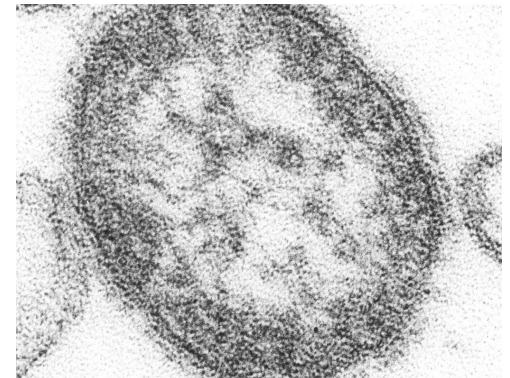


**Measles Update**  
**Mary Beth Grimm**  
**Epidemiologist – Health Protection**  
**CHSAC October 3, 2018**

## What is Measles

- Measles is a respiratory disease caused by a virus.
- Measles is one of the most contagious diseases.
- Measles has been around for more than 1,000 years.
- Millions of people worldwide get measles each year, and thousands die from the disease.



## Measles Symptoms

- High fever
- Cough
- Runny nose
- Red, watery eyes
- Tiny white spots inside the mouth
- Rash from head to toe
  
- Three to five days after symptoms begin, a rash breaks out.
  - When the rash appears, a person's fever may spike to more than 104° Fahrenheit
  - After a few days, the fever subsides and the rash fades.



# Measles Case Identification: Clinical Symptoms

Exposure

8 – 14 days  
(max 21)

2 – 4 days

4-7 days

Incubation period

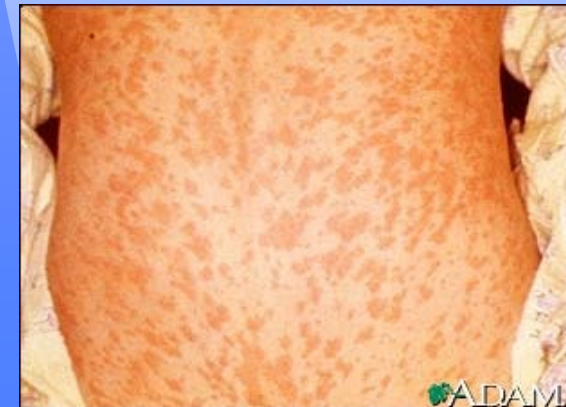
Prodrome:

Fever  
Cough  
Coryza  
Conjunctivitis

Koplik  
Spots

Head → limbs

Maculopapular  
rash





## Measles Complications

Complications occur in 30% of reported measles cases and include:

Diarrhea (8%)

Otitis media (7%)

Pneumonia (6%)

Encephalitis (0.1%)

