Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Folic acid	Folic acid campaign and evaluation - southwestern, VA, 1997-1999 (MMWR, 1999)	22,500 women of childbearing age in 4 county area of southwestern VA	Year long community information campaign with TV and radio PSAs, news conference, newspaper ads, & billboards. Focus groups & readability tests used to develop print materials. Local grocery store chain helped promote use of folate-rich foods & multivitamins; volunteers distributed green ribbons to promote FA awareness; folic acid teaching packet developed for grades 5-12 and college-level nursing programs	Pre- and post-campaign random sample telephone surveys to assess FA awareness and knowledge. Included women 18-45 years of age – 412 pre-campaign, 419 post-campaign year 1; 278 post-campaign year 2	NS	Awareness of benefits of FA increased significantly in year 1 and year 2 compared to pre-campaign. TV and health-care providers cited as leading sources of information.	Survey was relatively easy to implement and costs were low
All women	Folic acid	Folic acid awareness – grocery placement efforts (NBDPN annual meeting poster, 2006)	Women at grocery stores in Florida	Materials with FA information were developed and placed in a Publix magazine for new parents. Information on the importance of taking FA were included on Publix coupons.	Spina Bifida Association of America's National Survey of SB Community examined awareness among women at increased risk for NTDs before (N=301) and after (N=221) program	NS	Folic acid consumption remained the same.	Concerted efforts on one regional grocer chain are not effective without substantial advertising budget.
Hispanic women (latina, primarily Mexican descent)	Folic acid	Folic acid and the prevention of NTDs: a survey of awareness among Latina women of childbearing age residing in Southeast Michigan (Kannan S, et al., 2007)	Latina women (primarily Mexican descent) in southeast Michigan	Educational materials (recipe card, supermarket helper, posters, folic acid curriculum for community organizations, other MOD materials) were used in 20 FA education events in Detroit metro area supermarkets and community organizations offering WIC or other services to women of childbearing age during May-September 2003	A 12-item survey adapted from the MOD was given to 160 latina women 19-50 years of age to self-administer and measured knowledge and awareness of FA, recommended timing of intake, etc. After being given FA messages, women's intent to modify their FA intake was assessed.	NS	71% had heard of FA, 74% knew it prevented BDs, 55% knew critical time to take FA. After participating in events, 85% reported planning to eat more folate and/or FA-rich foods.	Exposure to in-store sensory component of food-tasting opportunities may have contributed to high rates of behavioral intention in these women.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic acid campaign and evaluation - southwestern, VA, 1997-1999 (MMWR, 1999)	9	X	X	X			X; local grocery chain promotion - food labeling and educational material distribution	X	X	X	
Folic acid awareness – grocery placement efforts (NBDPN annual meeting poster, 2006)	2			X							
Folic acid and the prevention of NTDs: a survey of awareness among Latina women of childbearing age residing in Southeast Michigan (Kannan S, et al., 2007)	2			X			X; education events in supermarkets and community organizations				

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Hispanic women	Folic acid	Folic acid education campaign for Hispanic women: promoting preconceptional use of folic acid among Hispanic women (NBDPN annual meeting poster 2006)	Hispanic (primarily Mexican or Mexican descent) in Florida	Folic acid education materials (photo-novella, low-literacy brochure, radio PSA, video novella) were developed based on focus group findings and distributed to health care professionals.	158 women participated in a video-novella evaluation project to assess folic acid knowledge, attitudes and behavioral intentions. Pre- and post-tests were given to women who watched the novella	NS	66% were not aware that Hispanic women had higher risk for NTD affected pregnancy. Statistically significant increases in knowledge were identifed.	The video appeared to be effective in increasing FA knowledge in this population of women, at least in the short term.
Low-income women	Folic acid	Establishing a statewide folic acid education and distribution program for low-income women (NBDPN annual meeting poster 2004)	Low-income women using county HD programs (WIC, family planning, STD clinics) in Arizona	Each client receives a risk assessment, one-on-one FA education, and a year's supply of multivitamins. Referrals are provided for women at high risk of having NTD affected pregnancy.	Client specific forms were used to gather information about multivitamin use at each visit.	$800,000 (state's Tobacco litigation settlement money)	From 2002-2004, services and vitamins were provided to over 24,000 women; 43% of which were previously unaware of the benefits of FA. Significantly more women were able to answer FA questions correctly during follow up visits than during the initial visit.	Even if funds are not available to purchase vitamins in future years, the folic acid education has been integrated into routine client interactions and will continue to teach women about FA and NTD prevention.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic acid education campaign for Hispanic women: promoting preconceptional use of folic acid among Hispanic women (NBDPN annual meeting poster 2006)	3	X	X	X							
Establishing a statewide folic acid education and distribution program for low-income women (NBDPN annual meeting poster 2004)	2				X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Hispanic women and men	Folic acid	Evaluation and changes of the folic acid messages used in Puerto Rico (NBDPN annual meeting poster 2004)	Women and men in Puerto Rico	Activities in planning stage - purpose of the evaluation was to develop new campaign strategies for promoting FA use.	Focus groups were held with 5 groups of females (15-50 years of age) and 1 group of males (19-50 years). A household survey was distributed to 625 females and 100 males and included 35 questions based on findings from focus groups. Questions included FA and vitamin awareness, knowledge and use, and eating habits.	NS	Findings from focus groups indicated that perception was that FA was for pregnant women and healthier babies. 56% believed FA was only for women and half recalled the FA campaign. After reading a new FA message, 87% felt motivated to consume FA.	A potential way to increase FA use in population is to encourage daily multivitamin consumption from an early age and to include all benefits in the educational material.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Evaluation and changes of the folic acid messages used in Puerto Rico (NBDPN annual meeting poster 2004)	0; formative research only										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women at increased risk for NTD affected pregnancy (recurrence prevention)	Folic acid	Spina bifida recurrence prevention efforts and progress (NBDPN annual meeting poster 2004)	Women at increased risk of NTD affected pregnancy and their health care providers; nationally with focus on AL, NC, and TX	Recurrence prevention campaign provides health education, media advocacy, and social marketing approaches to guide outreach to local libraries, health depts, medical societies, banks and grocery stores; also media outreach in target states and development of FA counseling tutorial.	Examined provider counseling and awareness among women at increased risk for NTDs via national survey at 2 time periods (February 2003 and August 2003)	NS	Increased rates of FA counseling, consumption, perception of FA effectiveness and awareness of how much FA to take when planning a pregnancy were noted in later time period (August) compared to earlier time period.	Sustainable awareness efforts are needed as most (~60%) of women at increased risk for NTDs are not aware of their need for prescription FA and are not counseled by a health care professional.
Women at increased risk for NTD affected pregnancy (recurrence prevention)	Folic acid	NTDs will be repeated if folic acid isn't repeated (NBDPN annual meeting poster 2007)	Women with a previous NTD-affected pregnancy in South Carolina	South Carolina Birth Defect and Surveillance and Prevention Program contacts mothers of NTD-affected offspring and seeks to enroll them in a recurrence prevention program. Mothers who are not trying to get pregnant are provided with a free daily multivitamin with 0.4 mg folic acid. Mothers actively trying to get pregnant are reimbursed for the purchase of a daily prenatal vitamin and 4.0 mg of folic acid. Mothers are contacted by phone from monthly to every six months, depending on future pregnancy plans.	416 subsequent pregnancies were followed in women with previous NTD affected pregnancy.	NS	356 pregancies occurred in mothers who consumed FA >=4 times per week; no NTDs occurred in this group. Among 60 remaining pregnancies occurring to mothers who consumed FA <4 times a week, 5% had NTDs.	NTD recurrence can be prevented by this type of program.

