



Anencephaly Investigation

Central Washington, 2010-2016

Advisory Committee Meeting
February 11, 2016

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PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER COMMUNITY



Zika Virus

- Zika virus has been in the news and is suspected of being associated with microcephaly in Brazil
- Microcephaly is not considered to be a neural tube defect
- Neural tube defects, including anencephaly, have not been associated with any infections that we know of.

Surveillance Update

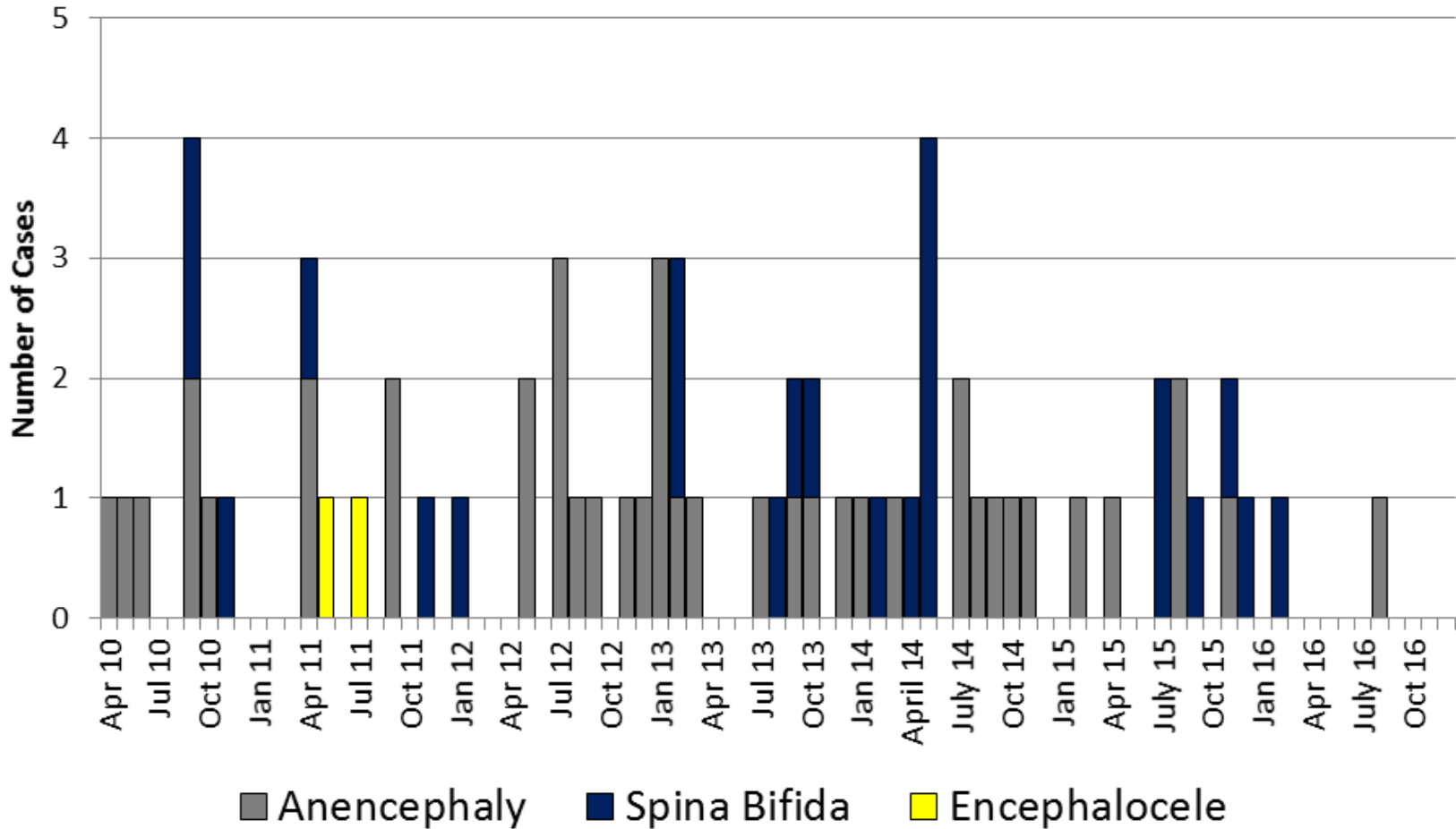
Neural Tube Defects by Year of Delivery or Estimated Year of Delivery¹

