



# Folic Acid Outreach and Multivitamin Distribution

---

In Selected Michigan Counties  
at Risk for Neural Tube Defects

Supported by March of Dimes Michigan  
Chapter Community Awards Grant

MDCH Birth Defects Program

# Folic Acid Outreach and Multivitamin Distribution

---

## ■ Purpose:

Increase awareness and consumption of folic acid among women of childbearing age

## ■ Objectives:

- Provide standardized in-service training to WIC and Planned Parenthood clinic staff
  - Distribute 3-month supply of multivitamins to non-pregnant women
-

# Project Protocol

---

Michigan Counties selected based on  
MBDR Neural Tube Defect Rates

2005

Mecosta  
Jackson  
Kent

2006

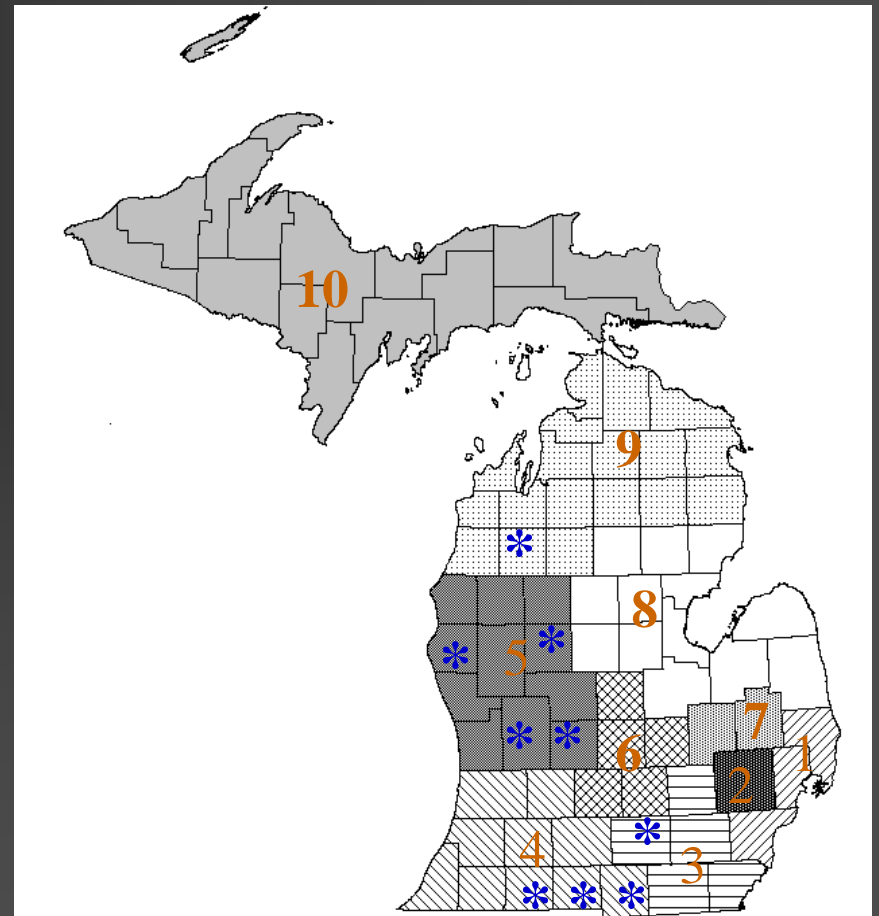
Ionia  
Ottawa  
Hillsdale  
Branch  
Saint Joseph

Wexford  
Oceana  
Mecosta  
Jackson  
Kent

---

# Mapping NTDs by Michigan Region (1992 – 2003)

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



# Project Protocol

---

## Target Population

- Non-pregnant, over 18 years of age
  - Childbearing age, capable of becoming pregnant
  - Client receiving services at distribution clinic sites
-

