home Visits and Clinic Visits\***  
**Wake County, 2012-2016**



# Foreign Born Comparison

Wake County TB Cases  
Percentage of Foreign Born Compared to US Born, 2012-16



# Rare Congenital Tuberculosis – GU TB Case

Congenital infection by vertical transmission is rare with only 358 cases reported till 1995 and another 18 cases reported from 2001 to 2005. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4181157/>

**Descriptive: Local hospital in Wake County, foreign born female with GU TB (undiagnosed), underwent in vitro fertilization in Florida.**

**Premature labor, infant admitted to NICU until demise -**

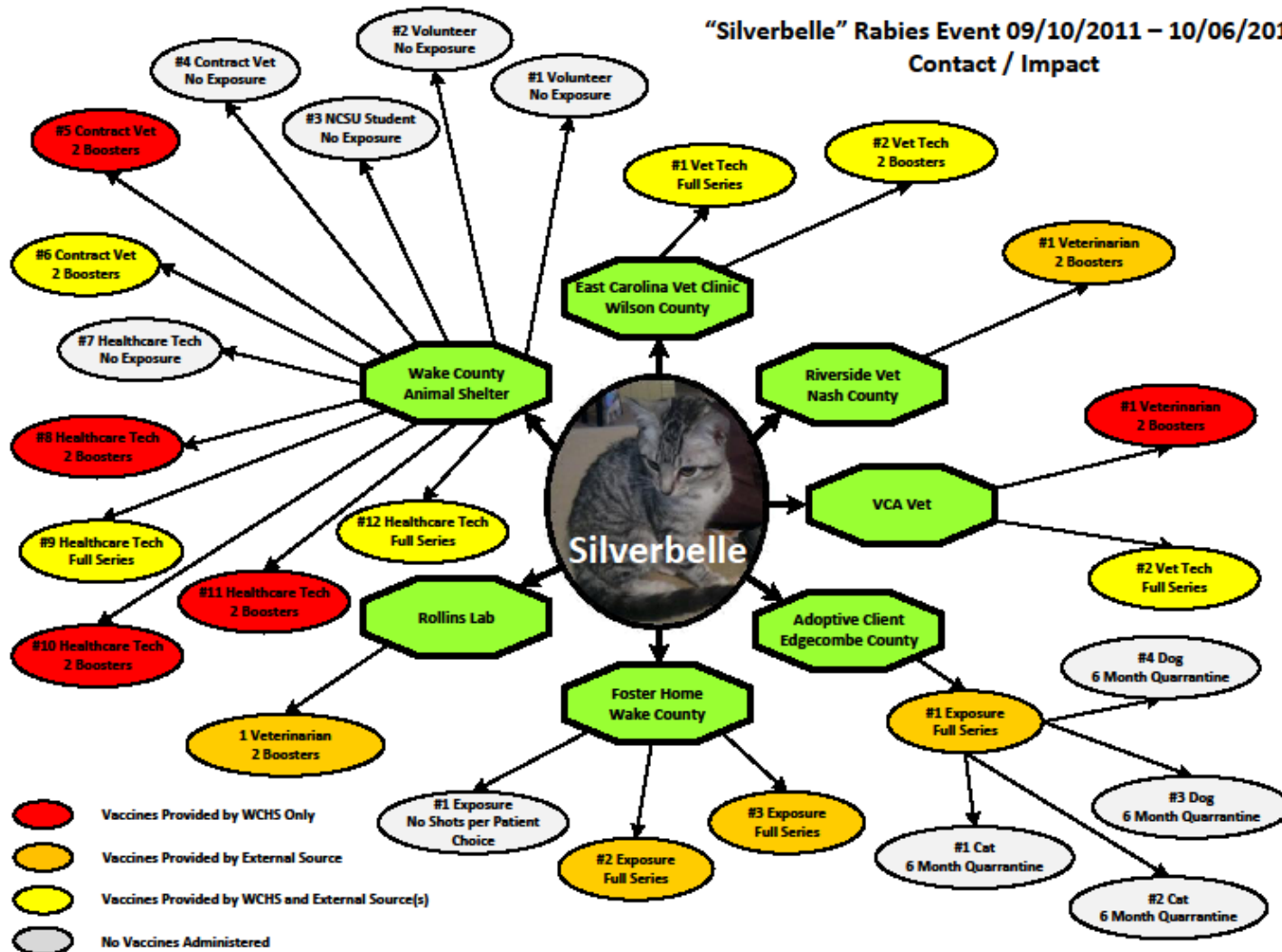
- 26 potentially exposed infants
- 23 family members exposed
  - 1 positive; patient initiated care at Wake health department

# Staff and Volunteers Exposed to Case

	Potentially exposed to infant	Potentially exposed to mother	Total
<b>Total</b>	135	264	399
<b>TST/Evaluation Negative</b>	125	238	363
<b>TST Positive</b>	7	0	7
<b>Did not completed screening</b>	3*	26**	29

# Contact / Impact Chart

## "Silverbelle" Rabies Event 09/10/2011 – 10/06/2011 Contact / Impact



# Dollar Cost Chart

## "Silverbelle" Rabies Event 09/10/2011 – 10/06/2011

### Dollar Cost



Wake County Human Services Costs (Estimate)		
CD Nurse	40 hrs. x \$30/hr.	\$1,200
Clinic E Staff	22 Doses Administered	
	- \$215 Nursing	
	- \$85 Administrative	\$300
		<hr/>
		\$1,500

Wake County Animal Control Costs (Estimate)		
Shelter Employees		\$2,111
Veterinarians		Pending
Shelter Quarantine Fees		\$800
	(10 cats x \$8/day x 10 days)	
		<hr/>
		\$3,111 +

Treatment Cost for Rabies Vaccine and Immune Globulin (IG)		
Total Expense (Estimate)		
	- 8 Patients Full Series (IG + 4 rabies vaccines)	
	- 9 Patients Booster Doses (2 rabies vaccines)	
		\$85,500
Vaccine Cost to WCHS		
	- 30 Doses Rabies Vaccine x \$200/dose	\$6,000
		<hr/>
		\$91,500

**ESTIMATED COSTS TO DATE** **\$96,111**



# QUESTIONS???

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