Death (0.2 %)\*

\*Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases*

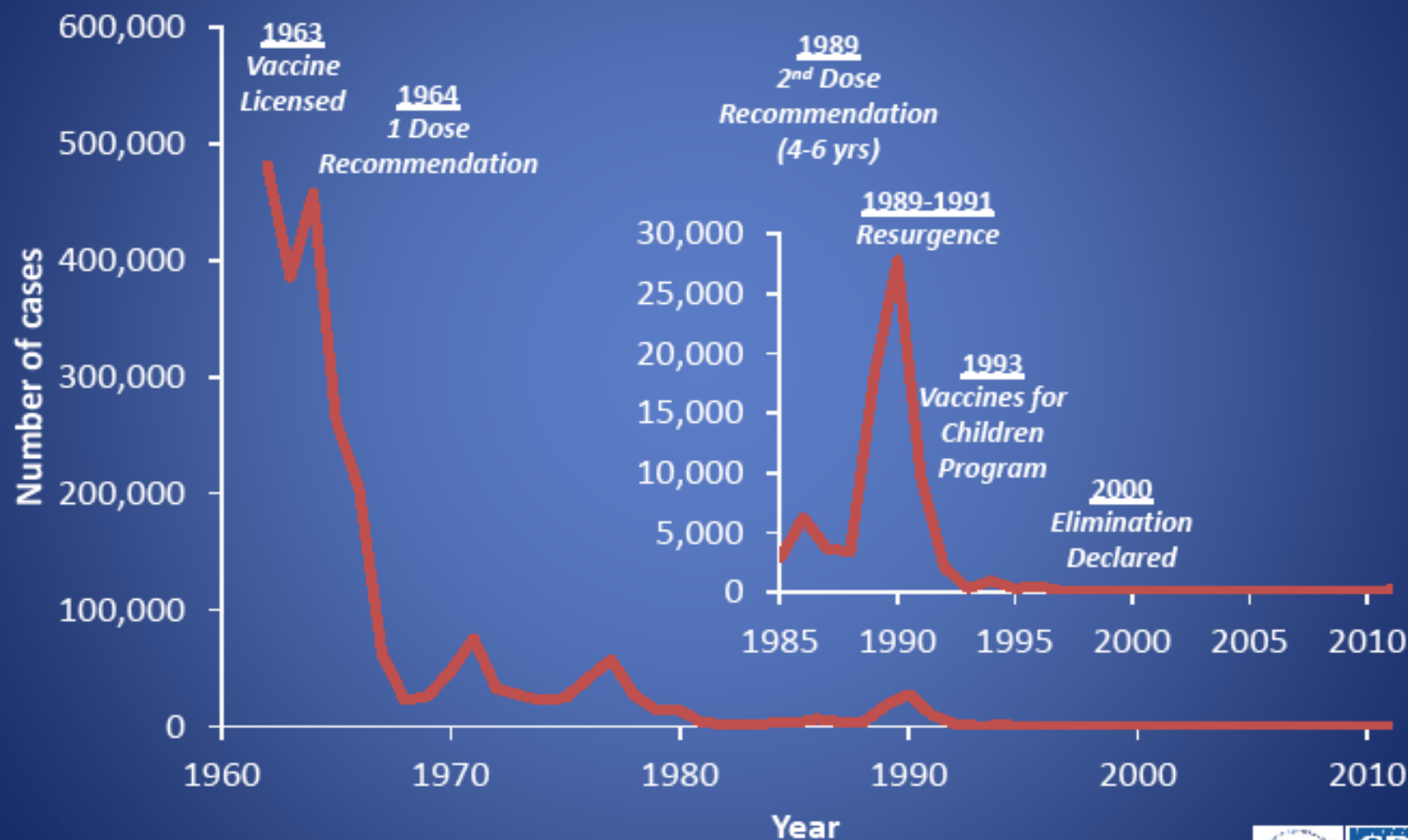
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## Measles Spread and Prevention

- Spread in air by droplet nuclei (airborne)
  - Highly contagious
    - 90% chance of developing disease with face to face contact
  - Vaccine preventable:
    - 95% effective with 1 dose at 12 months
    - 99% effective with 2 doses
-

# Measles, United States, 1962-2011\*



\*As of October 14, 2011



## Measles Epidemiology in the U.S.

- Before introduction of vaccine (1963) approximately 500,000 cases annually
- 1989, 2<sup>nd</sup> dose recommendation
- 1998, ACIP and AAP recommendation for school entry requirements
- Fewer than 150 cases reported each year 1997-2004\*

