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

<table>
<thead>
<tr>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mecosta</td>
<td>Wexford</td>
</tr>
<tr>
<td>Jackson</td>
<td>Oceana</td>
</tr>
<tr>
<td>Kent</td>
<td>Mecosta</td>
</tr>
<tr>
<td>Ionia</td>
<td>Branch</td>
</tr>
<tr>
<td>Ottawa</td>
<td>Saint Joseph</td>
</tr>
<tr>
<td>Hillsdale</td>
<td>Kent</td>
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</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Rate</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>274</td>
<td>5.2</td>
</tr>
<tr>
<td>2</td>
<td>93</td>
<td>4.9</td>
</tr>
<tr>
<td>3</td>
<td>74</td>
<td>6.0</td>
</tr>
<tr>
<td>4</td>
<td>92</td>
<td>6.1</td>
</tr>
<tr>
<td>5</td>
<td>153</td>
<td>6.8</td>
</tr>
<tr>
<td>6</td>
<td>49</td>
<td>5.6</td>
</tr>
<tr>
<td>7</td>
<td>48</td>
<td>5.3</td>
</tr>
<tr>
<td>8</td>
<td>74</td>
<td>6.7</td>
</tr>
<tr>
<td>9</td>
<td>45</td>
<td>8.0</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>5.5</td>
</tr>
</tbody>
</table>
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.
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

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>199</td>
<td>322</td>
<td>2647</td>
<td>2000</td>
<td>3518</td>
</tr>
<tr>
<td>Awareness</td>
<td>88%</td>
<td>-</td>
<td>84%</td>
<td>60.5%</td>
<td>65%</td>
</tr>
<tr>
<td>Take Vitamins</td>
<td>35%</td>
<td>25%</td>
<td>33%</td>
<td>30%</td>
<td>-</td>
</tr>
<tr>
<td>Increase Usage</td>
<td>47% (35%-82%)</td>
<td>57% (25%-82%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Knowledge folic acid prevents birth defects</td>
<td>64%</td>
<td>-</td>
<td>25%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Take Vitamins Every Day (5-7 days/week)</td>
<td>48%</td>
<td>-</td>
<td>33%</td>
<td>30%</td>
<td>-</td>
</tr>
</tbody>
</table>
Staff Training
Pre/Posttest Results
Health Providers

- RN: 30%
- RD: 10%
- *Combination Specialties: 51%
- Other: 9%

*Social Workers, Nurse Practitioners, Medical Assistants
Agency Staff

- WIC: 36%
- Planned Parenthood: 38%
- Other: 26%
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
<table>
<thead>
<tr>
<th>Percent Increases between Pre/Posttest</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Racial / ethnic group</td>
<td>147%</td>
</tr>
<tr>
<td>Meds. that interfere with absorption</td>
<td>143%</td>
</tr>
<tr>
<td>Recommend for recurrence prevention</td>
<td>136%</td>
</tr>
<tr>
<td>Upper tolerable limit of folic acid</td>
<td>109%</td>
</tr>
<tr>
<td>Health benefits</td>
<td>81%</td>
</tr>
<tr>
<td>Level of folic acid fortification in food</td>
<td>75%</td>
</tr>
<tr>
<td>Folic acid / vitamin B12 interaction</td>
<td>57%</td>
</tr>
<tr>
<td>Health benefits of folic acid / NTDs</td>
<td>48%</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Question</th>
<th>Nutrition</th>
<th>Nurse</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folic acid/ B-12 interaction</td>
<td>64%</td>
<td>27%</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Heart health benefit of folic acid</td>
<td>64%</td>
<td>43%</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Question</td>
<td>Nutrition</td>
<td>Nurse</td>
<td>P-value</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------</td>
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<td>---------</td>
</tr>
<tr>
<td>Folic acid a B-vitamin</td>
<td>84%</td>
<td>61%</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Bioavailability synthetic vs. natural form FA</td>
<td>48%</td>
<td>33%</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Upper tolerable limit, folic acid</td>
<td>29%</td>
<td>15%</td>
<td>&lt;0.05</td>
</tr>
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</table>
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