ntion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Spina bifida recurrence prevention efforts and progress (NBDPN annual meeting poster 2004)	At least 3; general outreach and media outreach not specified				X						
NTDs will be repeated if folic acid isn't repeated (NBDPN annual meeting poster 2007)	1					X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Folic acid	Folic Acid Outreach and Multivitamin Distribution in Selected Michigan Counties at High Risk for NTDs (NBDPN annual meeting 2007 poster abstract)	Female clients of childbearing age who visited Planned Parenthood or WIC clinics in 3 Michigan counties	Standardized training and educational materials were provided to clinic staff. Trained staff distributed a free, three-month supply of multivitamins with 400 mcg folic acid to non-pregnant female clients of childbearing age. Multivitamin recipients were counseled one-on-one and given written materials.	Clients accepting multivitamins were asked to complete an informed consent form, and were given the option to provide contact information with assent to be contacted by telephone for project evaluation. A brief (8 item) telephone survey to determine recall, frequency of vitamin usage, and identification of barriers to daily consumption was administered to a random sample of vitamin recipients.	NS	35 Dietitians, Nutritionists, Registered Nurses, Nurse Practitioners, Social Workers and Medical Assistants were trained (4 PP and 2 WIC clinics). More than 1,000 bottles of multivitamins were distributed; 70% through PP clinics.Results showed a large increase in multivitamin consumption, from 35% to 82%. Nearly half (47.7%) reported taking their multi-vitamin daily.	Client survey completion was complicated by a high rate of disconnected/ changed contact numbers. Providing multi-vitamins as part of routine healthcare for women of childbearing age appears to be an effective method for increasing folic acid consumption in this high-risk target population. One-on-one education given by a trained healthcare provider reinforces positive health behaviors.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic Acid Outreach and Multivitamin Distribution in Selected Michigan Counties at High Risk for NTDs (NBDPN annual meeting 2007 poster abstract)	5			X	X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
All women	Folic acid	Analysis of folic acid advertisement at Minnesota state fair (NBDPN annual meeting 2007 poster abstract)	All women using any of the 40 bathrooms at the Minnesota state fair	The MDH designed a poster promoting daily folic acid use at 400 mcg for all women, regardless of pregnancy status, in order to prevent neural tube defects. The 11x17-inch color poster was placed on the inside of 40 women's bathroom stall doors at the 2006 Minnesota State Fair.	To evaluate the efficacy of this media campaign, a survey instrument was created and staff from the MDH Birth Defects program and other collaborating MDH program personnel canvassed at the fair for two days. Survey answers were entered into a database and analyzed using SAS.	NS	697 women agreed to participate; 59% saw the poster and 54% read the poster. Of those who read the poster, 82% indicated that women who are not pregnant or planning to become pregnant needed folic acid and 52% noted the correct amount. Among women in their teens —40s, only 35% responded that they took a supplement every day of the week, while about half reported no supplement use.	Our folic acid poster was an economical method to reach a wide audience on a small budget. In addition, the poster was an effective means to convey key birth defect prevention concepts.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Analysis of folic acid advertisement at Minnesota state fair (NBDPN annual meeting 2007 poster abstract)	1			X							

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Health care providers	Folic acid	Regional folic acid education campaign: impact on awareness and practices of health care providers (NBDPN annual meeting 2005 poster abstract)	Health care providers in western North Carolina who received FA education inservices.	Over 145 inservices have been given to private medical practices in a 27 county region of western North Carolina since 2001 as part of the region wide education campaign.	The written survey was a modified version of the telephone survey conducted by the March of Dimes of physicians and mid-level providers in the summers of 2002 and 2003 respectively. Practices that had previously received a folic acid inservice and were OB/GYN, Family Practice or Pediatrics were selected.	NS	268 survey responses were received, representing 60 practices. 98 respondents attended a folic acid inservice in their practice setting. 88% of these attendees correctly identified 400mcg of folic acid as the daily supplementation. 61% indicated that they “always” or “usually” address folic acid with a female of reproductive age at an annual exam versus 51% of the non-attendees.	The Results indicate that the folic acid education campaign and in office education sessions have had a positive impact on knowledge and folic acid practice habits of the healthcare providers responding to this survey.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Regional folic acid education campaign: impact on awareness and practices of health care providers (NBDPN annual meeting 2005 poster abstract)	1				X						