\*VPD Surveillance Manual, 4<sup>th</sup> Edition, 2008 Measles Chapter 7-1

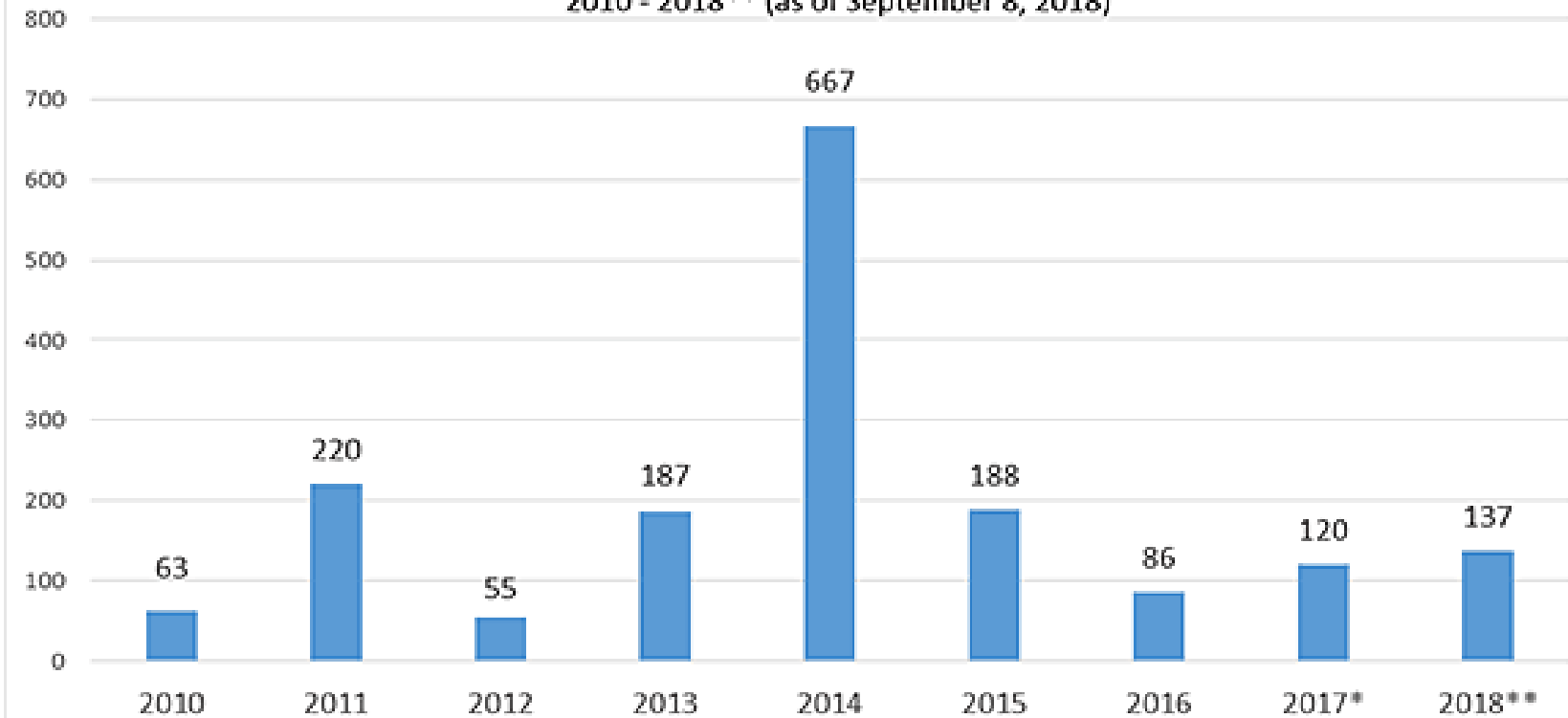
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## NUMBER OF MEASLES CASES REPORTED BY YEAR

2010 - 2018\*\* (as of September 8, 2018)