# Project Protocol

---

## Staff training

Mid-August – September 2005

## Vitamin distribution

September 2005 – December 2005

## Telephone survey

December 2005 – March 2006

---

# Project Protocol

---

## Consent form

Authorization to Release Information

English and Spanish

## Vitamin Information Sheet

English and Spanish

## Folic Acid education pamphlets

English and Spanish

---

# Project Protocol

---

## Telephone Survey

- Administered by Nurse Educator
  - Random sampling of vitamin recipients
  - Questions:
    - Knowledge of benefits of preconception folic acid
    - Frequency of vitamin usage
    - Identification of barriers to taking a daily multivitamin
-



# Results

---

## Demographics

- 80% Caucasian
  - 12% African-American
  - 5% Hispanic
  - 1.5% Asian
  - 1% Native American
-

# Results

---

## Age

- 67% 18-24 years of age
  - 27% 25-34 years of age
  - 10% over 34 years of age
  - 1% below 18 years of age
-

# Results

---

- 35% taking multivitamins before “free” bottle was given
  - Usage increased from 35% to 82% following receipt of “free” vitamins
  - 18% of women reported “never” taking vitamins
  - Almost half (47%) reported taking vitamins every day
-

# Results

---

- Nearly two-thirds (64%) correctly identified folic acid as preventing NTDs
    - 44% reported taking multivitamins for other reasons than to prevent birth defects (i.e., good for health)*
  - Majority (88%) remembered receiving written educational materials
  - About half (48%) reported taking multivitamins everyday
  - Overall, 61% reported taking multivitamins regularly
  - 21% said they didn't take vitamins because they forgot
-

# Results

---

## Multivitamin use by age group

- 25-34 years 72%
- 18-24 years 55%

## Multivitamin use by ethnicity

- African-American 71%
  - Caucasian 59%
-

# Results

---

- 68% of women interviewed finished their first bottle
  - Of these, 59% said they were *likely* or *very likely* to buy another bottle and continue taking them
-

# Conclusions

---

- Providing multivitamins as part of routine healthcare for women of childbearing age is an effective method for increasing vitamin usage in this high-risk population.
  - One-on-one education given by trained health care providers is an effective way to deliver the folic acid birth defects prevention message.
-

# Public Health Implication

---

***Free multivitamin distribution may be one important method of reducing the rate of neural tube defects and other folic acid-preventable birth defects in low-income Michigan women.***

---



# Folic Acid Survey Comparisons

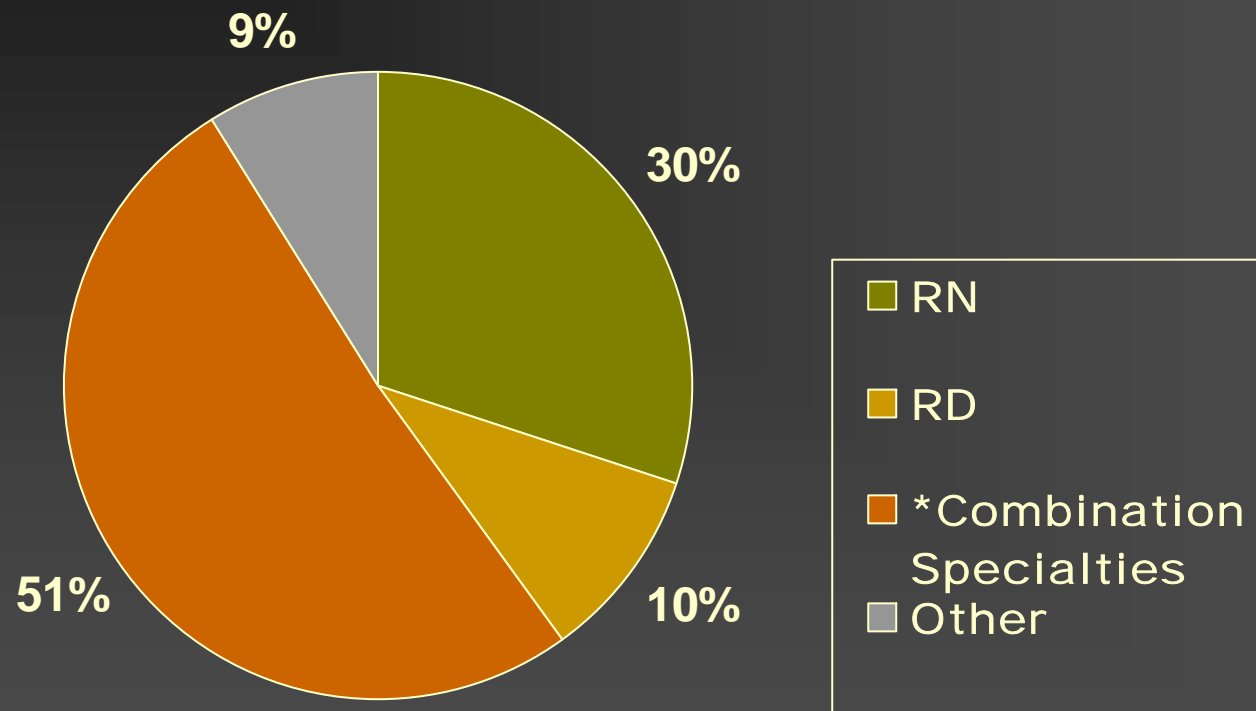
Variable	MDCH/MOD (2005)	NC/MOD (2005)	MOD Gallup Poll (2005)	PRAMS (2002)	MI Nutrition & Physical Activity (2002)
n	199	322	2647	2000	3518
Awareness	88%	-	84%	60.5%	65%
Take Vitamins	35%	25%	33%	30%	-
Increase Usage	47% (35%-82%)	57% (25%-82%)	-	-	-
Knowledge folic acid prevents birth defects	64%	-	25%	-	-
Take Vitamins Every Day (5-7 days/week)	48% 61%	- 62%	33%	30%	-



