

Do we really need a Policy on Folic Acid Supplementation and Fortification?

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Neural tube defects (NTDs) are abnormalities that can occur in the brain, spine, or spinal column of a developing embryo and are present at birth. The range of neural tube defects include the *spina bifida* (neural tube does not close completely), the *spina bifida occulta* (small gap in the spine but no opening or sac on the back), the meningocele (a sac of fluid that protrudes through an opening in the back, but the spinal cord is not involved), the myelomeningocele (bones of the spinal column do not form completely, which causes some of the spinal cord and tissues covering the spinal cord to bulge out of the opening), *anencephaly* (little or no brain matter and also may be lacking part of its skull), *encephalocele* (tube fails to close near the brain and there is an opening in the skull usually a small opening in the nasal or forehead area that is not noticeable), and *iniencephaly* (infant's head is bent severely backward and the spine is exceptionally distorted).¹ Depending on the type of NTD, the outcome on the affected baby ranges from no symptoms, mild disability, to death as in the case of anencephaly. NTDs form during fetal development during the first 30 days after conception. Thus, interventions to prevent NTDs must reach women prior to pregnancy or within the first month of pregnancy, potentially even before women know they are pregnant.

Studies have shown that adequate intake of folic acid results in a range of 37% to 92% reduction of NTD occurrence.²⁻⁵ Thus, it is recommended that women of childbearing age should supplement with 0.4mg (400ug) of folic acid daily, two months prior to conception and until the 12th week of gestation.⁶⁻⁹ In the Philippines, 16% of pregnancies are unplanned and 20% are mistimed.¹⁰ The 2003 National Nutrition Survey (Food and Nutrition Research Institute, Philippines) found that only 14.6% of pregnant women had used folic acid supplements during the critical periconceptional pregnancy period.¹¹ Thus, a public health program of folic acid supplementation to reduce the risk of newborns with NTDs needs to target women before they get pregnant.

Research studies have shown that fortification of staple foods with folic acid reduces the risk of NTDs¹²⁻¹⁷ and that mandatory fortification with folic acid is more effective than voluntary fortification to reduce NTDs.^{13,14,18} Aside from reducing the risk of NTDs, fortification with folic acid can also reduce folate deficiency and folate-deficiency anemia.^{12,19,20} According to the 2008 National Nutrition Survey (Food and Nutrition Research Institute, Philippines), 40-60% of reproductive age women in the Philippines are folate deficient.²¹ Given that the maternal blood folate requirements to prevent NTDs is higher than for deficiency,²² it is safe to assume that a substantially larger proportion of women are therefore folate insufficient and at risk of an NTD-affected pregnancy.

As of September 2017, 86 countries have legislation mandating the fortification of wheat flour with iron and/or folic acid.²³ Of these 86, there are only five countries, including the Philippines, that do not include folic acid under the required nutrients.¹⁹ This represents a missed opportunity for reducing the occurrence of NTDs in the Philippines. Based on estimates of the number of NTDs in the Philippines, and impacts that have been achieved by other countries, fortification with folic acid could prevent between 3,000 and 3,500 babies with NTD per year from being born in the Philippines.¹³

To this date, there is no national data on the occurrence of NTDs. At the Philippine General Hospital, a tertiary referral hospital, the occurrence is 23-24 per 10,000 live births.^{24,25} For comparison, eliminating folic-acid sensitive NTDs is estimated to result in rates as low as 5-6 per 10,000 live births.²⁶

In 1998, birth defects statistics were presented to the Department of Health of the Philippines, showing that NTDs were in the top 10 birth defects. For almost two decades, the NTD rates in the Philippines remain unchanged. Despite the numbers, there is still no comprehensive public health program regarding folic acid supplementation and fortification, two major strategies to reduce NTDs in the country.

Recognizing the importance of folic acid in the prevention of NTDs, various bills have been filed in the past 14th, 15th, 16th Congresses and currently at the ongoing 17th Congress. Table 1 presents a summary of bills filed by the Senators and Congressmen. Up to this time, no legislation has been passed to support a comprehensive national program on folic acid supplementation or fortification.