	Number	Total births	Rate per 10,000 births	95% CI
All Neural Tube Defects				
2010	9	8565	10.5	(4.8, 19.9)
2011	8	8528	9.4	(4.0, 18.5)
2012	10	8352	12.0	(5.7, 22.0)
2013	14	8084	17.3	(9.5, 29.1)
2014	14	8432	16.6	(9.1, 27.9)
2015	10	8311	12.0	(5.8, 22.1)
2016	2	na		
Total to date ²	67	na		
Anencephaly				
2010	6	8565	7.0	(2.6, 15.2)
2011	4	8528	4.7	(1.3, 12.0)
2012	9	8352	10.8	(4.9, 20.5)
2013	9	8084	11.1	(5.1, 21.1)
2014	8	8432	9.5	(4.1, 18.7)
2015	5	8311	6.0	(2.0, 14.0)
2016	1	na		
Total to date ²	42	na		

¹Estimated year of delivery is used for cases terminated or delivered before 37 weeks gestation.

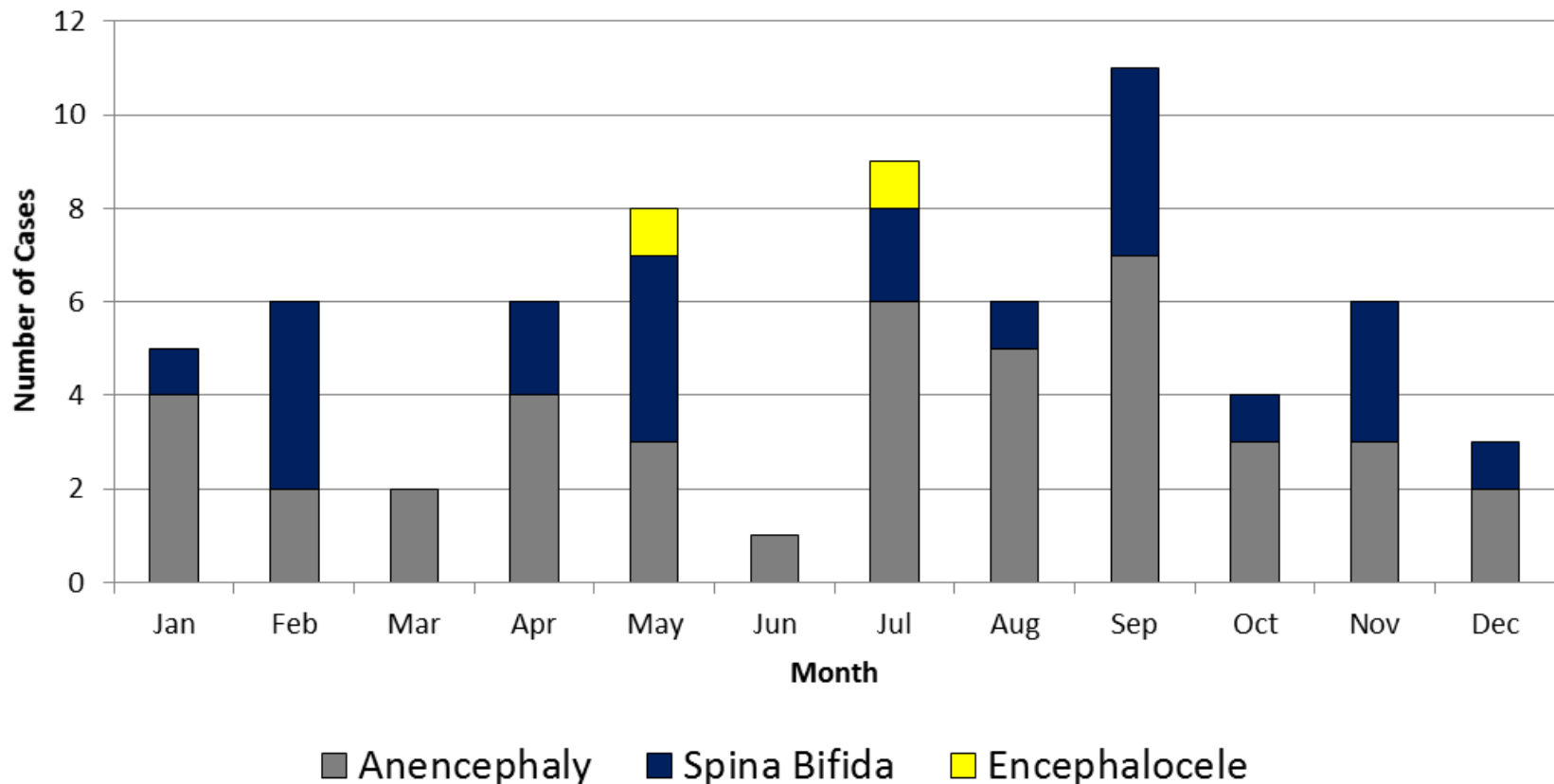
²Total to date reflects cases confirmed by January 19, 2016 with a delivery or estimated date of delivery in 2010-2016.