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Hispanic women of childbearing age	Folic acid	Comparison of effectiveness of paid and unpaid media to increase FA awareness, knowledge, and consumption among Hispanic women of childbearing age (Flores A, et al., 2007)	Spanish speaking Hispanic women in selected markets in US	Voluntary PSA campaign took place in 1999-2000 using CDC print, TV and radio PSAs; paid media campaign in 2001-2002 on Spanish-speaking radio and TV stations in Miami and San Antonio. Lay community health advisors were also trained to help implement the intervention in the community.	A pretest/posttest design was used that compared intervention and comparison markets. Samples were obtained from 8 communities - 4 high PSA and 4 low PSA communities. A total of 506 Spanish-speaking Hispanic women of childbearing age were surveyed.	NS	The paid media campaign was more effective than the voluntary PSA campaign. Daily consumption levels in 2002 intervention markets were higher than in the unpaid PSA markets or the 2002 comparison markets.	TV was most frequently mentioned source of information for folic acid messages among Spanish-speaking Hispanic women 18-35 years. Paid media and organized community outreach can influence awareness, knowledge, and behavior change in the short term.
Women of childbearing age (privately insured)	Multivitamin use	Design and Evaluation of Interventions promoting periconceptional multivitamin use (Lawrence JM et al., 2003)	Female members (18-39 years) of Kaiser Health Insurance Plan in 3 areas of California during 1998-2000	Two interventions were implemented in separate MSAs. The provider education intervention used primary care providers to deliver to deliver the message to women of childbearing age. Intervention was reinforced by informational pamphlets, handouts, and posters in provider offices. Questions about MV/FA use were added to patient history forms. Second intervention was a direct mailing of 50,000 starter kits containing MVs to all women 18-37 years of age living in the target area.	Design was a quasi-experimental time series design with a control group drawn from the same MSAs as intervention groups. Primary measure of success was an increase in self-reported regular use of multivitamins..	NS	A total of 3,438 women were interviewed. There was a small increase in proportion of women taking MVs among the direct mailing intervention group but the increase was not sustained after the intervention ended. No change was noted in the provider education or control groups	Repeated mailings of multivitamins might have resulted in more sustained use of MVs.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Comparison of effectiveness of paid and unpaid media to increase FA awareness, knowledge, and consumption among Hispanic women of childbearing age (Flores A, et al., 2007)	3	X	X		X						
Design and Evaluation of Interventions promoting periconceptional multivitamin use (Lawrence JM et al., 2003)	3			X	X						X

