The Evolution of Public Health

Then -and- *Now*

Stanislaus County **HEALTH SERVICES AGENCY**

Public Health Annual Report 2008

Jonas Salk received a special citation from President Eisenhower, to recognize his successful development of the polio vaccine.

Table of Contents

Annual Report to the Board of Supervisors
Public Health Department
Health Services Agency
April 2008

INTRODUCTION

This Public Health report focuses on the evolution of public health services, the changes in demographics within Stanislaus County, the emerging health issues and how the local public health department has evolved to meet the needs of the public, while fulfilling its core responsibilities.

Last year's report introduced the beginning of a strategic planning initiative the Health Services Agency/ Public Health Department (PHD) had embarked upon thus continuing improvement efforts of the division. The PHD has since been selected to participate as a pilot site through the National Association of County and City Health Officials (NACCHO) to address the quality improvement efforts and infrastructure of the division. This will influence the strategic planning efforts, therefore this will be reported at a later date.

Important to any discussion of public health is an understanding of the mission and vision of the Department, and the fiscal challenges faced in response to categorical funding. Equally as important is knowledge of the local public health department responsibilities as defined by the National Association of County and City Health Officials, Centers for Disease Control and Prevention (CDC), other governing organizations and legislatures, which set the standards that describe these responsibilities.

The mission of the Public Health Department is "To promote, protect, and improve the health of the community through leadership, partnership, and innovation." The vision of the Public Health Department is "Healthy People in a Healthy Stanislaus."

There are three (3) Core Functions and ten (10) Essential Services that serve as the framework for the Public Health Department and describe the responsibilities expected of the local health department to fulfill, as outlined by NACCHO and CDC. The Core Functions and the corresponding Essential Services are:

- **Assessment**
    1. Monitor Health
    2. Diagnose & Investigate

- **Policy Development**
    3. Inform, educate, and empower people about health issues.
    4. Mobilize community partnerships and action to identify and solve health problems.
    5. Develop policies and plans that support individual and community health efforts.

- **Assurance**
    6. Enforce laws and regulations that protect health and ensure safety.
    7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
    8. Assure competent public and personal health care workforce
    9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.

System Management is the center of all of the Core Functions, and requires:

10. Research for new insights and innovative solutions to health problems.

This report is a snapshot of the many PH programs within the department, and highlights a few examples of how the department is fiscally positioned to address growing health issues, then discusses the evolution of the diseases/health concerns from the beginning of public health in the 19th Century, the efforts to prevent or address the concerns today, and the Core Functions and Essential Services that the department fulfills as a result of these efforts.

FOREWORD

Evolution of Public Health: *Then & Now*

Public Health has been an integral part of county government for almost 80 years. Public Health is the study and practice of addressing and preventing threats to the health of a community. The goal is to improve lives through the identification, prevention and where necessary treatment of injury and disease. This year's report provides a historical perspective on the evolution of the Public Health Department's role in addressing the community's health and a look forward to the responsibilities for assuring the health of the population in the 21st century.

The concept of Public health predates its establishment in Stanislaus County. It originated from the beginning of human civilization with the responses to public health threats such as the smallpox epidemic of the 18th century, vaccination to treat smallpox and the Cholera pandemic in the 19th century.

Early public health achievements such as: sanitation, vaccination programs, control of infectious diseases, implementation of safety policies, and implementation of programs designed to decrease injuries and chronic disease contributed to the increase in average life span during the 20th Century. The 21st Century is facing increased public health challenges such as the increase of chronic diseases and exposure to environmental factors that can decrease life expectancy and increase levels of disability within the population. The Public Health field strives to maintain the gains of the past while identifying and addressing these emerging threats.

While many other countries apply their centralized government infrastructure to direct public health agencies, State and Local Health Departments lead the public health initiatives in the United States. California's public health efforts are primarily addressed at the local level. Health Departments in the United States continue to demonstrate the need to respond to both emerging and reemerging diseases of a changing population. Stanislaus County's demographics reflect the national increase in diversity stemming from immigration, refugees, and the increase in the average life span of residents.

The original Stanislaus County Public Health Department (PHD) was established in 1929 to address the needs of the county population. The main County Public Health Department (PHD) facility located on 820 Scenic Drive was built in 1962 and was designed to accommodate the sixty-two staff members as identified in the county records of 1980. Today, the Public Health Department has 228 full and part time staff, and primarily work from three locations including the Scenic Drive building.

At the dawn of the 21st century, Stanislaus County remains challenged by preventable emerging and reemerging infectious diseases as well as poverty-related health conditions. One of the emerging infectious diseases, Methicillin-Resistant Staphylococcus Aureus (MRSA), has dominated the headlines this past year. While continuing to prevent the spread of reemerging tuberculosis due to the rise in HIV/AIDS-related infections and antibiotic-resistant tuberculin strains, the increase of childhood obesity, the concomitant increase in type II diabetes among

children, rise in infant mortality rates, and the prevalence of heart disease place a new burden on the current infrastructure of the department.

In addition to addressing these preventable emerging and reemerging concerns, Public Health Departments must maintain efforts to the mandated responsibilities of the population. Despite these additional responsibilities, Public Health Departments continue to receive reduced State and federal funding. A variety of factors affect funding and although some categorical public health issues have received local and national attention (TB, Cholera, West Nile, HIV), there has been little comprehensive planning and therefore little financing associated with building the public health infrastructure. Federal and State funding continues to follow specific categorical programs, thus creating more reactive vs. proactive responses.[1] Prevention may appear costly but the failure to prevent the spread of disease or health risks results in enormous financial costs to society and the health care system. Because of this, the Public Health Department is continually challenged to strategically utilize limited resources to impact the greatest number of residents.

Each year, National Public Health Week focuses on a major National health concern. The Stanislaus County Public Health Department uses the National Public Health Week focus to generate new ideas on how to address changing health concerns. Global warming, climate change, and environmental impacts on health have been a major public health topic over this last year. As a result, the American Public Health Association has dedicated this year's National Public Health Week to focus on environmental impacts as they relate to chronic diseases.

[1] Novick,MD, MPH, Lloyd F, et al. Public Health Administration: Principles for Population-Based Management.

CHAPTER 1: PUBLIC HEALTH FINANCIALS

The Financial Realities of Public Health

Fiscal Years 1979-80, 1989-90, 1999-2000, 2006-07

Since its inception in November 1929, the Stanislaus County Public Health Department has illustrated its ability to respond to challenges to meet the increase in service demands, responsibilities, and health concerns of a rapidly growing and aging community. This section of the 2008 Public Health Report provides a glimpse into understanding the financial realities and limitations the department faces when preparing to respond to or prevent emerging diseases or other health concerns.

Programmatically, the functions of the PHD can be divided into two separate areas, (a) mandated activities, and (b) non-mandated activities. The California Department of Health, Title 17, Sections 1275-1276, under the California Code of Regulations (CCR) defines those mandated activities.

Some current examples of programs that allow the PHD to carry out mandated public health services include the following:

- Vital Records - *reviews and registers all births, deaths, and fetal deaths that occur in Stanislaus County,*
- Communicable Disease Surveillance and Investigation Program - *provides surveillance and case investigation of all reportable communicable diseases within Stanislaus County,*
- Tuberculosis Control Program – *surveillance, investigation, diagnosis, treatment, and encouraging preventive treatment of tuberculosis,*
- Maternal, Child, and Adolescent Health – *focuses on facilitating assessments of health and safety, identifying gaps or barriers to services, coordinating with community programs and policy advocacy efforts to benefit the women, infants, adolescents, and children within Stanislaus County,*
- Emergency Preparedness – *increase the communities ability to prepare and respond to public health emergencies,*
- Public Health Lab - *clinical and reference testing in the areas of bacteriology, mycology, parasitology, virology, as well as water and rabies testing, and*
- Immunization Clinic – *maintaining and improving current levels of vaccine-preventable diseases.*

Public Health Department (PHD) Revenue

Understanding the sources of revenue is critical to understanding how the PHD responds to the mandates in Title 17 and funding priorities of the county. Funding sources for 1980 are from five revenue source categories: (a) Realignment Revenue—*county contributions*, (b) State Revenue, (c) Federal Revenue, (d) Medi-Cal Revenue, as well as (e) Fees, Cash, Miscellaneous, Donations & Contributions Revenue.