# Staff Training Pre/Posttest Results

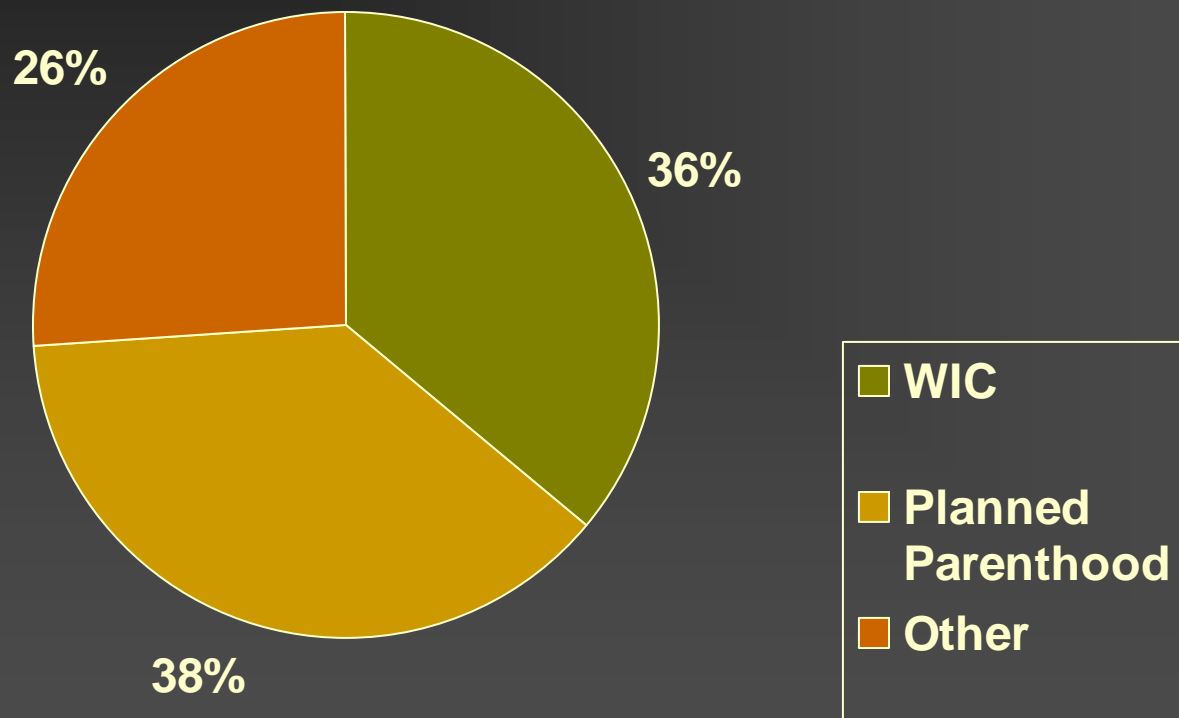


# Health Providers



\*Social Workers, Nurse Practitioners, Medical Assistants

# Agency Staff



# Staff

---

- Mean years of practice = 8.8 years
  - 87% provide advice/counseling to women of childbearing age
-

# The Folic Acid Pre and Posttest

---

- Twenty two questions
    - 12 multiple choice
    - 8 true / false
    - 2 fill in the blank
  - Three practice related questions
-

# Content Areas Addressed:

---

- Knowledge of folic acid as a nutrient
  - Description of neural tube defect
  - Critical timing of folic acid consumption to prevent NTDs
  - Population to target with folic acid message
  - Racial / ethnic group at highest risk
-

# Content (Cont'd.)

---

- Bioavailability of synthetic vs. natural food folate
  - Upper tolerable limit of folic acid intake
  - Dosage recommendations for reducing NTD occurrence and recurrence
  - Additional health benefits
-



# Content (Cont'd.)

---

- Folate food sources
  - Vitamin B12 interactions
  - Folic acid content in multivitamins
  - Medications that interfere with folic acid absorption
-

# Pretest Results

---

- Scored < 70%
    - 10 out of 14 questions
-

# Posttest Results

---

- 88% demonstrated increased knowledge
    - 14 out of 16 questions
-

# Survey Results

Percent Increases between Pre/Posttest	
Racial / ethnic group	147%
Meds. that interfere with absorption	143%
Recommend for recurrence prevention	136%
Upper tolerable limit of folic acid	109%
Health benefits	81%
Level of folic acid fortification in food	75%
Folic acid / vitamin B12 interaction	57%
Health benefits of folic acid / NTDs	48%

# Conclusions


---

- Overall gaps in knowledge / awareness of folic acid for the prevention of NTDs by health care providers
