

# Birth Defects Team



Michigan Birth Defects Registry  
(MBDR) - Vital Records and  
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# BIRTH DEFECT

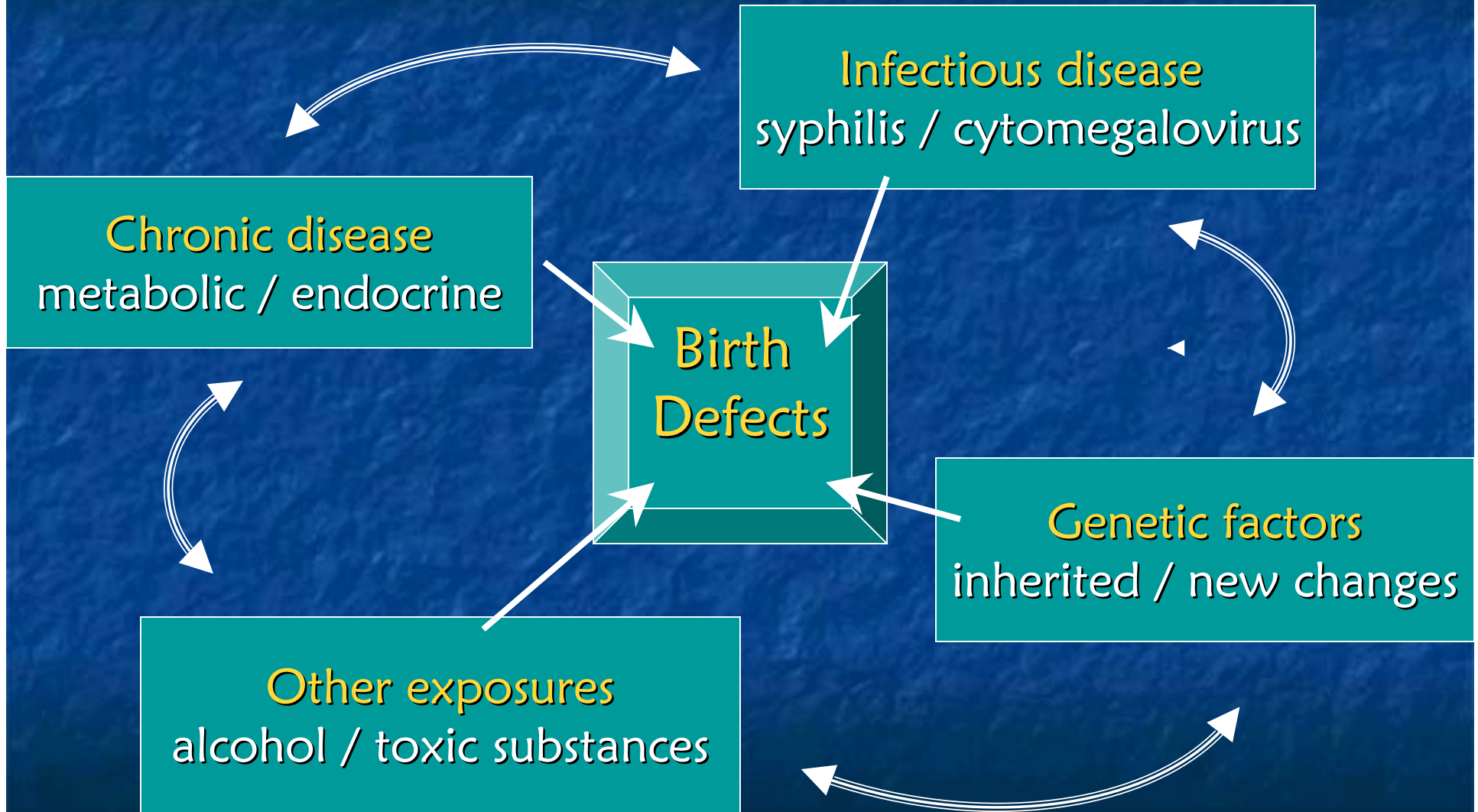
"Birth defect, congenital malformation, and congenital anomaly are synonymous terms used to describe structural, behavioral, functional, and metabolic disorders present at birth."

*Langman's Medical Embryology, ed. 9*

"...an abnormality of the body's structure or inherent function present at birth, whether the abnormality is detected at the time of delivery or becomes apparent at a later date."