STANISLAUS COUNTY PUBLIC HEALTH DEPARTMENT
Revenue Source Breakdown
Fiscal Years' 1980, 1990, 2000, 2007

	1980	1990	2000	2007
County Match Revenue	$ -	$ 88,748	$ 832,725	$ 1,395,688
County Contribution: Vehicle License Fees	$ -	$ -	$ 2,091,007	$ 3,338,096
Interfund Revenue	$ -	$ 1,224,379	$ 2,276,143	$ 2,471,319
Realignment Revenue	$ 1,008,768	$ 1,000,608	$ 1,413,130	$ 1,515,542
Children's and Families Commission	$ -	$ -	$ -	$ 1,638,023
Fees, Cash, Miscellaneous, Donations & Contributions	$ 161,800	$ 824,177	$ 972,722	$ 636,083
Private Foundation Grants	$ -	$ 20,150	$ 62,646	$ 54,145
State Funding	$ 969,019	$ 2,964,284	$ 4,972,131	$ 1,025,480
Federal Funding	$ 122,483	$ 758,796	$ 1,193,874	$ 8,194,744
Medi-Cal Revenue	$ 56,000	$ -	$ 143,373	$ 993,062
Medicare Revenue	$ -	$ -	$ 996	$ 47,275
3rd Party Payors Revenue	$ -	$ -	$ 6,511	$ 27,821
Total	$ 2,318,070	$ 6,881,142	$ 13,965,258	$ 21,337,278
% Change from prior period		197%	103%	53%

Source: Stanislaus County Public Health Department revenue data obtained from Final Budget Publication for Fiscal Year 1980 and 1990, as well as Monthly Operating Reports for 2000 and 2007.

Revenue Source & Allocation Highlights:

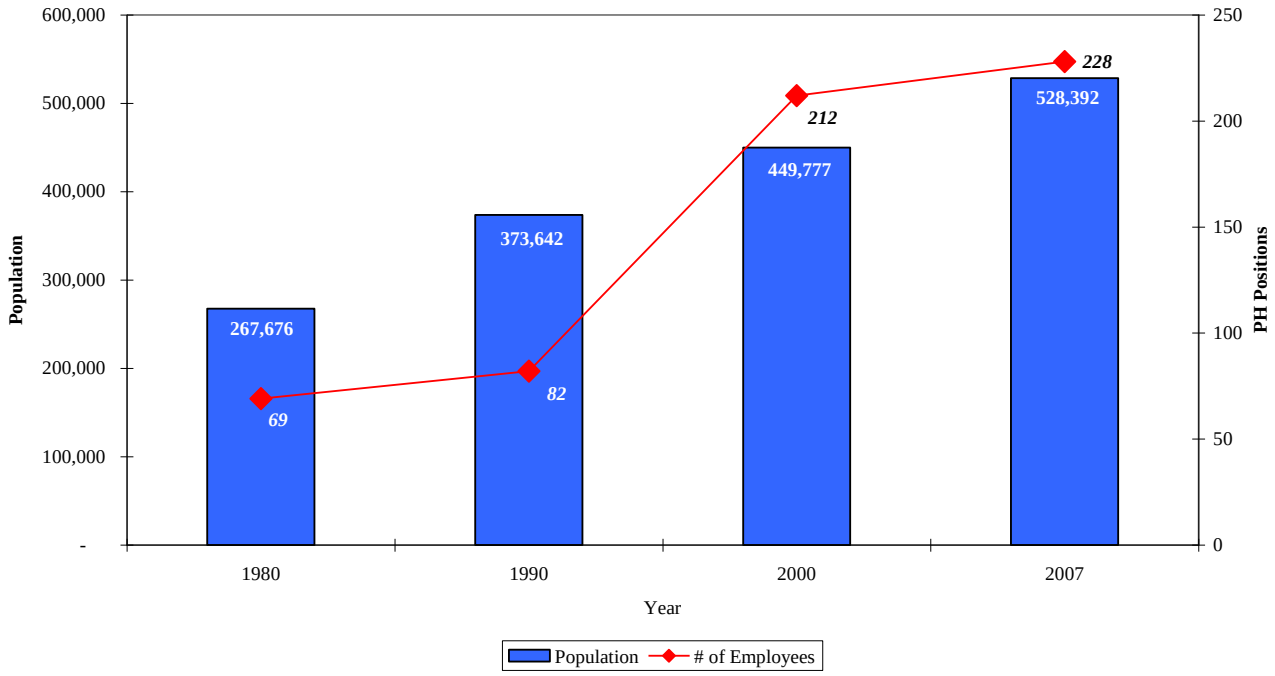
- For fiscal year 1979-80, all revenue was approximately $2,318, 070. Of this amount, realignment contributed the most revenue, followed by state revenue. Combined, state and federal revenue account for approximately 47%.
- For fiscal year 1989-90, all revenue sources combined were approximately $6,881,142.
- Compared with 1980, fiscal year 1990 had two additional revenue sources —i.e. county match and interfund revenue. 1990 revenue resulting from Medi-Cal could not be determined for this period. The state and federal revenue increased from 47% in 1980 to 54% in 1990. County contributions—i.e. county match, interfund revenue, and realignment revenue—totaled 34%, compared to 44% in 1980. For 1990, the "Fees, Cash, Miscellaneous, Donations & Contributions Revenue" category increased to 12% from its 1980 level of 7%.
- For 1990, the largest revenue allocation remains non-categorical, however this value decreased by 5% since 1980. This decrease is followed by an increase in revenue for the "Maternal, Child, and Adolescent Health" category by approximately 20%.
- Fiscal year 1999-2000 revenue totaled $13,965,258. The number of revenue sources increased from 1990 levels of seven, to a total of eleven within this period. New revenue sources include: "3rd Party Payors Revenue", "Medicare Revenue", "County Contribution: Vehicle License Fee" and reinstatement of Medi-Cal Revenue.
- Compared with 1990, total county contribution increased by 14% to 48% of total revenue. However, the state and federal revenue dropped by 11% to 43% collectively.

- In 1996, the Public Health Department and Stanislaus County Health Services Agency (HSA) combined, resulting in merger of public health clinics, public health laboratory, and ambulatory services. Specific services, such as family planning and the obstetrics clinic were included within this integration.
- For fiscal year 1999-2000, non-categorical revenue decreased from 38% to 18%. A new revenue allocation area emerged more specific to chronic disease related activities, such as tobacco control and education.
- Total revenue for fiscal year 2006-07 was $21,337,278, this included Children's and Families Commission as a new revenue source, as well as new funding for Emergency Preparedness activities. While there are many contributing factors to the increase in federal revenue from 2000 – 2007, the single most significant factor for the large increase in federal revenue since 2000 is Emergency Preparedness funding.
    1. The newest revenue source in 2007 was the Children's and Families Commission (CFC), which contributed 8% of total revenue.
    2. For 2007, Medi-Cal also increased by 4% to 5%, from its 2000 levels and more than doubles its 1980 contribution levels.
    3. Emergency preparedness accounts for a 6% of all revenue allocation. Non-categorical revenue has decreases to 9% of revenue allocation. "Maternal, Child, and Adolescent Health" category represents 39% of total revenue allocation. Chronic disease revenue allocation increased by 1% in 2007.

Public Health Department Workforce

An organization's workforce is vital to meeting both the organizational mission, as well as the expectations of the public. While the Stanislaus County population has increased since 1980, so has the public health workforce. The PHD has the responsibility to respond and address the many health and environmental concerns of the community, as well as federal and state mandates. The need for the different PH professionals is also dependent on the issues and demands of the County. While population size is one contributing factor for the PH workforce size, there is not a direct linear relationship, due to factors such as health indicators, environmental concerns, as well as cultural and socioeconomic factors.

Figure #2
Stanislaus County Public Health Department
Budgeted Staffing Allocation and Population Comparison
Fiscal Years' 1980, 1990, 2000, 2007



The above graph illustrates the public health filled positions and county population

Conclusion

As the Stanislaus County Public Health Department approaches its 79th anniversary, it has experienced tremendous growth. However, it will be necessary for the PHD to integrate the following concepts as it strives to meet the public health needs of the Stanislaus County community in the 21st century:

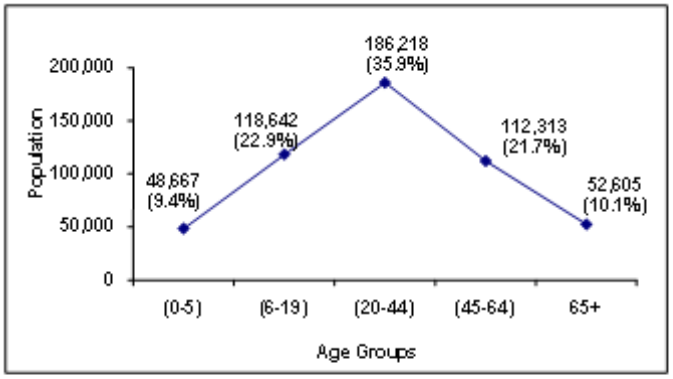
- Positioning to continue to be more proactive in planning efforts in addressing community public health issues,
- Becoming more efficient in both the delivery of services and coordination of programs,
- Evaluating and applying best practices, as well as public health business models for monitoring both program levels of performance, and financial performance,
- Evaluating approaches to obtain increasing levels of non-governmental funding,
- Evaluating approaches to creating synergies within the public health department,
- Focusing on the future of the public health department—i.e. succession planning, leadership development, public health accreditation, and overall strategic planning in identifying PHD priorities.