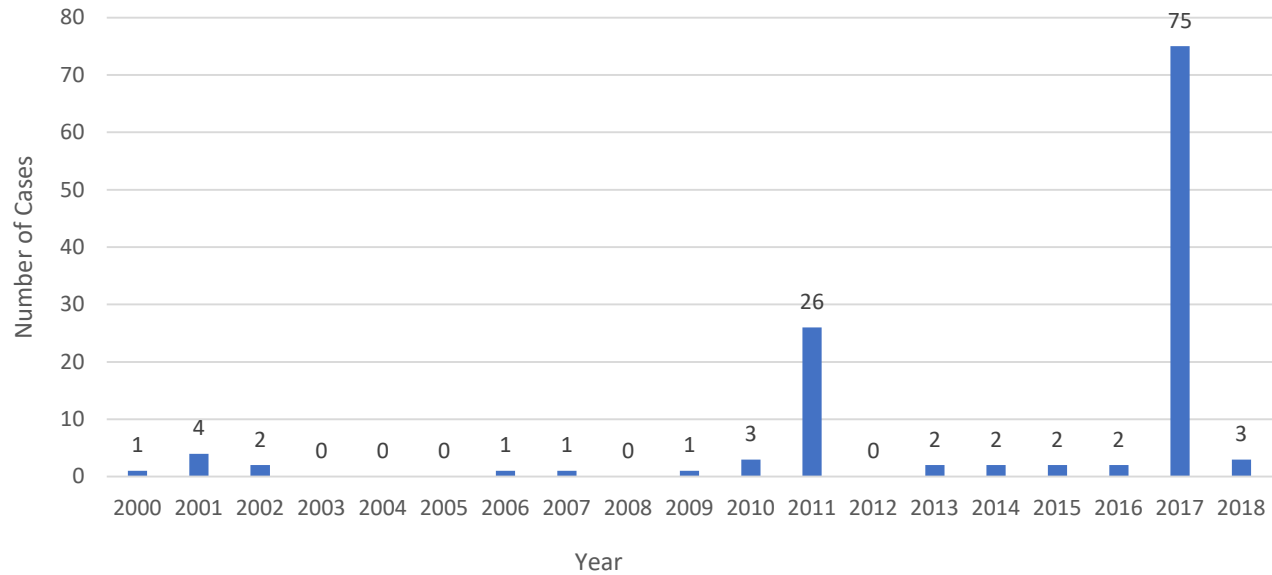


The number of US reported cases in 2018 is similar to recent years and is in the expected range.

## **Spread of Measles U.S.**

- The majority of people who get measles are unvaccinated.
  - Measles is still common in many parts of the world including some countries in Europe, Asia, the Pacific, and Africa.
  - Travelers with measles continue to bring the disease into the U.S.
  - Measles can spread when it reaches a community in the U.S. where groups of people are unvaccinated.
-

Measles Cases MN  
2000-2018





## Somali Community and Autism Concerns

- Perceived high rates of autism in the Somali community - many young Somali children in special education classes
- Andrew Wakefield and others met with the community multiple times
- MMR vaccine blamed
- Parents began refusing MMR