*MBDR Reporting Manual*

# Genomics of Birth Defects





# Birth Defects Reporting

Supplemental  
Sources:

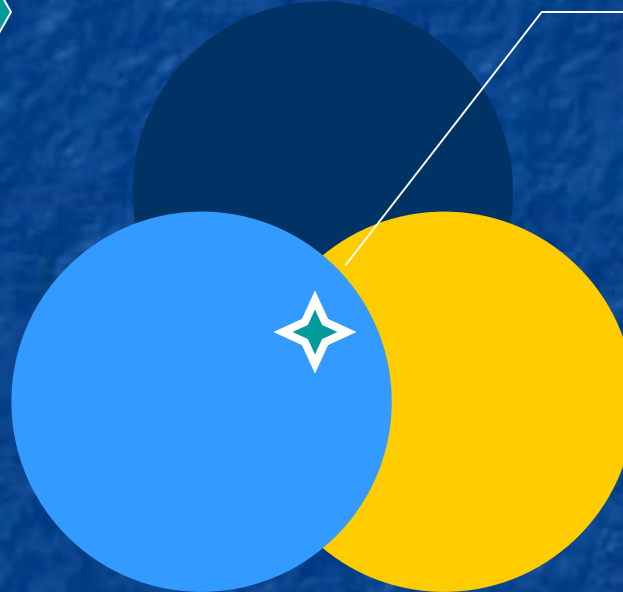
- NBS
- EHDI
- CSHCS
- FIMR
- Pediatric Genetic Clinics

Hospital/Lab Report  
ICD-9-CM

Birth  
Defect  
Case

Birth Record

Death Record



# Chondrodystrophy – 756.4

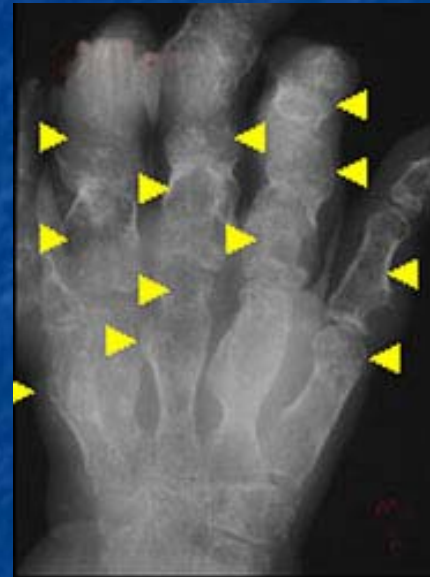
- 1/15,000-1/40,000
- Disproportionate short stature, symmetrical
- Autosomal dominant, often new mutation



## Achondroplasia

Medical Genetics, 2<sup>nd</sup> Edition. Downloaded October 22, 2007 from the worldwide web.