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Postpartum women of Mexican origin	Multivitamin use	A multivitamin supplemention and education intervention as an effective means of increasing MV use among postpartum women of Mexican origin (O'Rourke KM, Roddy ME, 2007)	Postpartum women of Mexican origin attending two WIC clinics in El Paso, TX.	The intervention clinic used an enhanced educational program including brochures and posters emphasizing the importance of taking a MV during the postpartum period. Half of the women at the intervention and control clinic were randomly chosen to receive a 3-month starter kit of multivitamins.	Data were obtained through questionnaires and folate diagnostic assays. Primary outcome was self-reported multivitamin use at 6 and and 12 months postpartum. The impact of the educational program was also assessed.	NS	A total of 329 women participated (110 at intervention clinic and 219 at non-intervention clinic). Multivitamin distribution plus education was most effective at increasing MV use at 6 and 12 months. The education intervention alone was not associated with MV use at either time period.	Provision of a 3-month starter pack of MVs may be an effective way to increase postpartum vitamin use. Postpartum women may be more likely to continue MV use since it is a habit that was started during or prior to pregnancy.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
A multivitamin supplemention and education intervention as an effective means of increasing MV use among postpartum women of Mexican origin (O'Rourke KM, Roddy ME, 2007)	2			X		X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Folic acid	Randomized trial of a physician-based intervention to increase the use of folic acid supplements among women (Robbins JM, et al., 2005)	Women of childbearing age (18-45 years) attending a routine gynecologic visit	Women in the intervention group received brief counseling on folic acid and were given a bottle of folic acid tablets. A follow up phone call by a nurse 1-2 weeks later reminded women of the importance of FA in preventing birth defects. Women in the control group received brief physician counseling on 1 of 3 preventive behaviors (seat belt use, sunscreen use, breast self-examination) and were given a coupon for free bottle of folic acid tablets.	Women were contacted by telephone 2 weeks after the intervention to assess folic acid intake using a questionnaire adapted from the 2000 March of Dimes Gallup survey. Change in folic acid use from the baseline to the 2-month follow period was assessed. Among those not regularly taking folic acid, additional questions were asked regarding reasons.	NS	322 women were enrolled and follow up information was obtained on 279 women. Weekly folic acid intake increased by 68% among the intervention group compared with 20% in the control group. Women who were black, lower income, and not planning their pregnancies were most influenced by the intervention.	Very brief physician counseling combined with starter bottles of folic acid can increase regular folic acid intake among women. Counseling can be brief and effective and is recommended for all women of childbearing age.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Randomized trial of a physician-based intervention to increase the use of folic acid supplements among women (Robbins JM, et al., 2005)	2				X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
NTD-affected pregnancies (recurrence prevention) and women of childbearing age	Folic acid	Decline in prevalence of NTDs in a high-risk region of the US (Stevenson RE et al., 2000)	Women with a previous NTD-affected pregnancy in South Carolina; all women of childbearing age in South Carolina	Case mothers were contacted after delivery and presented with information regarding the prevention of recurrence by the periconceptional use of folic acid. A statewide educational campaign was also initiated to promote the population-wide supplementation with folic acid. Included statewide conference for health workers and mailings of health alerts, fact sheets, brochures to health care professionals. Public awareness campaign included PSAs for TV and radio, billboards, calendars, brochures, etc.	Active and passive birth defects surveillance methods were used throughout study period (1992-1998). A cohort of control mothers selected from birth hospitals in South Carolina were used to determine folic acid use during periconceptional period. Telephone surveys were also used to estimate changes in folic acid use among women of childbearing age during last 3 years of study.	NS	There were no NTD recurrences in 113 subsequent pregnancies to mothers of infants with isolated NTDs who took folic acid in periconceptional period. The rate of periconceptional folic acid use increased from 8% to 35% over study period.	Awareness of the protective effect of folic acid for NTDs increased steadily over the 6-years
Women of childbearing age	Folic acid	Decline of NTD cases after a folic acid campaign in Neuvo Leon, Mexico (Martinez de Villareal et al., 2002)	Women of childbearing age living in Nuevo Leon, Mexico (near TX border)	A public awareness campaign was implemented and included communication media, brochures, and posters in public venues as well as health centers. Health professionals were invited to become involved via seminars and conferences. In 1999, an NTD prevention program was initiated with the free distribution of bottles containing 5.0-mg tablets of folic acid to 250,000 low-income women of childbearing age. Women were instructed to take 1 tablet/week.	Two surveys were conducted at 9 and 28 months into the campaign. For each survey, 2,200 women were randomly selected and asked about folic acid knowledge and use. NTD cases were ascertained via an active BD surveillance system. Rates from 1999 to 2001 were compared.	During the first year the cost of the free distribution of folic acid to low-income women was $0.25/woman/year.	At 9 months, 44% of women were aware of the benefits of folic acid; at 28 months 51% were aware. Use of folic acid increased from 32% to 44%. A 50% decrease in spina bifida and anencephaly cases was observed over the study period.	The authors propose propose the use of a single tablet of 5.0-mg of folic acid per week as an alternative to supplementation on a daily basis.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Decline in prevalence of NTDs in a high-risk region of the US (Stevenson RE et al., 2000)	4	X	X	X	X						
Decline of NTD cases after a folic acid campaign in Neuvo Leon, Mexico (Martinez de Villareal et al., 2002)	3			X	X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Pregnant women at risk for LBW babies	Low birth weight	Preventing low birth weight: marketing and volunteer outreach (May et al., 1991)	Women at risk for low LBW babies in targeted census tracts in an Arizona county	Program was designed to develop, implement, market and monitor activities of pregnant women ar risk for inadequate prenatal care, develop a community outreach program using volunteer neighborhood outreach workers, and work with women at risk to ensure prenatal care use.	Process data were used to assess the program's potential reach.	NS	The program facilitated 114 community presentations attended by 907 recipients. Telephone assistance was provided to 493 callers over 12 month period. Public health nurses and neighborhood volunteers visited 158 clients in their homes during final 10 months of the program.	Time period for project was too short to establish the visibility and success needed to garner further funding. Lack of criteria for program evaluation hindered assessment. An overall plan for program evaluation should be established as part of program planning.
Women of childbearing age	Folic acid	Ortho-McNeil Pharmaceutical, Inc Folic acid consumer qualitative research	Women 18-39 years of age in Morristown NJ and Dallas TX	Six focus groups were conducted to assess (1) perceptions and attitudes toward nutritional supplements; (2) awareness and perceptions of folic acid; (3) reaction to folic acid combined with with oral contraceptives (OC)	Six focus groups conducted: 2 groups of current OC users who may/may not be likely to conceive in next 3 years, 2 groups of women that are using some form of birth control and are likely to use OC in next six months, 2 grops of women that have at least one child, took prenatal vitamins during pregnancy, use some form of birth control and are are likely to use OC in next 6 months	NS	Women trying to have a baby accept the need and importance of taking folic acid. Women not trying to have a baby understand the importance in the event of an unintended pregnancy but choose NOT to take action because it psychologically says that they MIGHT get pregnant.	Because of the focus on pregnancy, folic acid communication needs to emphasize the need for ALL women of childbearing age to take FA. Otherwise those women using contraceptives will want to assume the message is irrelevant to them.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Preventing low birth weight: marketing and volunteer outreach (May et al., 1991)	1				X						
Ortho-McNeil Pharmaceutical, Inc Folic acid consumer qualitative research	0; formative research only										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Folic acid	Folic acid awareness and intake among California women aged 18-44: findings from the Californnia Women's Health Survey, 1997-2002 (Haydu at al)	Women of childbearing age living in California	From 1993-2002 the Maternal, Child, and Adolescent Health/ Office of Family Planning Branch (MCAH/OFP) disseminated English and Spanish folic acid pamphlets and posters. State programs have developed and distributed program-specific folic acid education materials and guidelines which are also used by health care providers. The National Folic Acid campaign began in 1999 but reduced its intensity in 2002.	The California Women's health survey is an annual household-based telephone survey that collects information from a randomly selected sample of women 18 years of age or older. Questions pertaining to folic acid awareness and intake are included. This report analyzed responses for women 18-44 years of age during 1997-2002.	NS	Among women of childbearing age in CA, awareness of folic acid increased between 1997-2000. From 1999-2001 the percent of women taking folic acid supplements remained unchanged but dropped by 50% in 2002.	Future research should address how much synthetic folic acid women consume daily through fortified foods. More research is needed to address barrier to folic acid supplement use among certain subpopulations such as younger women, Hispanic women, and women with low educational status.
Non-pregnant women of childbearing age	Multivitamin use	Evaluation of long-term multivitamin use among participants in a western North Carolina Multivitamin distribution program (J Majors, abstract from 2006 MCH Epi Conference)	Non-pregnant women of childbearing age who receive services through their local public health dept in western NC (24 county area)	Since May 2001, free multivitamins have been offered to non-pregnant women receiving services at public health clinics in the service area.	Contact information was gathered on 3,500 vitamin recipients. 500 of the recipients were randomly selected and contacted for a survey regarding vitamin use and folic acid knowledge. Survey response rate was 65%. Most surveys done by telephone with some (14%) done by mail	Average cost of $1.12 per bottle of 100 tablets	Over 73,000 bottles of multivitamins and printed information about folic acid were distributed by a health professional. Vitamin use increased from 26% prior to first free bottle to 82% at time of survey. Greatest positive change noted among Hispanic women.	Providing multivitamins as a part of routine healthcare for women of childbearing age appears to be an effective method for promoting regular vitamin usage. Results may be enhanced by individual counseling or public education campaigns.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic acid awareness and intake among California women aged 18-44: findings from the Californnia Women's Health Survey, 1997-2002 (Haydu at al)											
Evaluation of long-term multivitamin use among participants in a western North Carolina Multivitamin distribution program (J Majors, abstract from 2006 MCH Epi Conference)	3			X	X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of chlidbearing age	Multivitamin use	Formative research on a behavioral analysis of multivitamin use (CDC Foundation - Optimal Nutrition Initiative)	English-speaking women of childbearing age (18-34 years) in four US cities (Sacremento, CA; Atlanta, GA; Calverton, MD; Detroit, MI)	24 focus groups lasting 90 minutes were conducted for multivitamin users and non-users. Each group had 9 or fewer participants. Topics included general health behaviors, vitamin use, folic acid knowledge, importance of recommendations for multivitamins to prevent NTDs. Participants also engaged in a card sort activity to assess diet and food choices.	Audio and videotapes were used to transcribe all focus groups. Transcripts were coded by moderators using coded and themes derived from research questions and codes and themes that emerged from the data.	NS	Women had an "all or nothing" approach toward their health which was linked to many other perceptions and behaviors, especially their lack of emphasis on prevention. Multivitamin non-users were not prevention oriented.	Communication interventions should address the immediate benefits of multivitamin use and increase perceptions of need. Educational interventions should address increased awareness about vitamins and misperceptions of vitamins.
Non-pregnant female college students	Multivitamin use	Quantitative Message testing report (Cometrika for CDC Foundation, 2005)	Women 18-24 who did not take a multivitamin regularly, had an annual income of <$50,000, were not pregnant, and were enrolled in a college or university.	Data were collected at 4 sites (Sacramento, CA; Washington, DC; Gainesville, FL; East Lansing, MI). Participants responded to a 33-question survey that evaluated five different messages related to MV use, beliefs, norms about MV use, attitude toward MV use, behavioral intention to use MVs regularly, perceived behavioral control, credibility of CDC as a source of health information.	Each of the 33 items on the survey was accompanied by a 5-step response scale ranging from "disagree strongly" to "agree strongly." Mean message liking scores were calculated for each of the messages. Mean attitude index scores, belief index scores, norm scores and perceived behavioral control scores were also assessed.	NS	Evaluation of messages on all measured dimensions was generally favorable toward MV use. Asian participants were generally less favorable on measured dimensions of MV use than other racial groups.	The more credible participants perceived the CDC to be, the more favorably they evaluated the messages, and the more positive their attitudes toward MV use.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Formative research on a behavioral analysis of multivitamin use (CDC Foundation - Optimal Nutrition Initiative)	0; only formative research										
Quantitative Message testing report (Cometrika for CDC Foundation, 2005)	0; only formative research										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Young women of childbearing age	Alcohol-exposed pregnancy; fetal alcohol spectrum disorders	FAS prevention using community based narrowcasting campaigns (Glik et al, 2008)	Women 18-35 residing in 2 low-income areas in southern California	For each target area, audiences were segmented based on ethnicity and language preference, and focus groups were conducted to address cultural and psychosocial correlates of drinking behaviors and concerns related to pregnancy. This information was then used to prepare targeted campaigns. Materials were pretested and then placed throughout the community.	Placement and type of materials were tracked. Two-wave repeated cross-sectional survey data were collected to assess impact of campaign and assess KABs associated with drinking overall and during pregnancy. Random-digit dialed survey of women was conducted at baseline and 8 months later. Survey data were also collected at women's health clinics and physician offices.		Clinic data showed higher rates of exposure of materials than among telephone survey data. Results of multivariate regression indicated that education level, drinking status, and Compton residency were associated with higher levels of exposure to the materials. Pregnant women who drank and were exposed to the campaign held the least negative attitudes towards drinking during pregnancy.	Targeted poster campaigns are less expensive than other methods (paid advertisements, etc) but are most successful in "primed" groups (e.g. women in health care clinics). The approaches are cost-effective ways of leveraging resources to counter commercial alcohol marketing.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
FAS prevention using community based narrowcasting campaigns (Glik et al, 2008)	1			X							