It is also crucial that the PH workforce be developed according to the above principles, to ensure that the Department is competent to respond to the public's needs and demands.

CHAPTER 2: OVERVIEW OF STANISLAUS COUNTY DEMOGRAPHICS AND POPULATION

Stanislaus County Demographic Characteristics

The California Department of Finance population projection for the year 2006 (in its 2003 projection) was a total population of 518,445, with the age group of 20-44 reaching 40%, those over 65 at 10%, while the age group of 0-5 at 9.4%. This indicates that our County's population is aging.

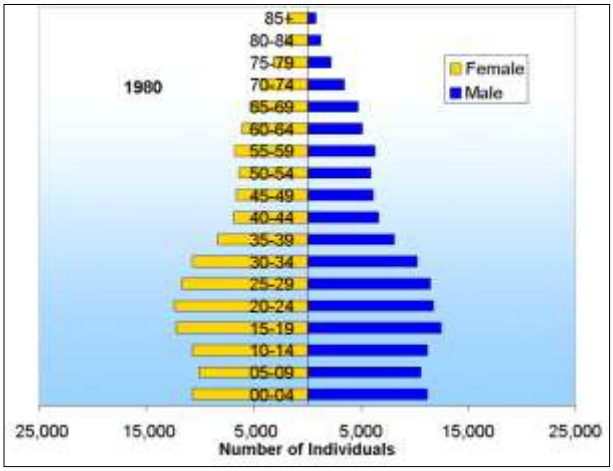


Source: 2003 California Department of Finance Population Projections for 2006

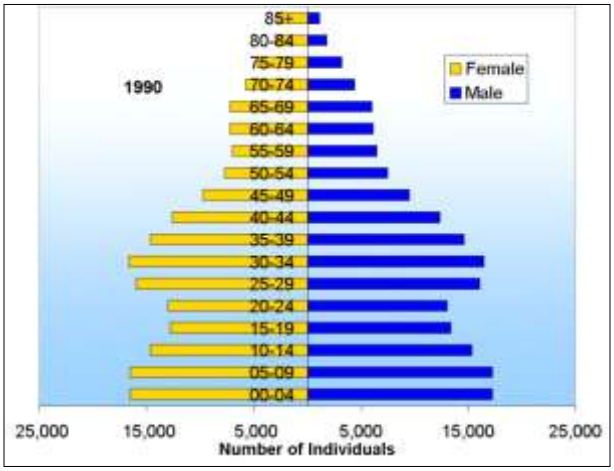
Stanislaus County Demographics by Age and Gender[2]

The following charts reflect the changes in the age and gender of the population in Stanislaus County from 1980 to 2000

Age and Gender of Stanislaus County Residents, 1980

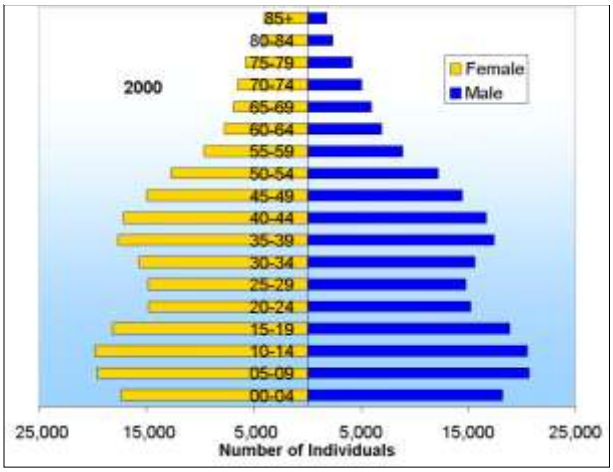


Age and Gender of Stanislaus County Residents, 1990



[2] US Census Bureau, 1980, 1990, and 2000

Age and Gender of Stanislaus County Residents, 2000



Economic and Educational Characteristics

Educational Attainment (25 years and older)

	High School Diploma	Bachelor's degree or higher
Stanislaus	73.8%	15.4%
California	80.1%	29%

- A fewer percentage of Stanislaus residents hold High School Diplomas or Bachelor's degrees compared to the State percentages

Employment Status (Civilian labor force, 16 years and older)

	Unemployed
Stanislaus	9.8%
California	6.6%

- Stanislaus County has a higher percentage of unemployed residents compared to the State

Median Household Income

	Median Income
Stanislaus	$48,566
California	$56,645

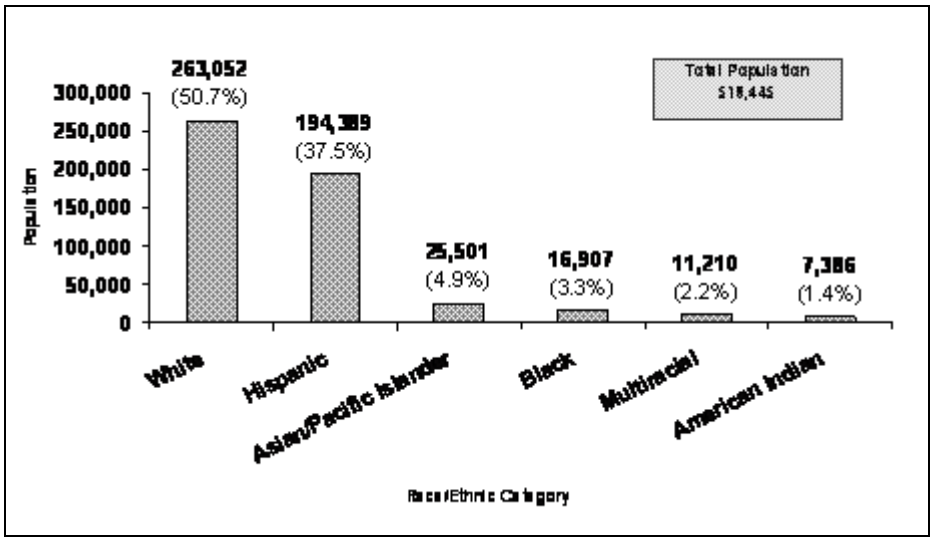
- Stanislaus median household income and mean household income were both lower than the State.

Federal Poverty Level (FPL)

	Families under FPL	Families with children under FPL
Stanislaus	11.2%	16.4%
California	9.7%	14.3%

- Higher percentages of Stanislaus families and families with children have incomes under the Federal Poverty Levels
    - 16.4% were families with children under 18 years

Stanislaus Race and Ethnicity



Source: 2003 California Department of Finance Population Projection for 2006

- Stanislaus County racial and ethnic characteristics parallel State and National diversity trends

Health Insurance Coverage

- 22.3% of the Stanislaus population was eligible for Medi-Cal.[3]
- 19.3% of Stanislaus County population was uninsured.[4]

[3] California Department of Health Services: Health Data Summaries for California Counties, 2006
[4] US Census Bureau, Health Insurance for California Counties, 2000

Birth Data

	Total Number of Births	Birth Rate	Low Birth Rate (%)	Pre-term Birth (%)	Adequate Prenatal Care (%)	Total Population	Total Women (15-44 yrs)
Stanislaus							
2004[5]	8,058	16.1	7.09	N/A	N/A	498,987	110,113
2005[5]	8,445	16.6	6.3	11.5	77.4	508,636	112,075
2006[6]	8,728	16.8	6.5	11.3	77.2	518,445	114,086
California							
2004[5]	N/A	N/A	N/A	N/A	N/A	36,376,411	7,856,111
2005[5]	550,928	14.9	6.9	10.8	83.1	36,854,224	7,928,685
2006[6]	564,327	15.1	6.9	10.7	83.8	37,334,968	8,000,944

- The birth rate for Stanislaus is higher than that of the State. The percentage of pre-term birth is higher in Stanislaus, and a lower percentage of women received adequate prenatal care when compared to the State.