**MBDR has 152 cases, 1992-2003, for a birth prevalence rate of ~1/10,000.**

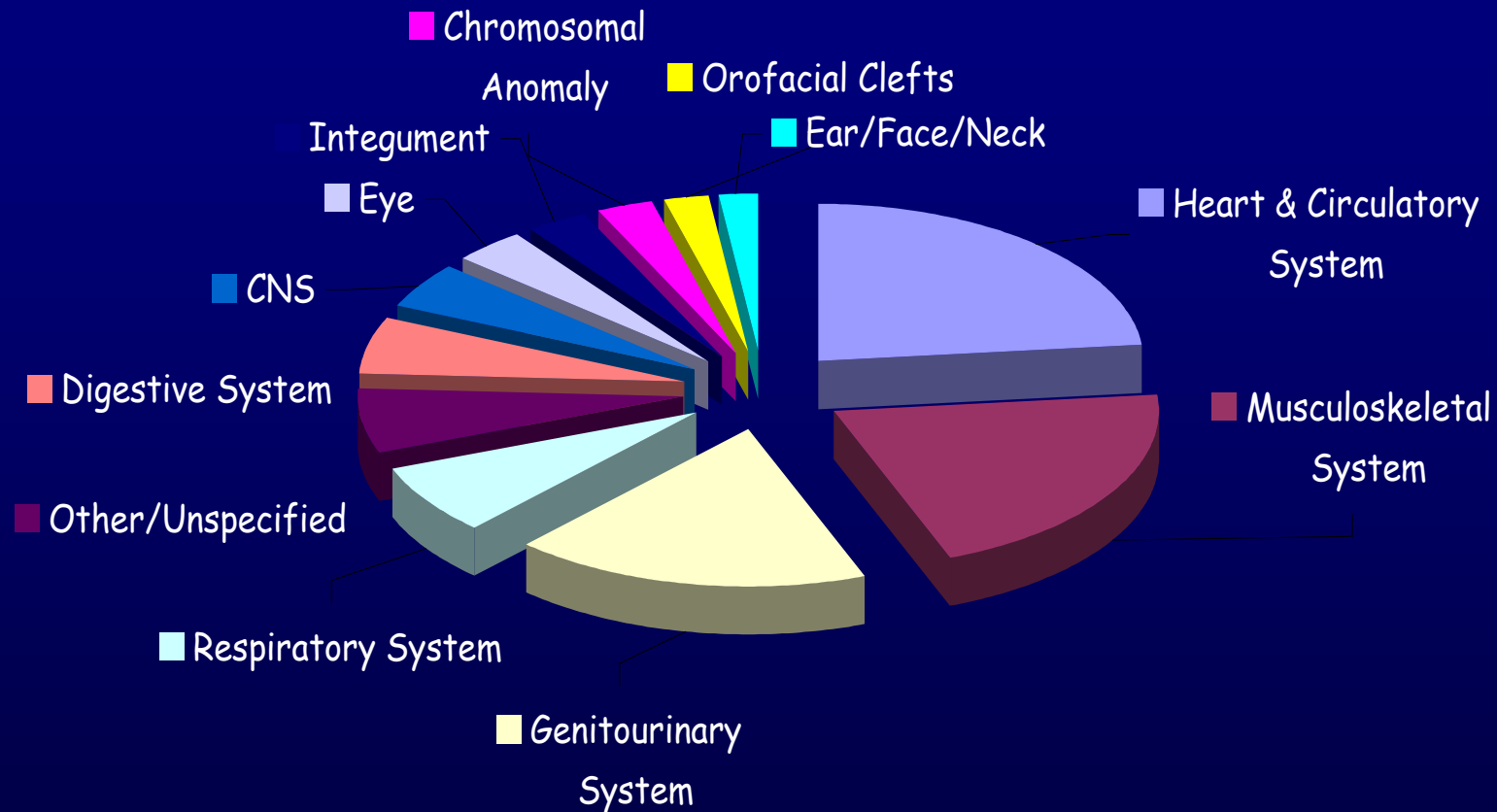


- 1/100,000
- Multiple enchondromas near growth plates, assymetrical
- Usually sporadic

## Ollier disease

Universiteit Leiden, Medical Research Center  
Downloaded October 22, 2007 from the worldwide web.

# Major Classes of Anomalies - 2003



**1 in 33** babies is born with a birth defect

About **10,000 Michigan** children are born with birth defects each year per MBDR reporting

Orofacial Clefts (2%) – 1/600

NTDs (.7%) – 1/2000



# Birth Defects Reporting - 2003

NTDs	Prenatal	Postnatal	
	Cases (*)	MBDR	MBDR+
■ Anencephaly	10 (5)	18, 1.4	23, 1.8
■ Spina Bifida	10 (3)	48, 3.7	51, 3.9
■ Encephalocele	5 (4)	13, 1.0	17, 1.3
<b>Chromosomal Disorders</b>			
■ Trisomy 21	25 (18)	143, 11.0	161, 12.4
■ Trisomies 13/18	31 (22)	41, 3.2	63, 4.9
■ Other	31 (14)	115, 8.9	129, 10.0

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\* no. known miscarried/stillborn/VToP for 7 MI facilities