  - Useful tool in raising knowledge and awareness
-

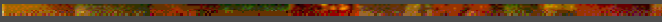
# Recommendation

---

- Need for continuing education for the health care provider in this area of preconception care
-



**Survey of Dietetic and Nursing  
Professionals in Michigan  
Reveals a Need for Continuing  
Education on the Role of  
Folic Acid in Preventing  
Neural Tube Defects**



# Study Purpose

---

- To assess and compare dietetic and nursing professionals' folic acid knowledge, awareness, and practice related to preventing neural tube defects in Michigan
-



# Survey Respondents

---

- Nutrition Professionals n= 331
  - Nursing Professionals n= 115
  - Attending professional conferences and meetings:
    - MDA, WIC, HMHB
-

# Survey Results

*Percent correct*

Question	Nutrition	Nurse	P-value
Folic acid/ B-12 interaction	64%	27%	< 0.01
Heart health benefit of folic acid	64%	43%	<0.01

# Survey Results

## *Percent correct*

Question	Nutrition	Nurse	P-value
Folic acid a B-vitamin	84%	61%	<0.05
Bioavailability synthetic vs. natural form FA	48%	33%	<0.05
Upper tolerable limit, folic acid	29%	15%	<0.05

# Conclusions

---

- Survey results revealed gaps in knowledge and awareness of folic acid for the prevention of NTDs for both nutrition and nursing professionals.
-

# Conclusion

---

- Health care providers play an important role in educating women about the importance of preconception folic acid.
    - **2005 MOD Gallup Poll Survey**
      - 26% said they would take a multivitamin supplement if their doctor or health care provider recommended
-



**THANK YOU!**

Nelda Mercer, MS, RD, FADA

**MDCH Birth Defects Program**

**Michigan Department of Community Health**