



# “Kids Against Asthma” To Prevent Pediatric Asthma in San Joaquin Valley

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### Introduction

Asthma is a chronic disease that affects individuals all over the nation. Triggers include inhaled allergens or irritants that cause inflammation and narrowing of the airways (1). The nation’s highest asthma rates can be seen in the agricultural community of San Joaquin Valley, California (2). Children of Mexican farmworkers are the vulnerable population in this community. Due to the harmful pollutants that these children have been exposed to, they have become more susceptible to developing asthma and overall health problems. In order to decrease these rates, we propose to provide a mobile asthma education program and community center to aid in providing education to farmworkers, parents, and school personnel.

### Community Analysis

The San Joaquin Valley has a current population of 745,424 residents. Of that population, 41.6% is Hispanic/Latino (3).

In 2001, 15.8% of children and adolescents were diagnosed with pediatric asthma in San Joaquin Valley and 13.6% were diagnosed in California as a whole (4). Today (2016), the rate has more than doubled to 34.3% in San Joaquin and has only slightly increased to 14.5% in the rest of California (3).

Over the past 30 years, San Joaquin has used a specific pesticide that has caused detrimental effects on pediatric health. Chlorpyrifos is a pesticide that has been widely used by farmers in the San Joaquin and all over the United States. It has many toxic effects and can cause bronchial hypersensitivity that can trigger asthma attacks and increase the risk of developing asthma (5).

The San Joaquin Valley has come up with various resources to help eliminate the current health problem. These resources include the Fresno County Asthma Coalition and the Asthma Impact Model.

- The Asthma Impact Model is a program created in 2013 to avoid ED visits by helping low income families manage their children’s asthma.
- The Fresno County Asthma Coalition has been active for over 15 years with the support of community members, including nurses and respiratory therapists. Members strategize approaches to provide opportunities for asthma education at all levels (6).

### Problem

-Pediatric asthma among Mexican children has become a major health problem in the San Joaquin Valley.

-California’s San Joaquin Valley is one of the most prosperous agricultural regions in the world, containing seven of the top 10 agricultural counties in the United States (5). The pesticide use and air pollution has been linked to high rates of asthma and other respiratory diseases.

-San Joaquin is ranked as the fourth highest county to use agricultural pesticide in California. As a result, children are regularly exposed to aerosol spraying of pesticides and are at an elevated risk of developing respiratory problems (5).

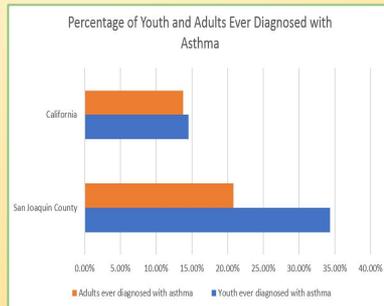
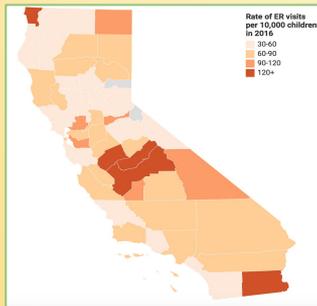
-Children are considered to be the most vulnerable population in San Joaquin Valley. They are at a higher risk than adults because they absorb environmental toxins at a higher rate (5).

-San Joaquin houses the largest number of Mexican immigrant farmworkers in California. Children of Mexican farmworkers have exceptionally high rates of asthma compared with children of Mexican descent in both the U.S. and Mexico. Poverty and marginal living conditions increase their vulnerability to environmental health hazards and non-communicable diseases.

-The effects of pediatric asthma on this population have been evident when looking at the rates of Emergency Department visits in San Joaquin. According to California Health Interview Survey, the counties in the San Joaquin have some of the worst rates in the state (7). The California Health Interview Survey found that 30.6% of children visited the ED or urgent care for asthma compared to 12.1% for the rest of California (8).

-According to the American Lung Association, the San Joaquin Valley has the highest pediatric asthma rates in all of the nation (2). It remains home to some of the most polluted air in the United States, in terms of both ozone and particle pollution (9).

-Compared with California as a whole, asthma prevalence and hospitalization rates are greater in San Joaquin Valley (3). San Joaquin Valley residents breathe some of the nation’s dirtiest air, and about 1 in 4 children have asthma. According to the California Health Interview Survey, this ratio makes San Joaquin the region with the highest proportion in the state (7).



### Solution

“Kids Against Asthma” is an educational program to reduce the asthma morbidity and mortality levels in San Joaquin. Our goal is to decrease the rates of asthma related ED visits, school absences, and the amounts of pesticides used by the farm workers in the community.

Learning objectives to achieve our goal:

1. To help parents of affected children and school personnel to understand the triggers of asthma and how they can be avoided.
2. To educate affected children about prescribed medication regimens to prevent exacerbations of asthma.
3. To educate farmworkers on the use of alternative techniques to reduce pesticide use without disrupting the agricultural production in the San Joaquin Valley.

Using Dr. Nola Pender’s Health Promotion Model we provide an educational program to increase knowledge about achieving optimal health through interaction with San Joaquin’s surrounding environment and community.

### Our Plan:

- To provide weekly educational seminars throughout the community by means of a mobile van funded by the county of San Joaquin Valley.
- On board the van will be 1-2 nurses, preferably Spanish speaking and of Mexican descent, who will offer free asthma screenings and peak flow meters. This will help the target population assess the severity of their asthma.
- To provide further education regarding: the importance of removing pesticide-filled clothing and shoes before entering homes, the specific triggers that exacerbate pediatric asthma and avoidance of children playing in pesticide infested fields.
- To create a community center where all children can play. In this center, children will be away from the pesticides and will be monitored by nurses and healthcare workers.

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