Definitions:
Total Births = Stanislaus County Residents ONLY
Birth Rate = Total number of births / Total population per 1,000
Low Birth Rate = Weight at birth <2,500 grams
Pre-term Births = Born at <37 weeks of gestation
Adequate PNC = Number of prenatal care visits completed by gestational age (based on Kessner Criteria)

[5] California Department of Health Services, Birth Statistical Masterfile: 2004, 2005
[6] California Department of Public Health, Birth Statistical Masterfile, 2006

CHAPTER 3: CHRONIC DISEASE PREVENTION

The three leading causes of death in the 1900s were pneumonia and influenza; tuberculosis; and gastritis, enteritis and colitis. Today, the three leading causes of death and disability in the United States are heart disease, cancer and stroke. These and other chronic diseases are characterized by a complex interaction of risk factors (behavioral, social and economic conditions, environmental) and chronic conditions.

Chronic diseases account for 70% of all deaths in the U.S. These diseases also cause major limitations in daily living for almost 1 out of 10 Americans or about 25 million people. The medical care costs of people with chronic diseases account for more than 75% of the nation's $1.4 trillion medical care costs. In 2001, approximately $300 billion was spent on all cardiovascular diseases. Over $129 billion in lost productivity was due to cardiovascular disease. The direct medical costs associated with physical inactivity were nearly $76.6 billion in 2000. Nearly $68 billion is spent on dental services each year.

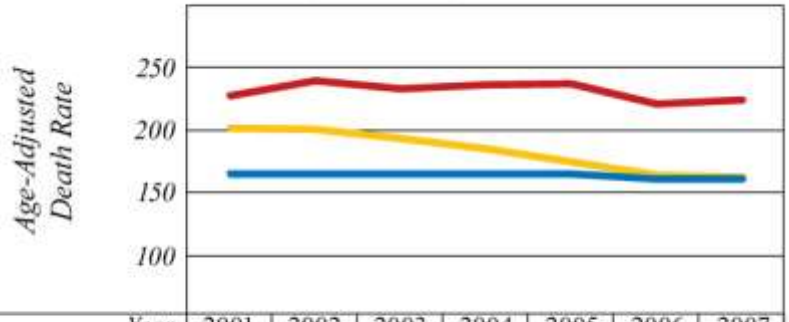
Several historical advances in chronic disease control programs illustrated key concepts useful to today's public health prevention efforts. In 1949, the Farmington Heart Study was initiated to better understand the progression of heart disease and its risk factors. In 1950, researchers identified cigarette smoking as the cause of lung cancer and chronic bronchitis. This led to intensive and aggressive public health interventions to reduce smoking rates and secondhand smoke exposure. Cancer reporting first began in New York in 1911. By 1986, the National Cancer Institute had started to enhance its cancer control efforts through its Technical Development in Health Agencies Program. Other crucial elements of chronic disease prevention programs included the development of surveillance systems such as the Behavioral Risk Factor Surveillance System and the National Breast and Cervical Cancer Early Detection Program.

Heart Disease and Obesity

Over the last few years, Stanislaus County is ranked among the three worst counties in the State in death rates due to heart disease.

Age-Adjusted Death Rate Due to Coronory Heart Disease

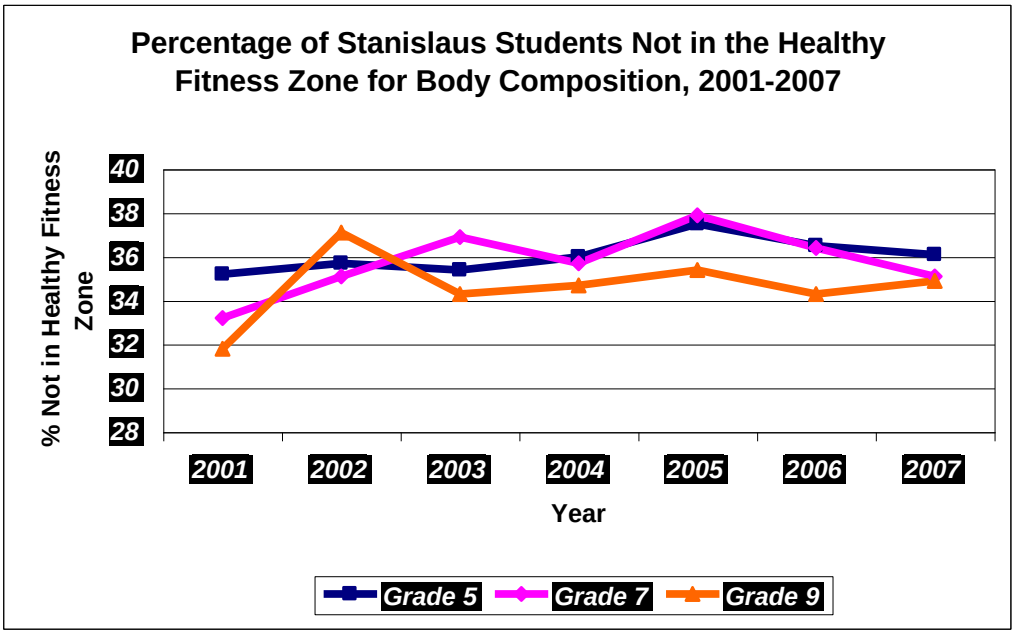
Stanislaus County and California, 2001-2007



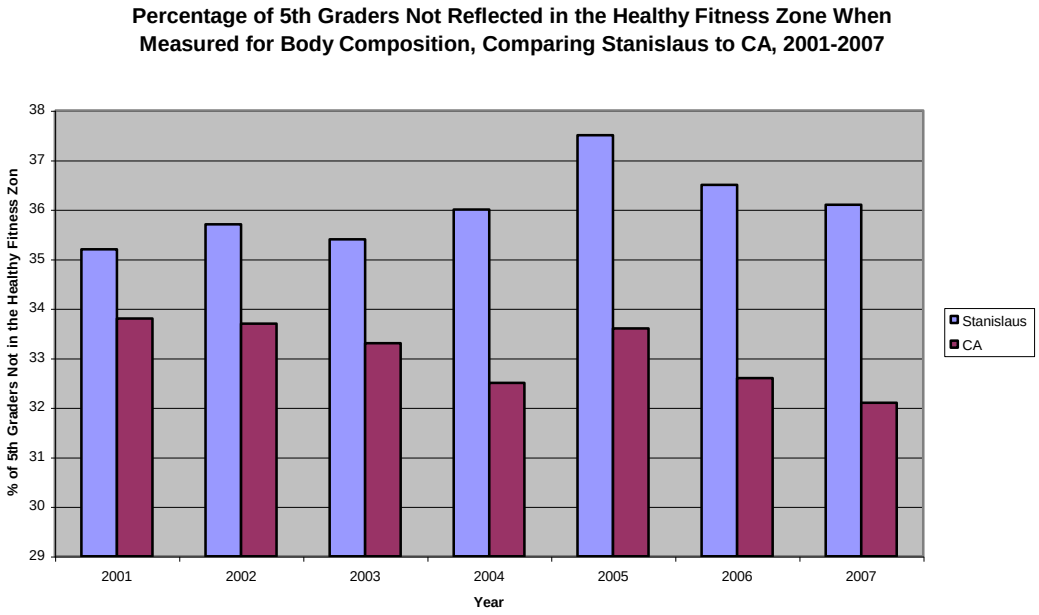
Year	2001	2002	2003	2004	2005	2006	2007
Stanislaus County	228.8	240.7	234.5	237.1	238.2	222.3	225.3
California	202.3	201.5	194.3	186	175.9	164.7	163.10
HP 2010 Goal	166	166	166	166	166	162*	162*

** HP 2010 Goal decreased from 166 - 162 during the Midcourse Review.*

Obesity and physical inactivity are the major health risk factors leading to most chronic diseases. In Stanislaus County, it is estimated that 60% of the adults are overweight, while over 34% of the County's 5th, 7th, and 9th grade school children are in the unhealthy fitness zone for body composition, indicating that they can be determined as overweight. The graph below indicates the rates of overweight 5th, 7th and 9th graders in Stanislaus County remain high in the past several years.



Compared to the State's average, a higher percentage of Stanislaus County students were not reflected in the Healthy Fitness Zone when measured for body composition. The following graph shows the Stanislaus County 5th graders compared to the State's average.



Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. Adopting healthy behaviors such as eating nutritious foods, being physically active, and avoiding tobacco use can prevent or control the devastating effects of these diseases. Engaging in regular physical activity is associated with taking less medication and having fewer hospitalizations and physician visits. Fruit and vegetable consumption is associated with a reduced risk of developing heart disease, some cancer, and type 2 diabetes. Regular physical activity performed on most days of the week reduces the risk of heart disease and of developing high blood pressure.

With the increased prevalence of chronic diseases and the changing demographic profiles in Stanislaus County, the Public Health Department's responsibility of protecting and promoting the health of the public is continuously expanding. Unfortunately, funding from the State and Federal government remains largely categorical and limited for prevention services.