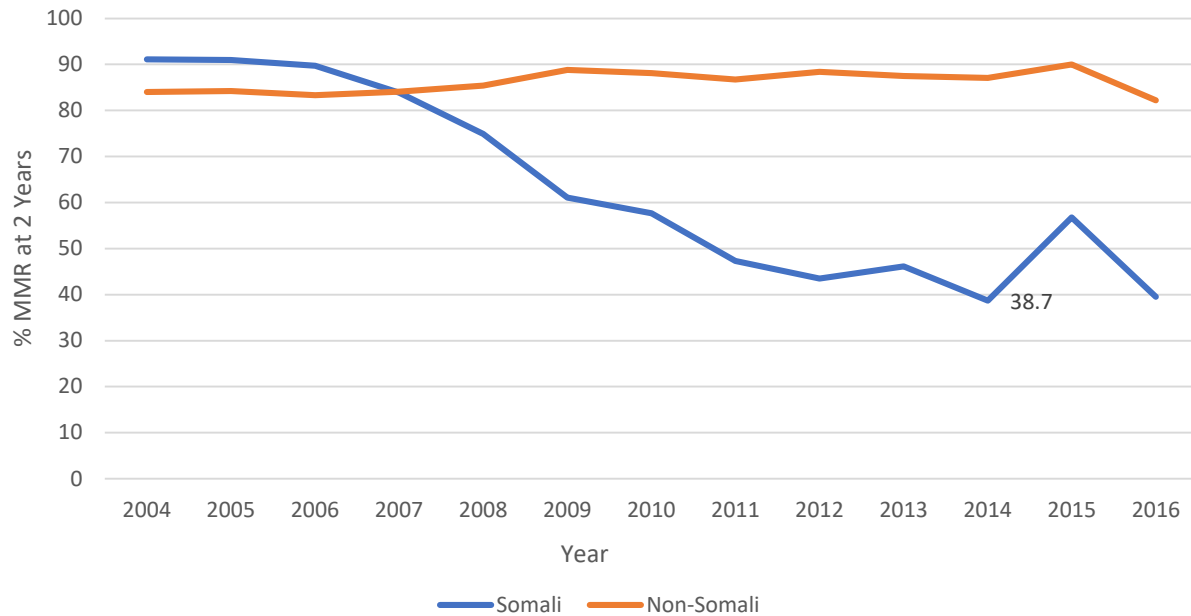


## **Wakefield study linking MMR vaccine, autism uncovered as complete fraud**

Infectious Diseases in Children, February 2011

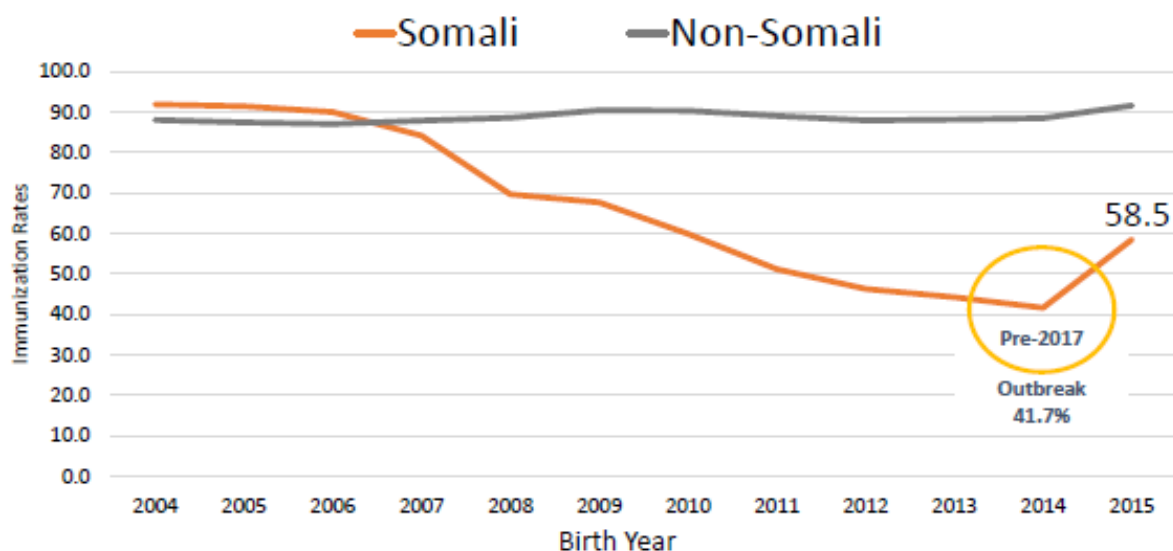
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Comparison of MMR rates at 24 months in children of  
Somali descent versus non-Somali  
Birth Years 2004 – 2016 Ramsey County





### Comparison of MMR rates at 24 months in children of Somali descent versus non Somali, Birth Years 2004-2015, Minnesota



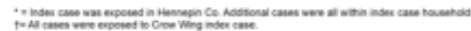
# Outbreak overview

- 79 cases
- 90% of cases unvaccinated
- 81% of cases in Somali MN Community
- Primarily affected young unvaccinated children, median age of 2 years

MMR status:	
▪ Unvaccinated:	71
▪ 1 MMR:	3
▪ 2 MMR:	3
▪ Unknown:	2
Race/Ethnicity:	
▪ Somali Minnesotan:	64
▪ White/Hispanic:	3
▪ White/NonHispanic:	11
▪ Black/NonHispanic:	1
▪ Unk/pending:	0
Age	
▪ Median	2 years
▪ Range	3 months-57 years
▪ Children (0-10 years)	73 (92% of cases)
▪ < 12 months	6
▪ 1-4 years	54
▪ 5- 10 years	13
▪ Adolescents (11-17 years)	1
▪ Adults (18+ years)	5



Location	Count	Percentage
Childcare	33	42%
Household	27	34%
Community	11	14%
School	4	5%
Healthcare	3	4%
Unknown	1	1%



\* = Index case was exposed in Hennepin Co. Additional cases were all within index case household  
† = All cases were exposed to Crow Wing index case.