# Key Prevention Activities

## Promote healthy behaviors for women before and during pregnancy

- January is Birth Defects Prevention Month
- Also Folic Acid Awareness Week

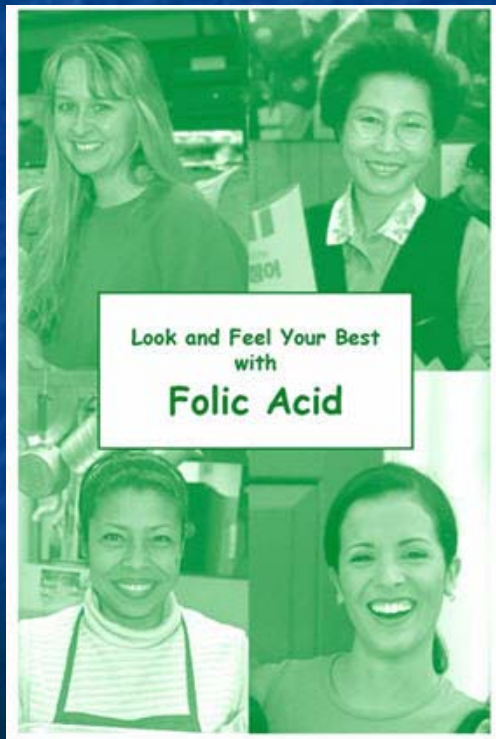
## Collaborate to develop and deliver primary prevention messages and strategies

- Listserv: [DCH-BDPM@LISTSERV.MICHIGAN.GOV](mailto:DCH-BDPM@LISTSERV.MICHIGAN.GOV)
- Multi-vitamin distribution to low income women in high risk regions: expanded to 40 counties in 2007
- Family history initiative for second degree relatives of children with NTD



# Folic Acid Outreach and Multivitamin Distribution in Selected Michigan Counties

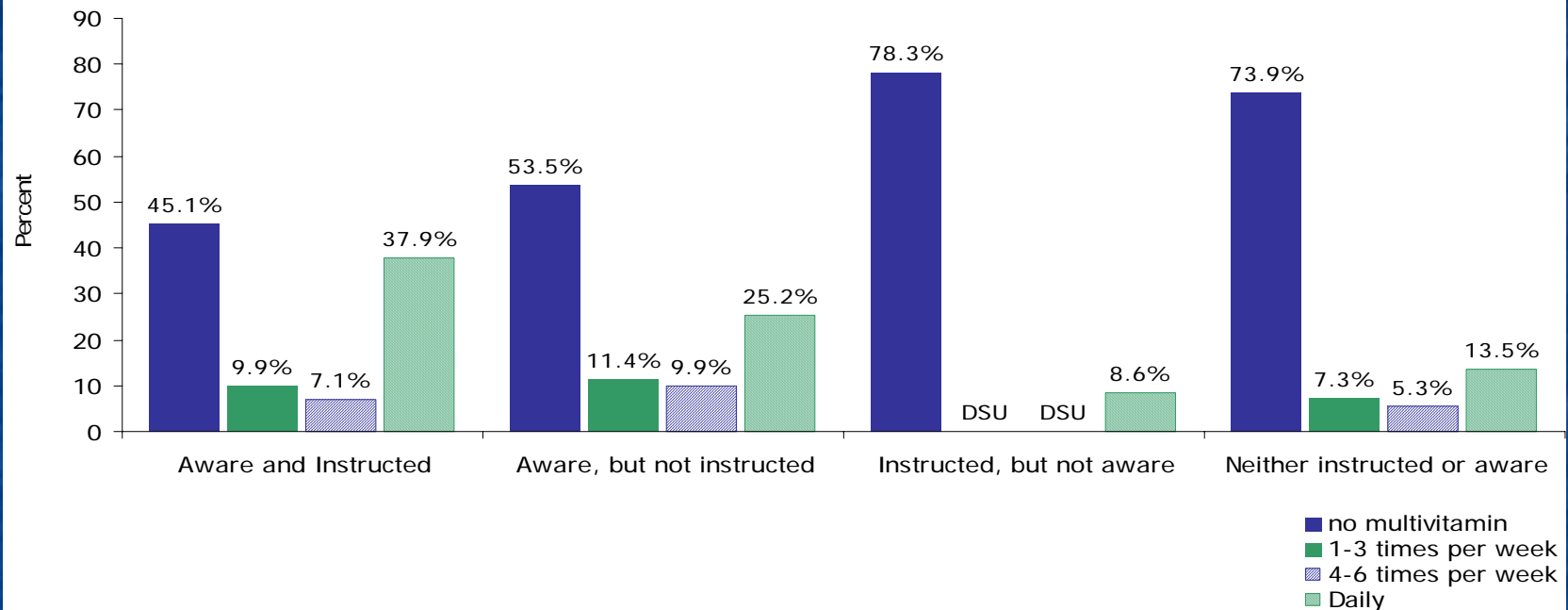
Funded 2005-2007 by March of Dimes Community Awards Grant



- ◆ To distribute 30,000 bottles of free multivitamins to low-income women of childbearing age
- ◆ To instill a healthy habit that will continue after project completion
- ◆ To reinforce the critical role of the health professional in the delivery of prevention messages