Neural Tube Defects by Month of Estimated Delivery Date¹



¹Estimated delivery date uses delivery date for gestational age ≥ 37 weeks and estimated delivery date for gestational age <37 weeks at delivery. Cases were confirmed through January 19, 2016.

Neural Tube Defects by Month of Estimated Delivery Date 2010-2016 Combined¹



¹Estimated delivery date uses delivery date for gestational age ≥ 37 weeks and estimated delivery date for gestational age <37 weeks at delivery. Cases were confirmed through January 19, 2016.

Neural Tube Defects by Race Ethnicity¹

	Total Number ¹	Number 2012-2015	Births 2012-2015	Rate per 10,000 births	95% CI
All Neural Tube Defects					
Hispanic	35	24	17,085	14.0	(9.0, 20.9)
Non-Hispanic White	28	23	13,383	17.2	(10.9, 25.8)
Other	1	0	2,711	0.0	-
Anencephaly					
Hispanic	25	19	17,085	11.1	(6.7, 17.4)
Non-Hispanic White	13	11	13,383	8.2	(4.1, 14.7)
Other	1	0	2,711	0.0	-

¹Total number reflects cases confirmed by January 19, 2016 with a delivery or estimated date of delivery in 2010-2016. Three anencephaly cases had unknown race/ethnicity.

²Births in 2015 are from a preliminary file.

Washington Rates of Anencephaly and Spina Bifida^{1,2,3}

Vital Statistics and Hospitalization data (unconfirmed cases)

	Number 2005-2015	Births 2005-2015	Rate per 10,000 births	95% CI
All Neural Tube Defects				
3 County Area	90	91,592	9.8	(7.9, 12.1)
Rest of Washington	475	863,536	5.5	(5.0, 6.0)
Total Washington	565	955,128	5.9	(5.4, 6.4)
Anencephaly				
3 County Area	53	91,592	5.8	(4.3, 7.6)
Rest of Washington	206	863,536	2.4	(2.1, 2.7)
Total Washington	259	955,128	2.7	(2.4, 3.1)

¹Based on ascertainment from birth certificates, fetal death certificates and hospital discharge data, 2005-2013.

²Based on ascertainment from birth certificates and fetal death certificates only, 2014-2015.

³Limited to preliminary data file through mid December 2015.

Interview Update

Interview Results

	Mothers of Infants with any NTD	Mothers of infants with anencephaly
Total Number ¹	64	41
Number Interviewed	17 (27% of Total)	12(29% of Total)
Mean Age at Conception	29 years	28 years
Median Age	30 years	28 years
Hispanic	7 (41%)	6 (50%)
Non-Hispanic White	10 (59%)	6 (50%)
English Spoken at Home	12 (71%)	8 (67%)
Spanish Spoken at Home	5 (29%)	4 (33%)
US Born	13 (76%)	9 (75%)
Mexico Born	4 (24%)	3 (25%)
Less than HS	5 (29%)	4 (33%)
HS degree	1 (6%)	1 (8%)
More than HS	11 (65%)	7 (58%)
Prior pregnancy	16 (94%)	12 (100%)
Prior NTD pregnancy	3 (18%)	2 (17%)
Overweight (BMI 25-29.9)	3 (20%)	2 (20%)
Obese (BMI ≥ 30)	5 (33%)	2 (20%)