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
African American women of childbearing age	Alcohol-exposed pregnancy; fetal alcohol spectrum disorders	Increasing FASD knowledge by a targeted media campaign: outcome determined by message frequency	Non-pregnant African-American women 18-35 years of age living in St Louis and Kansas city zip codes with at least 10% African American residents	Formative research was used to develop tailored messages for target audience. Four FAS messages were used and distributed via video, audio, and print advertisements, direct marketing to the community, public relations and media interviews, displays at community events, and educational videos for high school students.	A quasi-experimental design was used. Baseline random digit dialed surveys were conducted between Jan. and Mar. 2002; post-intervention surveys were conducted between Apr. and June 2004. St Louis was the exposure group and Kansas city was the control group. One way ANOVA was used to test for differences in knowledge between the 2 groups.	N/A	71% of women in St Louis remembered the campaign and 23% heard the messages more than 20 times. There was a *decline* in knowledge from pre- to post-intervention periods. Knowledge scores increased in direct proportion with the number of times a message was heard.	Overall, the campaign did not increase knowledge. Messages had to be heard >10 times to improve FAS knowledge. Use of random digit dial survey might not have been most effective strategy to assess campaign; a more targeted methodology may have been more favorable.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Increasing FASD knowledge by a targeted media campaign: outcome determined by message frequency	4	X	X	X			X				

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Alcohol-exposed pregnancy; fetal alcohol spectrum disorders	Dialogic voices in talk about drinking and pregnancy (Baxter et al, 2004)	Rural Women of childbearing age who participate in WIC	Evaluate the effectiveness of a broad-based & localized media campaign aimed at reducing AEPs in rural areas targeted women enrolled in WIC	Formative research to develop campaign materials; pre- and post-campaign survey to assess outcomes of intervention group and usual care group		Results found some increase in knowledge about FASDs. Women who viewed materials reported higher levels of discussion about topic with friends and family	Provision of a targeted prevention messages within existing system of care (WIC) seems to be a viable strategy for educating women about the dangers of drinking during pregnancy. Formative research prior to campaign implementation was helpful to better understand women's understanding about this topic

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Dialogic voices in talk about drinking and pregnancy (Baxter et al, 2004)	2	X			X						