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To support a successful reduction of cases of NTDs in the Philippines, the establishment of a policy at the Department of Health is urgently needed. Indeed, legislation could help facilitate the development of a comprehensive public health program that covers increasing awareness

among women at risk, government infrastructure for folic acid supplementation and fortification, research, management of the patients with NTDs, and provision of other services to surviving individuals including job opportunities.

Table 1. Bills on Folic Acid Filed in the 14th, 15th, 16th and 17th Congresses

14 th Congress			
Bill No.	Introduced by	Title	Objectives
SBN 1271	Sen. Miriam Santiago Filed on July 18, 2007	An act to provide for a national folic acid education program to prevent birth defects	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects and for purposes of encouraging each woman of reproductive capacity (whether or not planning a pregnancy) to consume on a daily basis a dietary supplement that provides an appropriate level of folic acid.
SBN 973	Sen. Manny Villar Filed on July 4, 2007	"Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity.
SBN 696	Sen. Jinggoy Ejercito-Estrada, Filed on July 3, 2007		<ul style="list-style-type: none"> To conduct research to increase the understanding of the effects of folic acid in preventing birth defects, including understanding with respect to cleft lip, cleft palate, and heart defects. To provide for appropriate epidemiological activities regarding folic acid and birth defects, including epidemiological activities regarding neural tube defects
HB 4143	Rep. R Rodriguez, N Santiago, Chavez, R Estrella, Valdez, Pingoy, RS Uy, RA Uy, Yu, Jaafar, Syjuco, Piamonte, Salimbangon, Arenas, Violago, Codilla, and Prieto-Teodoro Filed on May 15, 2008	An act to provide for a national folic acid education program to prevent birth defects "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects To encourage women of reproductive capacity to consume the appropriate amount of folic acid as a dietary supplement on a daily basis To ensure the success of such education and training program To provide technical assistance to public and nonprofit private organizations To conduct continuing studies on the effects of folic acid to increase the understanding of the same on the health of the citizenry, especially its contribution to the prevention of birth defects, cleft lip and palate, and heart defects To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity
15 th Congress			
Bill No.	Introduced by	Title	Objectives
SBN 2310	Sen. Miriam Santiago Filed Aug 3, 2010	An act to provide for a national folic acid education program to prevent birth defects	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects and for purposes of encouraging each woman of reproductive capacity (whether or not planning a pregnancy) to consume on a daily basis a dietary supplement that provides an appropriate level of folic acid.
SBN 1172	Sen. Manny Villar Filed July 12, 2010	"Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity.
SBN 681	Sen. Jinggoy Ejercito-Estrada, Filed July 7, 2010		<ul style="list-style-type: none"> To conduct research to increase the understanding of the effects of folic acid in preventing birth defects, including understanding with respect to cleft lip, cleft palate, and heart defects. To provide for appropriate epidemiological activities regarding folic acid and birth defects, including epidemiological activities regarding neural tube defects.
HB 592	Reps. R Rodriguez, M Rodrigues, Syjuco, Maraon, Evardone, Teodoro, and Herrera-Dy Filed July 1, 2010	An act to provide for a national folic acid education program to prevent birth defects "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects To encourage women of reproductive capacity to consume the appropriate amount of folic acid as a dietary supplement on a daily basis To ensure the success of education and training program To provide technical assistance to public and nonprofit private organizations To conduct continuing studies on the effects of folic acid to increase the understanding of the same on the health of the citizenry, especially its contribution to the prevention of birth defects, cleft lip and palate, and heart defects
HB 1028	Rep. Augusto Syjuco Filed July 28, 2010	An act to provide for a national folic acid education program to prevent birth defects "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity

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16 th Congress			
Bill No.	Introduced by	Title	Objectives
SBN 1919	Sen. Miriam Santiago Filed November 14, 2013	An act providing for a national folic acid education program to prevent birth defects "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects and for purposes of encouraging each woman of reproductive capacity (whether or not planning a pregnancy) to consume on a daily basis a dietary supplement that provides an appropriate level of folic acid To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity To conduct research to increase the understanding of the effects of folic acid in preventing birth defects, including understanding with respect to cleft lip, cleft palate, and heart defects To provide for appropriate epidemiological activities regarding folic acid and birth defects, including epidemiological activities regarding neural tube defects
SBN 1523	Sen. Jinggoy Ejercito-Estrada, Filed September 4, 2013	An act to provide for a national folic acid education program to prevent birth defects "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects and for purposes of encouraging each woman of reproductive capacity (whether or not planning a pregnancy) to consume on a daily basis a dietary supplement that provides an appropriate level of folic acid To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity To conduct research to increase the understanding of the effects of folic acid in preventing birth defects, including understanding with respect to cleft lip, cleft palate, and heart defects To provide for appropriate epidemiological activities regarding folic acid and birth defects, including epidemiological activities regarding neural tube defects
SBN 1135	Sen. Antonio Trillanes Filed July 29, 2013		<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects To encourage women of reproductive capacity to consume the appropriate amount of folic acid as dietary supplement on a daily basis To ensure the success of education and training program To provide technical assistance to public and nonprofit private organizations To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity
HB 1088	Rep. Rufus Rodriguez Filed July 29, 2013		<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects To encourage women of reproductive capacity to consume the appropriate amount of folic acid as a dietary supplement on a daily basis To ensure the success of education and training program To provide technical assistance to public and nonprofit private organizations To conduct continuing studies on the effects of folic acid to increase the understanding of the same on the health of the citizenry, especially its contribution to the prevention of birth defects, cleft lip and palate, and heart defects To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity
17 th Congress			
Bill No.	Introduced by	Title	Objectives
SBN 596	Sen. Antonio Trillanes Filed July 19, 2016	An act to provide for a national folic acid education program to prevent birth defects "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects To encourage women of reproductive capacity to consume the appropriate amount of folic acid as dietary supplement on a daily basis To ensure the success of education and training program To provide technical assistance to public and nonprofit private organizations To conduct continuing studies on the effects of folic acid to increase the understanding of the same on the health of the citizenry, especially its contribution to the prevention of birth defects, cleft lip and palate, and heart defects To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity
HB 3128	Rep. Harry Roque Jr. Filed August 24, 2016	An act providing a national folic acid awareness program to prevent birth defects and provide free folic acid supplementation in health centers "Folic Acid Promotion and Birth Defects Prevention Act"	<ul style="list-style-type: none"> To provide education and training for health professionals and the general public for purposes of explaining the effects of folic acid in preventing birth defects To encourage women of reproductive capacity to consume the appropriate amount of folic acid as a dietary supplement on a daily basis To ensure the success of such education and training program To provide technical assistance to public and non-profit private organizations To conduct continuing studies on the effects of folic acid to increase the understanding of the same on the health of the citizenry, especially its contribution to the prevention of birth defects, cleft lip and palate, and heart defects To conduct research with respect to such education and training, including identifying effective strategies for increasing the rate of consumption of folic acid by women of reproductive capacity To provide for funding for free folic acid supplements in barangay health centers for women contemplating pregnancy, under the care of a health professional

HB 3341	Rep. Pia Cayetano	An act establishing an integrated utilization and promotion of folic acid food fortification and supplementation	<ul style="list-style-type: none"> • To ensure that every woman of reproductive age has access to food and food products containing folate and folic acid and folic acid supplements to reduce the risk of miscarriage and having babies with neural tube defects and other birth defects • To ensure that there is adequate supply of folic acid-fortified food and food products and folic acid tablets at an affordable price • To ensure that there is sufficient and correct information on the role of folate and folic acid for women of reproductive age and their children • To ensure the creation of a sustained inter-agency collaboration for the aggressive implementation and monitoring of this Act • To foster collaborative undertakings in continuous research on folic acid and food fortification and supplementation
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