21st Century Public Health Prevention Strategies

Decades ago, the concept of prevention was educating the individual, providing the individual with information and knowledge to be healthy. The main activities then were to provide educational flyers and pamphlets, conduct one on one counseling, and teach classes on healthy behaviors. For the 21st century public health, prevention efforts are beyond the education model. Individual education is only effective when people start to put into practice their acquired knowledge, and the practice is supported by the environment and society itself.

Since the last decade, the Public Health Department has moved to a more comprehensive and coordinated effort in addressing chronic disease prevention. Programs and initiatives are being planned and implemented utilizing the Spectrum of Prevention Model, where multiple levels of intervention are engaged. These levels are complementary and when used together produce a synergistic effect where greater effectiveness is achieved than would be possible by implementing any single activity. The different levels or "spectrum" not only include the individual, but also providers, the community, coalitions, organizations, and legislation. This practice can be challenging when programs are still being funded categorically, with very specific program and funding requirements and guidelines. Regardless, the Public Health Department leadership team continuously strives to look for ways to coordinate services, blend funding, while meeting funder requirements and at the same time, preventing diseases and promoting the health of the community.

Prevention Programs

Currently, these following programs and initiatives play a direct and important role in addressing obesity and promoting healthy lifestyle choices.

<u>Child Health and Disability Prevention Program (CHDP)</u>

Funded by the State, CHDP is a preventive program that delivers periodic health assessments and services to low income children and youth in Stanislaus County. CHDP program staff works with providers and families to assist with medical appointment scheduling and referrals, the provision of health information and resources, and provider in-service trainings. A more detailed description of this Program's services and activities is listed in Chapter 4.

Healthy Birth Outcomes Project (HBO)
Funded by the Children and Families Commission, this Program's goal is to improve birth and child health outcome. This program provides case management, community education and awareness, and provider networking and outreach activities.

Healthy Eating and Active Living – Community Health Initiative (HEAL-CHI)
Funded by Kaiser Permanente, the overall goal of this initiative is to create an environment that supports healthy eating and physical activity in an effort to decrease obesity and diabetes for residents in the West Modesto area. Program activities involve a multisectoral approach, to affect systems change in the schools, the worksite, the health care sector, and the neighborhood environment.

California Nutrition Network (CNN)
Funded by the US Department of Agriculture (USDA) Food Stamp Program, the goal of the Network Program is to create innovative partnerships so that low-income Stanislaus County residents are enabled to adopt healthy eating and physical activity patterns as part of a healthy lifestyle. The Network seeks to increase residents' consumption of fruits and vegetables, and their daily physical activity. Program activities include the delivery of nutrition education sessions to parents and care givers, and social marketing strategies to increase public awareness.

Woman, Infants, and Children Supplemental Nutrition Program (WIC)
Funded by the US Department of Agriculture (USDA), the goal of the WIC program is to decrease the risk of poor birth outcomes and to improve the health of participants during critical times of growth and development. To meet this goal, program activities include the provision of nutrition education, breastfeeding promotion, medical care referrals, and specific supplemental nutritious foods, which are high in protein and/or iron.

These programs have an overarching goal of promoting the optimal health status for children and women, through behavior change, and adopting healthy eating and active living lifestyles. Despite the categorical funding streams, and the specific program requirements by each of the funders, PHD staff has taken the effort to coordinate the planning and implementation of respective program activities to complement and support each other, maximizing resources and minimizing duplication.

Accomplishments
The following are highlights of the accomplishments of this coordinated effort in heart disease and obesity prevention, as these activities relate to the Spectrum of Prevention.

Strengthening individual knowledge and community education

- The Family Challenge is a 10-week series of nutrition education classes provided to parents/caregivers by the Nutrition Network Program. These classes are conducted at School Readiness sites that are funded by the Stanislaus County Children and Families Commission. In the past year, the 10-week series was conducted at 3 sites, with a total participation of about 60 parents and caregivers who graduated from the program. Post tests indicated that class participants had increased fiber consumption, increased water intake, and increased physical activity levels and/or duration.

- Network and WIC staff provides food demonstration sessions at the Food Stamp Program waiting area, on a regular basis. Healthy recipes promoted by the Food Stamp Program are being used, teaching Food Stamp recipients how to cook and eat healthy, while on a low cost budget.

Educating providers

- Lectures on Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity were provided to the Health Services Agency family medicine residents and health care providers. This workshop was sponsored by the HEAL Project, and conducted by a physician from Kaiser Permanente, providing information on the standards of care in the prevention and treatment of childhood obesity. Over 26 providers and physicians attended. A subsequent lecture on effective communication between physicians and patients was also provided to the same audience.
- The CHDP Program staff trained 18 providers on using the Body Mass Index (BMI) as a routine assessment for children's weight.
- Network and WIC staff were invited to be the keynote speakers at the Stanislaus County Children and Families Commission 5th annual conference, with the theme of "A Healthy Beginning". Staff conducted an interactive session on healthy eating and active living, to over 350 childcare providers, empowering them with information on how to adopt healthy living behaviors for the children as well as for themselves.

Fostering coalitions and networks

- Throughout 2007, the Heart Education Awareness Resource Team (HEART) Coalition continued to focus on addressing the childhood obesity epidemic in Stanislaus County. This year, the HEART Coalition is sponsoring the *Walk it Out* Program, in five Modesto City School Elementary After School Programs. Children in the After School Program are encouraged to walk at least 15 minutes a day, 3 times a week. *Walk It Out* will continue throughout the school year, which ends in May of 2008. Children are awarded a variety of incentive items, such as water bottles, T-shirts, when they reach specific milestones. The Coalition hosted a kick off event in September of 2007, for over 500 children from the five schools, with members participating in a variety of physical activities with the children. This program is so popular and powerful that it has been adopted by all of the Modesto City School after school programs.
- The Stanislaus County Nutrition Action Plan partners, which include all the food assistance programs, continue to collaborate on their common goal of increasing fruit and vegetable consumption for each of their respective program participants. As a result, Modesto City Schools, Turlock Unified School District, and Salida Union School District have all revised their school lunch menus to include more salads and low fat foods. They have also reported an increase in their school lunch participation. The partners are currently working on a project to promote the consumption of school breakfast.

Mobilizing the community

- Through the HEAL-CHI Project, community neighborhood stores in the West Modesto area are being encouraged to sell more fresh fruits and vegetables, to increase access of fresh produce for community residents. "Healthy Produce Baskets" are being provided to these corner stores to help them start the business. All stores have reported positive sales on the

produce items. Their reported challenge, being small business owners, is the ability to purchase fresh produce at wholesale cost.

- Many residents of West Modesto have banded together, working collaboratively with the City of Modesto, regarding the construction of a walking trail over the Modesto Irrigation District (MID) canal in their neighborhood. MID has committed the use of the land. The Neighborhood Collaborative, as the integral component of the HEAL-CHI Project, is currently exploring funding opportunities to help construct the trail.
- Having children walk to school is an effective way to encourage physical activity for both parent and child, to prevent obesity. The Safe Communities Coalition, sponsored by the HEAL-CHI Project, has promoted the Walk to School Day event in over ten schools this past year. This year, they are furthering this cause by working with the community to establish a "Walking School Bus" in a number of neighborhoods, where parents walk their children to school on a daily basis.

Changing organization practices

- There is a current focus on worksite and employee wellness, to promote and support healthy behaviors at work. As the Board of Supervisors declares Employee Health Week every February for the past few years, HSA has been in the forefront in promoting a healthy workforce. The Nutrition and Health Promotion staff of the PHD plans and conducts the annual Healthy HSA campaign, where helpful and applicable information and resources are being shared with employees. This year, a Wellness Challenge is being included, to spark friendly competition. All information and resources are available for all county employees, through the HSA website.
- HSA is leading the Countywide Employee Wellness Committee to develop a countywide employee wellness initiative, which will include programs and policies. This initiative is intended to be unveiled some time in the summer of 2008.
- The HEAL-CHI Project staff is in discussion with clinics in the community as well as HSA's clinics, on adopting certain Standards of Care in the treatment and secondary prevention of chronic diseases such as diabetes and heart disease. This standard includes the measuring of Body Mass Index of patients as a routine assessment, and pre-diabetes screening.

Influencing policy and legislation

- PHD staff assisted the different school districts in the development and implementation of their respective School Wellness Policy.
- Nutrition and Health Promotion program staff supported local schools to be Senate Bill 12 and Senate Bill 965 compliant. SB 12, the School Junk Food Ban, is the latest legislation on setting nutrition standards on foods sold at schools, whereas SB 965 is the High School Soda Ban, setting school beverage standards for high schools, and eliminating the sale of soda and other sweetened beverages on high school campuses in California.