- Thank you!
- Questions?

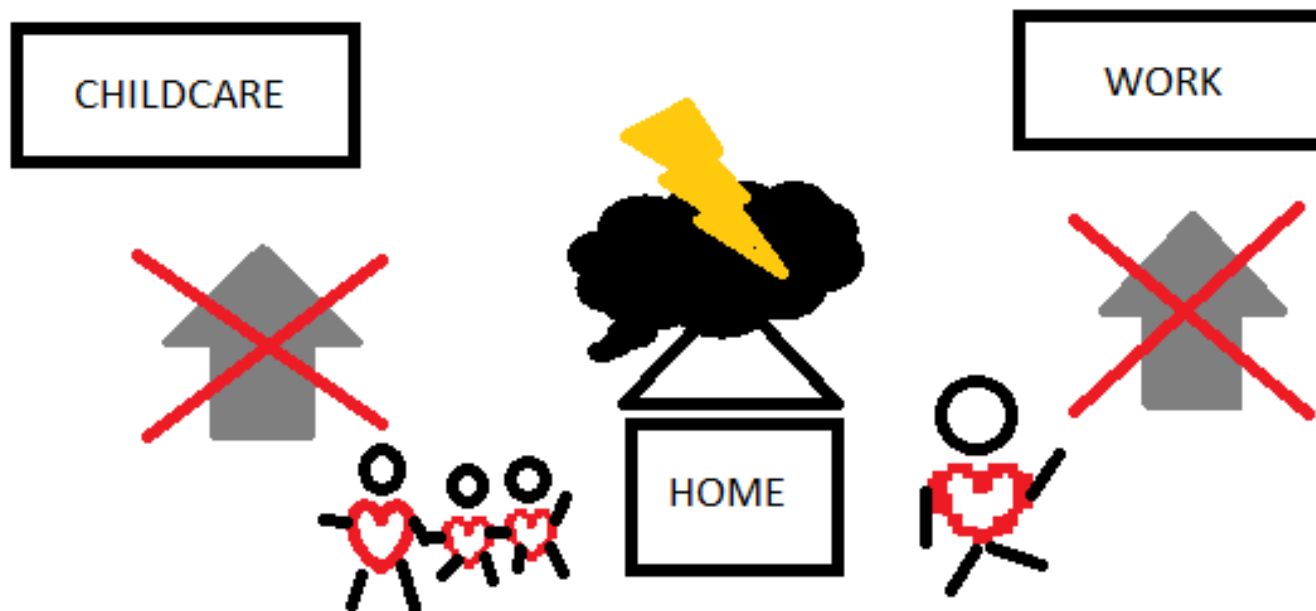
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Epidemiologist  
Health Protection  
651-266-2411  
[Marybeth.grimm@ramsey.mn.us](mailto:Marybeth.grimm@ramsey.mn.us)



# Measles Response Activities in 2018

- Case Investigation
    - 1 confirmed case (travel related)
    - No secondary cases
  - Monitoring and Essential Services
    - 1 on symptom watch
    - Three home visits, two with interpreter
    - Phone calls made and letters sent
    - Excluded from school/childcare/work
      - Calls made every 3-4 days
-

# Exclusion: a real life example



# Community Outreach

- Continued presentations
  - Partnered with Child & Teen Check Up staff to speak with parents in Adult ESL classes
  - Iftar at Al-Ihsan Islamic Center and Highwood Hills Elementary School
  - Partnered with SPPS and Health Start School-Based Clinics
- Continued Distribution of printed materials
  - WIC clinics, apartment complexes, mosques, shopping centers
  - Community celebrations





## Lessons learned (again)

- Staff language/cultural capacity needs to be strengthened
  - Working across divisions within Public Health and across County departments is critical
  - Knowing what resources are available for emergency assistance is crucial
  - Need a plan for supplemental care for children who are excluded
  - Sustaining community engagement activities to strengthen understanding and trust between Ramsey county residents and Public Health will bolster collaboration and investment in protecting the health of all residents
-