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age, preconceptional, at risk for an alcohol-exposed pregnancy	Alcohol-exposed pregnancy, fetal alcohol spectrum disorders	Preventing alcohol-exposed pregnancies: A randomized controlled trial (Floyd et al, 2007)	The study included a diverse sample of high-risk women. Women in these settings were shown in previous CDC studies to be six times more likely to be at risk for drinking during pregnancy than the general population.	Assess the efficacy of a brief motivational intervention for women at risk for an AEP in high-risk community settings during 2002-2005.	Women received a baseline assessment of participants' demographics, use of alcohol and contraception, readiness for change in their use of alcohol and contraception, and psychological distress; four 1-hour sessions with a masters- or doctoral-level counselor; and one session with a gynecologist or birth control specialist; and post assessments at 3, 6 and 9 months post intervention		The study found that women who received the motivational counseling were twice as likely to reduce their risk for an alcohol-exposed pregnancy as compared with those who did not receive it.	This dual behavior motivational intervention (reducing alcohol use and/or improving contraception effectiveness) is an effective prevention strategy for reducing alcohol-exposed pregnancy among women at risk.
All women	Alcohol-exposed pregnancy, fetal alcohol spectrum disorders	Prevention Intervention strategies for women at risk (NBDPN annual meeting 2007 poster abstract)	155 women at project pilot sites in Texas	Following a needs assessement, a FASD Prevention State Plan was developed. During FY 2005-2006 the Texas HD subcontracted with state and local governments to help implement the plan. The goals of the prevention interventions are to increase awareness of FASD among women of childbearing age; to educate women about the danger of alcohol use during pregnancy; and to identify and intervene with women at increasingly severe levels of risk for an alcohol exposed pregnancy.	Data was collected from pilot sites where 4 interventions were tested including screening, brief FASD education and intervention, enhanced FASD intervention, and parent child assistance program.	NS	After the brief intervention, 95% of women indicated that it was not safe to drink alcoholic beverages if not using an effective method of family planning. 94% reported that no amount of alcoholic beverages are safe when a woman is pregnant.	Agency plans to use data and analyses from the project to educate the Texas Legislature, state and local government leaders, and private and corporate foundations, on the costs and benefits of prevention versus treatment among this population.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Preventing alcohol-exposed pregnancies: A randomized controlled trial (Floyd et al, 2007)	1				X						
Prevention Intervention strategies for women at risk (NBDPN annual meeting 2007 poster abstract)	4			X	X						

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
All women	Alcohol-exposed pregnancy, fetal alcohol spectrum disorders	Alcohol consumption among adult women: findings from the California Women's Health survey (Laurie Drabble)	Women >17 years of age in California	The California Department of Alcohol and Drug Programs (ADP) oversees a variety of programs for the prevention and treatment of alcohol problems. ADP also oversees a statewide network of publicly funded perinatal alcohol and drug programs that serve pregnant and parenting women.	The California Women's health survey is an annual household-based telephone survey that collects information from a randomly selected sample of women 18 years of age or older. Questions pertaining to patterns of alcohol use and knowledge about fetal alcohol syndrome (1999 questionaire only) were evaluated.	NS	Approximately 12% of pregnant women reported consuming alcohol in the prior month and 2% engaged in acute drinking. 28% of all women believed that FAS meant that an infant was born addicted to alcohol.	Collaborative planning between state agencies may be used to promote improved screening for risky drinking in health settings, particularly for pregnant women and women of childbearing age.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Alcohol consumption among adult women: findings from the California Women's Health survey (Laurie Drabble)	0; only formative research										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
U.S. adults, women of childbearing age	Alcohol-exposed pregnancy, fetal alcohol spectrum disorders	Relationship between cumulative exposure to health messages and awareness and behavior-related drinking during pregnancy (Kaskutas and Graves, 1994)	Men and women in the US (especially women of childbearing age)	Intervention consisted of health messages via government warnings on alcohol beverage containers, warning posters in restaurants and bars, and media advertisements (television, newspaper, and magazine)	Analyses of 2 cross-sectional surveys (2,000 adults from first wave and 2,017 from second wave). Knowledge was assessed by asking respondents if women should not drink alcohol during pregnancy because of the risk of birth defects. Other outcomes assessed were conversations about drinking during pregnancy, and self-reported reduction of alcohol consumption due to health concerns.	NS	Among women of childbearing age, significant predictors for conversations about drinking during pregnancy were knowledge of birth defect risk, exposure to at least one warning source, and having been pregnant in past year. In total sample, 80% reported exposure to at least 1 message source.	Findings support public health approach of broad, multi-faceted population-based interventions to promote risk reduction. Multiple communication strategies reinforce the impact of health messages, especially among a targeted group.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Relationship between cumulative exposure to health messages and awareness and behavior-related drinking during pregnancy (Kaskutas and Graves, 1994)	2	X		X							

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Postpartum women	Alcohol-exposed pregnancy, fetal alcohol spectrum disorders	The Healthy Moms Study: The Efficacy of Brief Alcohol Intervention in Postpartum Women (Fleming et al., 2008)	Women >=18 years of age seeking routine postpartum care in 15 Wisconsin counties	All postpartum patients were asked to fill out screening questionnaire. Those who screened positive for high-risk drinking were recruited for study. Intervention consisted of two 15-minute visits with a clinic nurse or obstetrician (scheduled 1-month apart) and a follow-up phone call 2 weeks after intervention. The intervention protocol was contained in a workbook that included scripted messages with feedback regarding current health behaviors, a review of the prevalence of problem drinking, a list of the adverse effects of alcohol focused on women and pregnancy, a worksheet on drinking cues, a drinking agreement in the form of a prescription, and drinking diary cards.	The primary outcome variables of interest were changes in (1) a mean number of standard drinks in the previous 28 days, (2) mean number of drinking days in the previous 28 days, and (3) mean number of heavy drinking days (4 or more drinks) in the previous 28 days. T-tests and chi-square tests were used to test for significant differences in intervention and control groups. Three separate regression models were utilized to test for experimental treatment effect on total no. of standard drinks, no. of drinking days, and no. of heavy drinking days, after controlling for potential confounders.	NS	A total of 235 women (12% of those screened) met inclusion criteria and were randomized to either "usual care" or "brief intervention." There was a 19% difference in the mean number of drinks and number of drinking days, and a 36% difference in the number of heavy drinking days in favor of the intervention group.	This study provides new evidence that brief intervention can reduce alcohol use in postpartum women. The routine postpartum obstetrical visit is an excellent setting for such an intervention. Other settings for intervention may include the offices of pediatricians, family physicians, public health nurses, or WIC clinics.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
The Healthy Moms Study: The Efficacy of Brief Alcohol Intervention in Postpartum Women (Fleming et al., 2008)	2			X	X						