Oral Health

Dental disease is an emerging, yet most common, chronic disease of early childhood. It is five times more common than asthma and seven times more common than hay fever. The U.S. Surgeon General has called dental disease a silent epidemic and has urged public health agencies to make oral health a community priority. The Surgeon General has also emphasized the need to

change perceptions regarding oral health and disease so that oral health becomes an accepted component of general health, especially for children.

In 2005, the Dental Health Foundation conducted a statewide oral health screening of more than 21,000 children at 186 elementary schools throughout California. The results were published in the Foundation's report, *California Smile Survey*, in February 2006. The report found that by 3rd grade almost two-thirds of the children surveyed in California were affected by dental disease.

Stanislaus County is no different. The Stanislaus County Head Start Program reported that of the 1,948 children (ages 3-5) whom had dental examinations, 950 needed dental treatment, which equates to 48% during the 2006-07 program year.

Current (2007) Stanislaus County Women, Infants, and Children (WIC) Program data indicates that of the 11,608 children screened for eligibility, 11% (1,094) were identified to have severe dental caries. Severe dental caries is defined as caries that impair the ability to ingest food in adequate quantity or quality. In 2005, 708 were identified during WIC enrollment, which equates to 5%. The chart below shows age specific data.

Age	1 yr	2 yrs	3 yrs.	4 yrs	5 yrs	Total
# of WIC children with dental caries	53	174	358	477	32	1,094
% of WIC children with dental caries	5%	16%	33%	43%	3%*	100%

August 2007 WIC Program participants with severe dental caries by age

* Children are eligible for WIC services until their 5th birthday.

According to a 2007 publication of the Children Now, Oral Health Policy Brief – *A Mother's Oral Health Profoundly Impacts the Health of Her Child*; there is strong correlation between gum disease and premature labor. 18% of premature births are attributable to poor oral health in mothers. Pregnant women with poor oral health are seven times more likely to have a premature and/or low birth weight delivery. Children of mothers with poor oral health are five times more likely to have oral health problems. Stanislaus County's infant mortality rate is higher for overall infant deaths, Hispanic infant deaths, and White infant deaths, than the State and National rates.

Despite these alarming statistics, there is very limited funding to respond to the need for oral health.

Dental Disease Prevention Program (DDPP)

Currently, this is the only public health program addressing oral health. Funded by the State Department of Public Health since the 80's, the goal of this program is dental disease prevention for school children. Program staff works with elementary school teachers to provide dental education to elementary and pre-school children, teaching them how to brush and floss, and providing them with information on oral health. Funding has been level this past two decades, and is only targeted for low-income schools. Current funding levels allow the participation of 39 schools (26 elementary and 13 pre-schools), reaching 5,540 students. The Governor's budget has proposed a 10% reduction to this funding level for fiscal year 2008-09.

A few years ago, the State added a sealant component to this Program, where 10% of the participating students are to be screened for placement of dental sealant on their permanent molars. This component can only be implemented at one school per year. Dental sealant is an effective way to prevent cavities. With additional funding from the Health Services Agency Foundation, two schools were able to participate in 2007. A total of more than 550 students were eligible to have their molars sealed (the molars have to be cavity free), and a total of more than 1,500 teeth were sealed.

Stanislaus County Oral Health Advisory Committee

One DDPP program requirement is the formation of a local oral health advisory committee, to provide guidance on oral health activities. Committee members include several local dentists, school nurse, Head Start Program nurse, community dental clinics, the PH Officer, and other PH programs that target children. The Committee has been extremely active this past year, implementing the following activities:

- Submitted three grant proposals for oral health awareness and prevention. Unfortunately, with oral health funding in great demand, these proposals were not funded. Nonetheless, Committee members are preparing to submit them again to other funding sources.
- Delivered an alert broadcast to all local health care providers and community stakeholders on the importance of oral health being perceived and treated as an integral part of a child's and a woman's general health.
- Brainstormed on public awareness messages to be used.

Legislation

Assembly Bill 1433, signed into law in September 2006, established the Student Oral Health Assessment Requirement which mandates that all children entering kindergarten must provide documentation of an oral health assessment performed by a licensed dentist or other licensed or registered dental health professional. Although parents can waive this requirement with justification, it is hoped that health and school officials will be able to collect the assessed information, and have access to county specific oral health data as a result. This data can be used to support development of health policies aimed at improving access to dental care for children in Stanislaus County.

Asthma

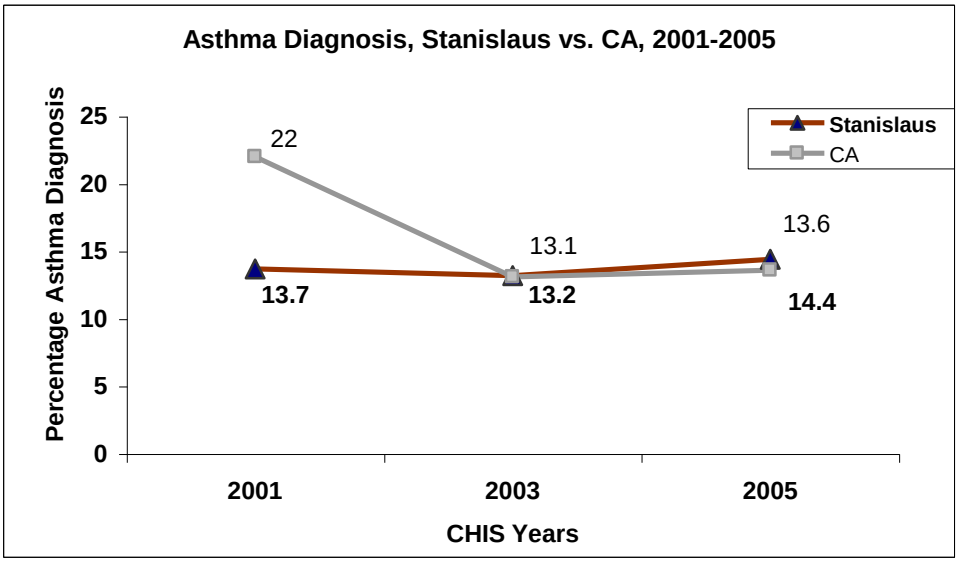
Asthma was first described in medical literature during the mid 1800's as a "rare disease". Asthma was initially thought to be a psychosomatic disease but was later proven to be a physical condition. To treat the asthma symptoms, use of bronchodilators was introduced in 1901. It was not until the 1960's that anti-inflammatory medications were added to treatment regimens when the inflammatory component of Asthma was recognized.[7]

In Stanislaus County, Asthma diagnoses have continued to increase. According to the 2005 *California Health Interview Survey*, 71,000 Stanislaus County residents of all ages have been diagnosed with Asthma, compared to 62,000 in 2003.

[7] http://www.aafa-ca.org/asthma_history.php

Ever Diagnosed with Asthma Stanislaus versus California (all ages) - 2001, 2003, 2005

Has Asthma		
2001	2003	2005
Est. # (%)	Est. # (%)	Est. # (%)
61,000 **(13.7)**	62,000 **(13.2)**	71,000 **(14.4)**



Stanislaus percentages (%)* ***bolded*
Source: 2001, 2003, 2005 California Health Interview Survey

With a membership of 80 representatives across 40 agencies, the Stanislaus County Asthma Coalition works diligently on promoting awareness and management of asthma. One successful and most collaborative projects developed and implemented by the Asthma Coalition is the Asthma Friendly Flags Program. Different colored flags designating the different levels of air quality had been designed and provided to schools within the County. The colored flags are flown everyday, according to the air quality of the day. These flags alert school children and the community of the day's air quality, so those who have asthma or allergies will be able to take precautions accordingly. Currently, 160 schools representing 13 of the County's 26 school districts are participating.