# Michigan PRAMS 2003

Consumption of a multivitamin in the month before pregnancy by awareness of / instruction about folic acid



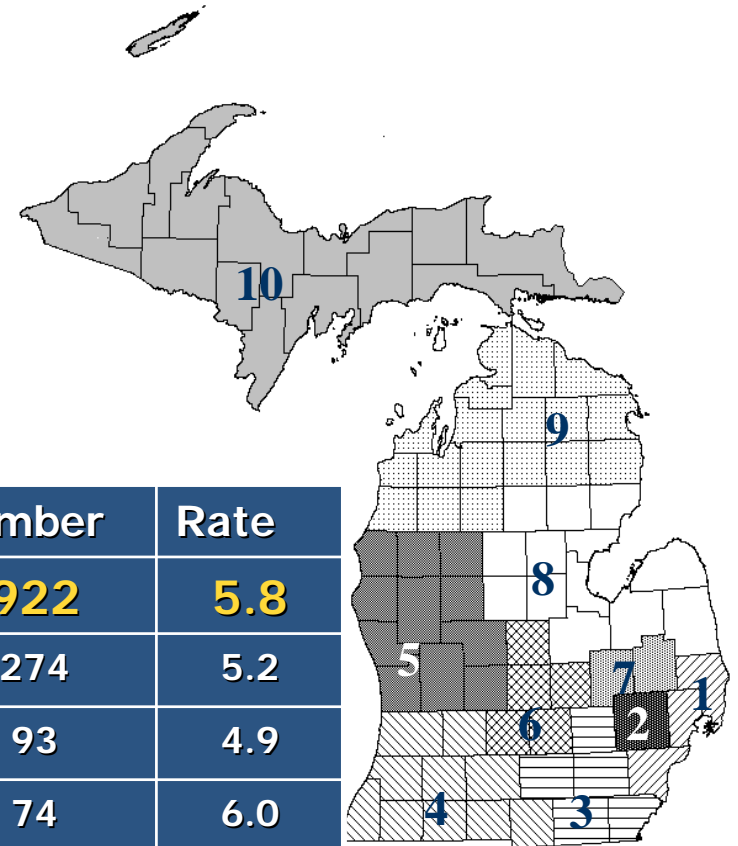
Patel R, Bouraoui Y, Grigorescu V, McGrath-Miller. Michigan PRAMS Report 2003: Michigan Department of Community Health. Family and Community Health, July 2006.

- ◆ Community-based programs may be most effective in reaching these at-risk women with low awareness
- ◆ These women may have limited access to information through computers, pamphlets or other specific forms of media

# Michigan Plan

- ◆ Target outreach
- ◆ Educate women
- ◆ Provide *free* vitamins
- ◆ Monitor distribution
- ◆ Follow-up on use

Region	Number	Rate
<b>State</b>	<b>922</b>	<b>5.8</b>
1	274	5.2
2	93	4.9
3	74	6.0
<b>4</b>	<b>92</b>	<b>6.1</b>
<b>5</b>	<b>153</b>	<b>6.8</b>
6	49	5.6
7	48	5.3
<b>8</b>	<b>74</b>	<b>6.7</b>
<b>9</b>	<b>45</b>	<b>8.0</b>
10	20	5.5



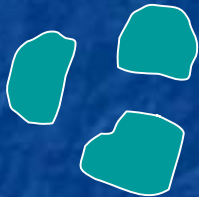
## NTDs in Michigan

Number and rate per 10,000 live births, MBDR 1992-2003

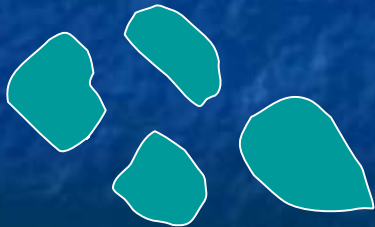


# Family History of NTD and Folic Acid Study

1. MBDR to find index NTD cases (23)



2. Contact index families (7) to identify eligible relatives (22)



3. Survey female relatives (4)



*Can we use family history to target folic acid outreach?*

4. Folic acid outreach – information mailed to female relatives (3)



5. Follow up survey of female relatives

*Not  
everything  
that can be  
counted  
counts, and  
not everything  
that counts  
can be  
counted.*

*Albert Einstein*