¹confirmed by October 10, 2015

Medications Reported¹

Acetaminophen²

Ibuprofen⁴

Prozac

Zoloft

Acyclovir

Asthma Inhaler³

Rx for Hidradenitis

Depakene⁴

Doxycycline

Femara

General Anesthesia

IUD

Acid Reflux medication

Metformin HCL

Anti-Nausea

(prescription)³

Progesterone

Sleep aid

Synthroid³

XL3

¹Medications reported used month before and after conception

²Associated with decreased risk in NBDPS

³No association with NTDs in NBDPS

⁴Reported increased risk in NTDs in NBDPS

Folic Acid Supplement Use

	Mothers of Infants with any NTD	Mothers of infants with anencephaly
Total Number ¹	64	41
Number Interviewed	17 (27% of Total)	12(29% of Total)
Prenatal Vitamin Use at some point in pregnancy	17 (100%)	12 (100%)
Prenatal Vitamin Use month before pregnancy through first month of pregnancy	10 (59%)	8 (75%)
Folic Acid as single vitamin at some point in pregnancy	7 (41%)	5 (42%)
Folic Acid as single vitamin in month before through first month of pregnancy	3 (18%)	3 (25%)

All women who reported folic acid use as single vitamin in month before through first month of pregnancy also took prenatal vitamins at this time.

Prevalence of Any Strong Risk Factor

- Explored women with any risk factor:
 - Previous NTD-affected pregnancy
 - Obesity
 - Pre-existing Diabetes
 - Use of anti-seizure medication
 - Hispanic race/ethnicity
- 12 NTD mothers (71%) and 9 Anencephaly mothers (67%) have at least one of these factors
- 7 NTD mothers (41%) and 4 Anencephaly mothers (41%) have at least one factor that is not Hispanic ethnicity

Interview Summary to Date

- Interviewed women are similar to all cases with respect to age, and slightly older than all birth mothers
- Interviewed women were less likely to be Hispanic than all cases
- All interviewed women had prior pregnancies, including a variety of pregnancy outcomes
- Interviewed women were more likely to report prenatal and folic acid vitamin use than new mothers in the three county area
- Interviewed women reported a high recurrence rate of NTDs
- Many interviewed women experienced risk factors for NTDs

Prevention Update

Folic Acid Outreach Plan

Communication channels

Statewide Awareness Campaign

- Paid and unpaid media
- Web and social media
- Educational materials

Community Outreach

- Web and social media
- Educational material distribution
- Vitamin distribution
- Community resource referrals

Health Care Intervention

- In-person counseling
- Educational material distribution
- Vitamin distribution
- Community resource referrals

Statewide

- State agencies and commissions
- Partner organizations
- Statewide media

Community

Benton, Franklin, Yakima counties

- Local health jurisdictions
- Community organizations
- Local media
- Faith based organizations
- Supermarkets

Health Care

Benton, Franklin, Yakima counties

- Health care providers
- Hospitals
- Pharmacies
- Community health workers
- Family planning clinics
- WIC clinics

Messages to all women

- Folic acid recommendations
- Change to vitamin coverage

Messages to affected families

- Condolence and appreciation
- Investigation updates
- Risk of NTD reoccurrence
- Community resource referrals

Statewide

Past

- Monthly Anencephaly Prevention Coordination Call
- Safe Deliveries Roadmap Initiative
- Folic acid education through WIC nutrition program
- Anencephaly investigation web page

Current

- Spanish webpages with folic acid information
- Outreach to Medicaid members about Apple Health prenatal vitamin coverage

Community

Past

- Community listening sessions (2)
- Public Service Announcements (45 stations)
- Paid radio spots (2759), radio novella spots (817)
- Radio shows (3)
- NTD and folic acid materials to community partners, community and technical colleges, hair and nail salons
- Health fairs (2)

Current

- Vitamin distribution through clinics and public health programs
 - Benton Franklin Health District distributed 400 bottles in December

Health Care

Past

- Health alerts to all providers (2)
- Yakima Health Bulletin articles (3)
- Presentations to health committees and hospitals (4)
- Dissemination of Folic Acid Provider resource sheet at medical conferences (4)

Current

- Outreach to Medicaid providers about Apple Health prenatal vitamin coverage

Folic Acid Fortification of Corn Masa Flour

- US FDA has extended its review of the petition asking it to allow voluntary fortification of corn masa with folic acid
- In April, US FDA must either act on the petition or request additional information
- DOH and HCA jointly sent letter to FDA requesting approval of fortification absent scientific concerns about safety
- Congresswoman Jaime Herrera-Beutler is circulating a congressional letter to the FDA with the same message

What's Next

- Complete analysis of interview study data
- Continue surveillance in three county area
- Continue folic acid outreach
- Continue work with Health Care Authority on communication regarding prenatal vitamin coverage
- Continue work with local health and other partners
- Continue work on ensuring stable state and local public health funding

Questions/Comments?

To provide comments or questions,
please contact:

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