In 2007, the Asthma Coalition partnered with the Stanislaus County Children and Families Commission to educate childcare providers about the role of environmental factors that exacerbate asthma. Through continued partnerships, the coalition will continue to focus on the following activities:

- Community outreach activities such as health fairs, school events, conferences, trainings, and presentations
- Education for families about the early warning signs of asthma, environmental triggers, and what to do with the onset of asthma
- Education for physician offices and clinics about the new National Heart, Lung, and Blood Institute (NHLBI) asthma guidelines for improving diagnoses and management of asthma

- Coordination of activities with school staff and parents to promote the Asthma Action Plans so children can better manage their asthma

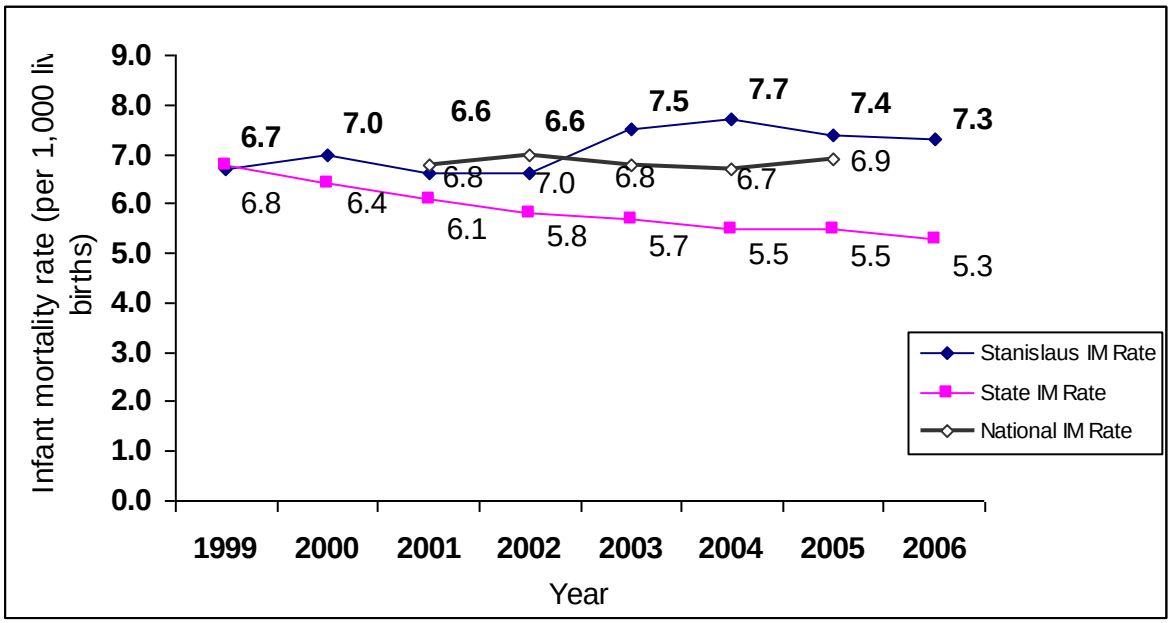
In summary, with limited and categorical funding, the PHD has taken strides to coordinate and collaborate efforts in chronic disease prevention, within the community, as well as within the Agency. These prevention efforts and strategies meet the Board's priorities of a Healthy Community, Effective Partnerships, and Efficient Delivery of Public Services. In respect to the Core Functions of Public Health, these projects address the three (3) functions of: Assessment, Assurance and Policy Development (Advocacy). Of the 10 Essential Services, the following are identified:

- Monitor health status to identify and solve health problems
- Inform, educate and empower people about health issues
- Mobilize community partnerships and action to identify and solve health problems
- Develop policies and plans that support individual and community health efforts
- Enforce laws and regulations that protect health and ensure safety
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.

CHAPTER 4: INFANT MORTALITY AND CHILDREN'S HEALTH

Infant Mortality

Infant mortality (IM) is an important measure of a nation's health and a worldwide indicator of health status and social well-being[8]. It represents the health of a large segment of the population in addition to being a health predictor for the next generation. The infant mortality rate, which is the rate at which babies die before their first birthday, should be no more than 4.5 deaths per 1,000 live births in accordance with the National Healthy People 2010 objective. In the United States, the rate has continued to steadily decline over the past several decades, from 26.0 per 1,000 live births in 1960 to 6.8 per 1,000 live births in 2004.



The IM rate in Stanislaus was 8.0 per 1,000 live births in 1989, 9.3 per 1,000 live births in 1992, and continued to decline to 7.3 per 1,000 live births in 2006. Overall, Stanislaus IM rate is higher than both of the National and the State's IM rate.

Historically, the leading causes of infant mortality were congenital anomalies, prematurity, low birth weight and sudden infant death syndrome. The decline in gestation- and low birth weight-specific mortality over the last several decades can be attributed to improvements in prenatal and infant care. Other programs that have helped target the nationwide infant mortality problem include: improving access to prenatal care and childhood immunization, educating women on the importance of folic acid, and promoting the 'Back to Sleep' campaign.

To address the high rate of Infant Mortality, the Stanislaus County Health Services Agency/ Public Health Division (PHD) has been involved in the following projects:

- The Healthy Birth Outcomes Project funded by the Stanislaus Children and Families Commission increased from 6 community sites to 10 in fiscal year 07-08. These groups

[8] UNICEF: "State of Worlds' Children." Widepedia.com

continue to provide outreach to pregnant women, sharing key messages for a healthy pregnancy in addition to connecting them to needed services. The weekly support group and education has shown increase in positive behavior changes due to their participation.

- The Stanislaus County Maternal Child Adolescent Health Advisory Committee is a multidisciplinary group that shares the goal of assisting women to have healthy, full term infant births. This group identifies and discusses issues contributing to fetal/infant mortality and morbidity, then develops and implements strategies to address the concerns.
- The PHD received funding from Stanislaus County Children and Families Commission in 2005 for the Infant Mortality Study. The completion of this two-year study in 2007 resulted in presentation of findings to the local health care system community, including providers, health organizations, and participants, at the annual March of Dimes Perinatal Conference held in Modesto. The study team used a comprehensive approach including a variety of different research methods. These research methods were both retrospective (analysis on the birth/death cohort data and chart abstraction) and prospective (Fetal Infant Mortality Review interviews). The findings from all sources were combined to better understand the infant mortality problem in the county. In 2006 the study added chart abstraction on a control group of healthy births so that comparisons could be made between those experiencing a fetal/infant death and those with healthy birth outcomes.

  The following factors were found to be associated with fetal and infant mortality in Stanislaus County:
  - Prematurity: Infants born at a low gestational age and birth weight.
  - Inadequate prenatal care (PNC), often due to either late entry into care or because regular PNC is not maintained during the pregnancy.
  - Possible gap in prenatal knowledge such as signs and symptoms of preterm labor and what to do in case of loss of fetal movement.
  - Vulnerable populations: Two groups of women are more susceptible to certain kinds of infant death. Single women are more likely to experience an infant death with 24 hours of the birth, and Hispanic women are more likely to experience a fetal death.
  - Drug use during pregnancy: Of women who had a laboratory toxicology screening done, 28% were positive for illicit drug use. There are possibly many more pregnant women using drugs because few women are tested and drugs of abuse typically have a short half-life and are not detected after a few days after use. If all women were tested on a routine basis during their entire pregnancy more positive tests would likely result.

  Recommendations from the study include the following:
  - County-wide universal substance use and sexually transmitted infection (STI) screening throughout pregnancy.
    - STI screening is recommended even though the study found minimal prevalence of STI's in the study sample. Discussions with physicians have highlighted the relationship between chlamydia and the county's high preterm delivery rate.
    - Educating providers to elicit drug information during a PNC encounter to better assess and intervene when a woman is substance using.
  - Enhancing prenatal care services: PNC needs to encompass more than the normal ten minute "tummy check" and provide a social support component, address major life issues, and involve the woman's partner.

- Community education: Involving an educational media campaign to share key messages for healthy pregnancies.
- Provider Education: Validate current practices and provide support where appropriate to providers and staff to gain confidence in eliciting responses from pregnant women about substance use information and address the many conditions that affect the pregnancy outcome for mother and infant.

Focused resources are needed over the next few years in order for change to be realized. Program planning and other efforts include:

- Universal screening protocols and practices for substance use and Sexually Transmitted Infections being initiated by providers.
- Research initiated regarding reoccurring infections, treatment and impact on prematurity and infant mortality.
- Evaluation of Maternal Child Adolescent Health activities and restructuring of activities designed to effect lasting change. Efforts in helping to identify and refer women into health care in early pregnancy had begun with the HBO groups.
- The MCAH Advisory Committee continues to address the issues brought forth by the community and the results of the Infant Mortality Study and has plans in place to pursue provider education and funding for a community education campaign.
- Encourage and support the implementation of the Centering Pregnancy Program that provides group prenatal care and expanded education and support services to pregnant women. This Program has been piloted at the HSA's Turlock Medical Office and is now beginning at the Paradise Medical Office, through the Family Medicine Residency (physician training) Program.