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Alcohol-exposed pregnancy, fetal alcohol spectrum disorders	Strategies to prevent fetal alcohol syndrome through motivational interviewing (NBDPN annual meeting 2009 poster abstract)	Women of reproductive age receiving care at the HIV/AIDS-STD clinic in Detroit who were determined to be high risk for having an alcohol exposed pregnancy	High-risk was defined as binge drinking in the past 3 months and having sex with inconsistent or no contraception. Brief Motivational Interviewing (BMI) and written materials based on Project CHOICES intervention model were used. After initial meeting, 3 follow up sessions were conducted to continue the motivational interviewing and conduct assessment. Participants were given incentive gifts after each completed intervention session. A self-guided change version of the intervention was offered to women who wanted to use the materials at home and receive 2 follow-up calls.	After each session, the participants were asked to report sexual frequency, contraceptive activity, and drinking.	NS	After 3 follow-ups, 75% of the women receiving the BMI intervention had reduced their risk for an alcohol exposed pregnancy and 63% were no longer at risk. 75% of women using the Self-guided intervention were no longer at risk.	Motivational interviewing is an effective strategy for reducing risk of an alcohol exposed pregnancy among low-income, minority women. BMI had less attrition than the Self-guided intervention but both methods were equally effective.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Strategies to prevent fetal alcohol syndrome through motivational interviewing (NBDPN annual meeting 2009 poster abstract)	2			X	X						

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of childbearing age	Infection during pregnancy	Preventing infections during pregnancy: testing combined prevention messages and exploring women's preferences related to the format and visuals of educational materials (NBDPN annual meeting 2009 poster abstract)	Women 18-35 years of age who were pregnant, planning a pregnancy, or had a baby in the last 4 years	Researchers conducted six, 2-hour focus groups; each group explored a different aspect of written educational materials on prevention messages related to infections during pregnancy. The first group was asked about the content of a letter sized fact sheet, the second was asked about 4 different formats for the same prevention message, and the third group was asked about the visual appeal of the previously tested elements.	Qualitative data from the focus groups were collected.	NS	Results suggested that women wanted more information about consequences of contracting different infections. Women preferred to highlight prevention tips that were less commonly known. The trifold format was most preferred. The use of images more reflective of the culture and ethnicity of the intended audience was also suggested.	Message testing is an important step in developing effetive educational materials. This experience highlighted the usefulness of the prevention materials and indicated some areas for improvement.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Preventing infections during pregnancy: testing combined prevention messages and exploring women's preferences related to the format and visuals of educational materials (NBDPN annual meeting 2009 poster abstract)	0; only formative research										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Hispanic women of childbearing age	Folic acid	Two years later: how multivitamins, folic acid, and birth defect knowledge and behaviors changed among Hispanic women in NC after a multi-faceted intevention (NBDPN annual meeting 2009 poster abstract)	Spanish speaking Hispanic women 18-35 years of age in North Carolina	6 pairs of counties were randomly selected (6 urban, 6 rural) and each county from one pair was randomly assigned to receive a mulifacted intervention; the other county served as the comparison group. The intervention included health care provider education, a lay health education program, and a paid media campaign regarding folic acid and birth defects. The comparison counties received only the media campaign.	Baseline surveys were administered to all 12 counties in 2006. Surveys assessed knowledge beliefs and behaviors regarding multivitamins, folic acid and birth defects. After the intervention was completed, post test surveys were again completed in all 12 counties (in 2008). Data were weighted and analyzed using SUDAAN.	NS	There was an overall increase in knowledge regarding multivitamins and folic acid in 2008 compared with 2006. Hispanic women in intervention counties were more likely to be knowledgeable about multivitamins but less likely to consume multivitamins than Hispanic women in comparison counties.	The multi-faceted campaign increased knowledge but this did not translate to vitamin-taking behavior change. A longer intervention period may be been more effective.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Two years later: how multivitamins, folic acid, and birth defect knowledge and behaviors changed among Hispanic women in NC after a multi-faceted intevention (NBDPN annual meeting 2009 poster abstract)	3	X	X		X						

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Low-income women, young women	Folic acid, healthy behaviors	Designing an effective public education campaign for younger, low income women (NBDPN annual meeting 2009 poster abstract)	Low-income women <25 years of age in Vermont	Vermont Health Department contracted with a social marketing firm to conduct 2 focus groups with young, low-income women to identify potential barriers to taking multivitamins and to design public health messages addressing these barriers.	One focus group was conducted in the city with the largest and most diverse population and the other was conducted in a rural area. Perceptions towards multivitamins and health were explored and potential barriers and encouragements to healthy behaviors were identified.	NS	Women in both groups were similar and had low self-esteem. A positive role model and supportive environment were identified as key factors in adopting new health practices. The most appealing picture of a role model was a wam and gentle middle aged woman who is happy, healthy, and active.	These women would respond best to health messages from an appealing, middle aged, female role model. They preferred encouragement in taking small, simple and credible steps toward establishing better health habits.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Designing an effective public education campaign for younger, low income women (NBDPN annual meeting 2009 poster abstract)	0; only formative research										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Low-income women of childbearing age	Folic acid	Folic acid knowledge, behaviors and beliefs: a multivitamin distribution campaign in New Hampshire (NBDPN annual meeting 2008 poster abstract)	Women of childbearing age visiting WIC nutrition agencies, prenatal health centers, and city health department in New Hampshire	Multivitamins containing 400 mcg of folic acid are provided to post-partum women that participate in the NH WIC Program, as well as, women of childbearing age who receive health care at participating healthcenters across the state.	Pre-(n=1596) and post-(n=238) survey data were collected in 19 locations across the state: 5 WIC nutrition agencies, 13 prenatal health centers, 1 city health department. A;; women between the ages of 18-45 were encouraged to participate.	NS	68% of all women reported knowledge that FA prevents birth defects with little difference among ethic groups. Most frequently reported reasons for not taking vitamins were cost, unable to remember, and whether a doctor specifically advised to take them.	More women would take a multivitamin containing folic acid if it were available at low cost or free. Hispanic women may need more education on the optimal time to take vitamins. Distribution of multivitamins and education has a positive effect on knowledge, behaviors and beliefs about folic acid.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic acid knowledge, behaviors and beliefs: a multivitamin distribution campaign in New Hampshire (NBDPN annual meeting 2008 poster abstract)	2				X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of chlidbearing age	Folic acid	Folic acid awareness and use in New York State, 1997-2006 (NBDPN annual meeting 2008 poster abstract)	New York state women 18-44 years	From September 1996 to October 1997, the New York State Department of Health conducted an extensive educational campaign to promote the use of folic acid.	The optional folic acid module of the Behavioral Risk Factor Surveillance System was include in the New York surveys in 1997, 1999, 2002, and 2006. Knowledge of the benefits of folic acid to prevent birth defects and daily use of folic acid was assessed by telephone interview. The weighted survey data were analyzed.	NS	The overall proportion of women with knowledge of the benefit of folic acid did not change over the 10-year period. Knowledge among women 18-24, non-Hispanic black women, and women with less than high school education decreased in 2006. Daily use of folic acid increased from 26% in 1997 to 42% in 1999. A non-signficant decrease was observed in 2006.	The decreases in awareness and daily use among most demographic groups should be monitored in future years. Resources for continual education and outreach are needed to maintain these important public health messages in NY state.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic acid awareness and use in New York State, 1997-2006 (NBDPN annual meeting 2008 poster abstract)	0; only formative research										

