

Improving the Use of Folic Acid Supplements in Persons who are Planning or Capable of Pregnancy

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Abstract

Background: The United States Preventive Services Task Force (USPSTF), along with the FDA and CDC, recommends that all individuals who are capable of becoming pregnant take daily supplements that contain 0.4-0.8 mg of folic acid. Folic acid can reduce the risk of neural tube defects (NTDs) which often occur if a person does not have enough serum folic acid concentration prior to becoming pregnant. NTDs include anencephaly, spina bifida, encephalocele, craniorachischisis, and iniencephaly. This phenomenon has an estimate of about 3,000 pregnancies per year in the United States alone and 1 in every 1,000 births globally. The neural tube is formed and closed by the fourth week of pregnancy, prior to many women knowing they are pregnant. Since neural tube defects often occur early on, it is recommended by the CDC that all women of the childbearing age take prenatal vitamins which contain folic acid and other necessary vitamins to help prevent birth defects that may occur. The primary objective of this project is to increase the number of persons who are taking the recommended amount of folic acid of those who are capable of pregnancy receiving care at the Southern Illinois Healthcare Foundation (SIHF) in Alton, Illinois. The secondary objectives are to decrease the prevalence of neural tube defects within this population, determine justification for creating a quality improvement metric that facility providers must meet, and justification for adding a question to patient intake forms asking if they can afford a daily multivitamin.

Methods: Using a retrospective chart review from AthenaOne EMR, patient data was collected, de-identified and analyzed for inclusion criteria of female gender at birth, with a uterus between the ages of 12-45. The percentage of patients on multivitamins with folic acid was calculated as a baseline. After the intervention including small media handout and education from a medical resident or pharmacy student, the percentage of patients on the multivitamin with folic acid was then reassessed and compared with baseline to analyze impact.

Data Analysis: Analysis includes obtaining data from the SIHF Alton clinic through AthenaOne database about persons who are eligible for study inclusion by looking at patient data and medication lists in the EMR. The percentage of patients already taking folic acid multivitamins to the total number of included patients was calculated. On March 18, 2024 the percentage of patients on folic acid vitamins was reassessed for comparison to initial data to evaluate whether there was an increase in the number and percent of patients on the folic acid multivitamin.

Results: Of an initial 2949 patients, a sample group of 251 was assessed and none were on multivitamins with folic acid daily. The report included patients that were assigned female at birth and seen at the SIHF Alton Clinic ranging from ages 12 to 45 years old. On March 18, 2024, researchers collected data from only a sample group of 251 patients ensuring that there was sufficient representation of data for each age. 34 patients were excluded due to not meeting the inclusion criteria. Out of 217 patients, none (0%) were receiving a prenatal vitamin before the intervention, and 2 (0.79%) started a vitamin with folic acid post-intervention as recommended by guidelines.

Discussion: Though this is an ongoing study, some small difference has already been made in prescribing prenats. Many patients were willing to consider the prescription and revisit the conversation. We were able to notice trends in misinformation and bias preventing patients from taking prenats and begin to educate accordingly. There are also some notable limitations to the trial including access to patients managed by certain providers, patient bias, and the varying completeness of each patient's chart.