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Women of reproductive age	Folic acid	Women's reactions to the Puerto Rico folic acid campaign (NBDPN annual meeting 2008 poster abtract)	Women of childbearing age living in Puerto Rico	The Puerto Rico folic acid campaign started in 1994 and was modified in 2003 based on the recommendations of a marketing study. In 2007, the new folic acid campaign evaluated to assess the level of awareness and recall of the folic acid campaign messages and to expore reactions to the new messages implemented in 2004.	In-person interviews were conducted by experienced staff from February to May 2007. Participants were selected by stratified random sample based on US Census data. Non pregnant women of reproductive age were interviewed using a structured questionnaire.	NS	A total of 725 women were interviewed. About 36% of women were able to spontaneously remember the campaign; of those, 38% thought folic acid was only for pregnant women. TV messages were more frequently recalled than brochures.	TV interventions appeared to have a greater impact than the brochures. Increasing the number of TV interventions could be a good strategy for increasing awareness and use of folic acid.
Women of childbearing age	Folic acid	WIC vitamin pilot project to enhance folic education in Utah, 2000-2003 (NBDPN annual meeting 2008 poster)	Women of childbearing age attending WIC clinics in Utah	Data from the Utah Birth Defects Network suggests that characteristics of women attending Utah WIC clinics were similar to those of women at risk for an NTD-afftected pregnancy. Thus, an education and multivitamin project was piloted in the statewide WIC program.	Educational materials and multivitamins were provided for each WIC clinic. Materials were distributed in face-to-face sessions to nonpregnant women enrolled in WIC beginning in 2000. The WIC Client Satisfaction Survey was used to evaluate the program.	NS	Approximately 885 (n=3694) women completed the survey. Of the 3,007 women who completed the survey, 21% indicated they received a free bottle of vitamins, 41% finished the bottle, and 11% finished the bottle and received another.	The pilot project was well received by the clinic staff and women served. Providing education on the importance of folic acid consumption may facilitate the use of multivitamins.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Women's reactions to the Puerto Rico folic acid campaign (NBDPN annual meeting 2008 poster abtract)	2	X		X							
WIC vitamin pilot project to enhance folic education in Utah, 2000-2003 (NBDPN annual meeting 2008 poster)	3			X	X	X					

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Family practice and OB/GYN health care providers	Folic Acid	Folic acid in-services for health care providers: impact on awareness and practice, North Carolina Folic Acid Council (NBDPN annual meeting 2010 poster)	Family practice physicians and OB/GYN physicians who attended an in-service about folic acid	One of NC's initiative's has been to increase the frequency with which providers recommend folic acid to females of child bearing age. Several private practice offices have received in-services since 2003.	Two confidential, written surveys were created, administered and analyzed in 2007/08 to pretest and posttest knowledge levels and current practice regarding folic acid recommendations. The first survey was administered just before the in-service and the second survey was mailed to participants 3-6 months after the in-service	N/A	Results showed a 15% increase in the number of respondents who correctly identified 400mg as the recommended amount for non-pregnant females of child bearing age. Practioners who discussed the importance of taking folic acid supplements with patients at annual exams increaed 7% and 15% for patients visiting routinely other than annual visits.	Results indicate that in-services about folic acid supplementation have a positive effect on provider knowledge and practice habits. Based on the pretest and posttest surveys, knowledge and percentage of recommendations to patients increased after the in-service.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Folic acid in-services for health care providers: impact on awareness and practice, North Carolina Folic Acid Council (NBDPN annual meeting 2010 poster)	1			X							

Birth Defects Prevention Evaluated Activites

Target population	Topic area	Project	Audience	Specific program activities	Evaluation methods	Costs	Outcomes/ results	Conclusions/ lessons learned
Young women of childbearing age	Folic Acid	Evaluating a public education campaign targeted to young, low income women	Young women of childbearing age with low income	The Vermont Behavioral Risk Factor Surveillance System found that young, low income and low education women were the group least likely to take folic acid and be aware that folic acid could prevent birth defects. An educational campaign was designed in collaboration with a social marketing firm in oder to target this population for folic acid education.	Pretest and posttest surveys were conducted via phone and personal intercepts. The survey contained items about multivitamin and folic acid supplement use and barriers to taking multivitamins. Recall of the campaign materials was asked in the posttest.	N/A	37% of women recalled hearing the radio ad and 71% correctly recalled its message. Vitamin use increased from 34% to 39%, but this increased was not significant. 75% of women reported the cost of mulivitamins as a barrier.	The campaign was remembered by more than 1/3 of the target population indicating the campaign was effective. High retention of the message among those who heard the radio ad indicates the message was clearly presented. Because there was no significant increase in the use of multivitamins repeated use of the radio ads may be more effective in changing behaviors.

ıtion Evaluated

Project	Number of Interventions Used	Television/ Video	Radio	Print/Brochure/ Posters/Print Ads/foto-novelas/ school curriculum	Health Care Professionals (MD, RN, promotoras, WIC, counselor, brief counseling)	Vitamin distribution	Community events (health fairs)	Billboards	News conference	Awareness paraphenalia (ribbons)	Direct Mailing
Evaluating a public education campaign targeted to young, low income women	1		X								