The Core Competencies addressed through Infant Mortality Prevention activities include: Assessment, Assurance and Policy Development (Advocacy). Nine (9) of the 10 Essential Public Health Services identified within these infant mortality programs are:

1. Monitor health status
2. Diagnose and investigate
3. Inform and educate
4. Mobilize community partnerships
5. Develop policies and plans
6. Link people to needed services
7. Assure competent workforce
8. Evaluate health services
9. Conduct research

Child Health & Disability Prevention (CHDP) Program

Child Health & Disability Prevention (CHDP) is a preventive health program serving California's children and youth. CHDP makes early health care available to children and youth with health problems as well as to those who have no reported health problems. CHDP provides periodic preventive health services to Medi-Cal recipients based on the federally mandated Early Periodic Screening Diagnostic and Treatment (EPSDT) Program. All California Medi-Cal recipients from birth to age 21 are eligible for the health assessment.

Additionally, CHDP provides periodic preventive health services to non-Medi-Cal eligible children and youth from birth to age 19 whose family income is equal to or less than 200% of the federal income guidelines. They are eligible for health assessments based on the same schedule as Medi-Cal eligible children and youth. California children enrolled in Head Start and State Preschool programs are also eligible for CHDP health assessments.

The CHDP program is funded by and has standards established at the State level. Target population, health assessments, and active CHDP providers form the basis for each local CHDP program's fiscal year funding, which is an annual state appropriation. The program is operated at the local level by county health departments.

Local CHDP programs are responsible for resource and provider development to ensure that high quality services are delivered and available to eligible children and youth. In addition, the program outreaches to the target population to encourage their participation in the program; and promotes the concept of prevention services to community agencies and residents. The local program is also responsible for carrying out community activities which include planning, evaluation & monitoring, case management, informing, providing health education materials, provider recruitment, quality assurance, and client support services such as; assistance with transportation, medical, dental & mental health appointment scheduling and encouraging the completion of the application for ongoing health care coverage.

<u>Foster Care and CHDP</u>
The Health Care Program for Children in Foster Care (HCPCFC) is a program within the local CHDP program. The required administrative activities of budget preparation and management, nursing supervision, and implementation of the HCPCFC Memorandum of Understanding (MOU) are the responsibility of the CHDP deputy director.

<u>The Conception of EPSDT & CHDP</u>
Medicaid was created on July 30, 1965 through Title XIX of the Social Security Act. Federal Law requires Medicaid to cover a very comprehensive set of benefits and services for children. In 1967, Congress established the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program, the child health component of Medicaid. The EPSDT is Medicaid's comprehensive and preventive child health program for individuals under the age of 21.

EPSDT requires states to assess a child's health needs through initial and periodic examinations and evaluations to assure that health problems are diagnosed and treated early, before they become more complex & detrimental to the child's health and their treatment becomes more

costly. Each state administers its own Medicaid program under monitoring from the federal Center for Medicare and Medicaid Servcies. Mediaid is known as Medi-Cal in California. The Child Health and Disability Prevention (CHDP) program is California's well child health program. CHDP falls under EPSDT and satisfies Medicaid's child health component.

EPSDT is designed not only to finance health care for children, but also ensure access to needed services, including assistance in scheduling appointments and tranportation assistance to keep appointments. EPSDT has two mutually supportive, operational components: (1) assuring the availability and accessibility of required health care resources; and (2) helping Medicaid recipients and their parents or guardians effectively use them. In Stanislaus County, 46% of children under the age of six are eligible for Medi-Cal.

Stanislaus County's Children

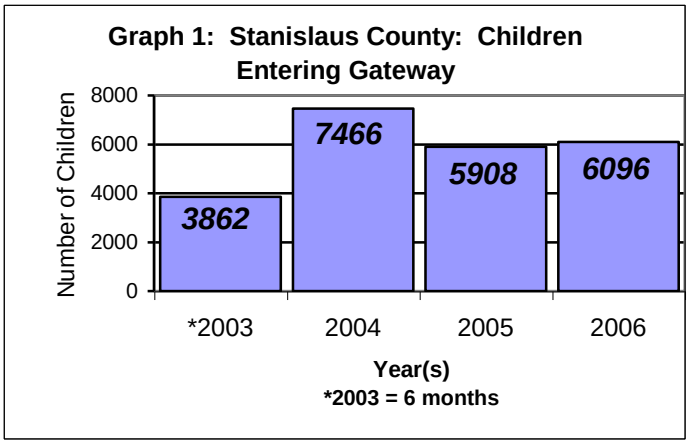
In February of 2007, UCLA released the "2005 California Health Interview Survey"; a collaboration of the UCLA Center for Health Policy Research, the California Department of Health Services and the Public Health Institute. The survey states that in 2005, Stanislaus County had an estimated 512,000 residents; children under the age of 18 accounting for 29.9% (153,000+). Additionally, there were approximately 20,000 children and 63,000 adults that were uninsured for all or part of 2005.

The 2007 California HealthCare Foundation's "SNAPSHOT of California's Uninsured" states that nearly 70%, of the estimated 1.3 million uninsured California children, live in a family where the head of the household has a full-time job, and "three-fifths of the 1.3 million children are eligible for public health insurance." In Stanislaus County, it can be estimated that 12,000, of the 20,000 uninsured children under the age of 18, are eligible for public health insurance (Medi-Cal, Health Families, Kaiser Kids or Healthy Cubs).

Accessing Health Coverage through the Gateway Process

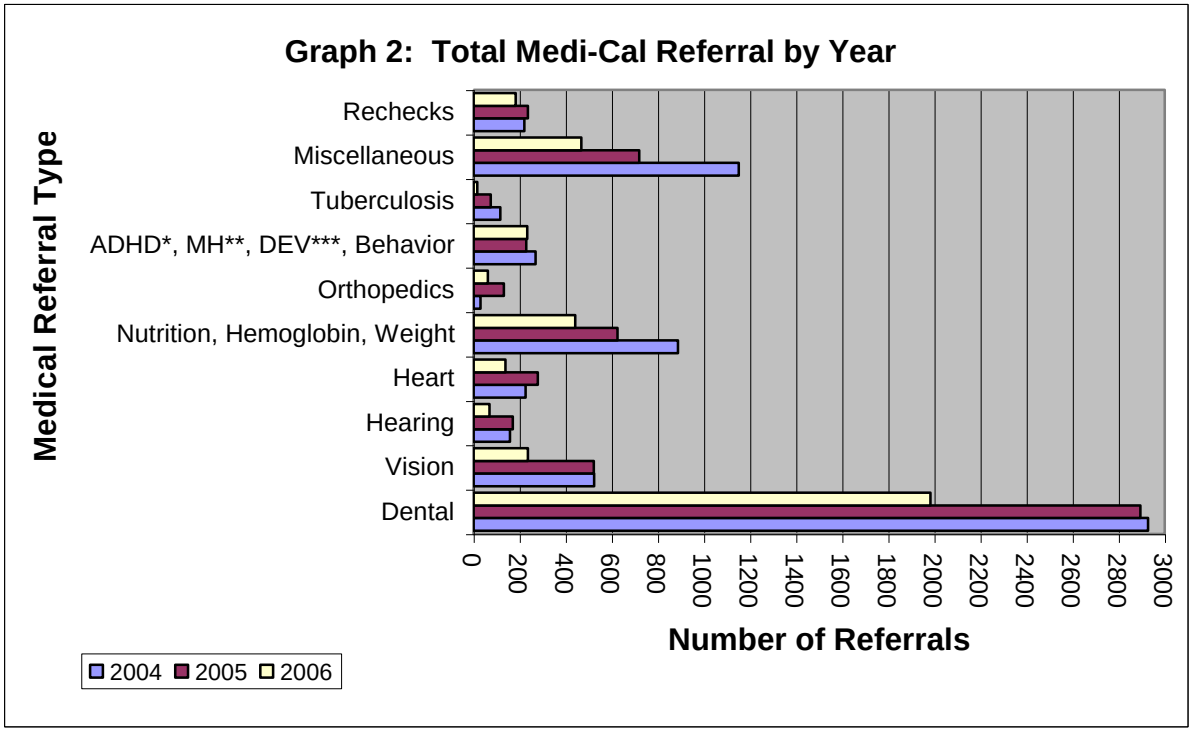
In July 2003, the CHDP program began using the "CHDP Gateway," an automated pre-enrollment process for non Medi-Cal, uninsured children. The CHDP Gateway serves as the entry point for these children to enroll in "ongoing health care coverage" through Medi-Cal or the Healthy Families program. The CHDP Gateway is based on federal law found in Titles XIX and XXI of the Social Security Act that allows states to establish presumptive eligibility programs for children & youth. Low-income children not eligible through the CHDP Gateway pre-enrollment process for the Medi-Cal or Healthy Families program receive CHDP services "during this pre-enrollment period only" paid for by the state general funds.

Graph 1. Number of children in Stanislaus County that have enrolled in comprehensive health care coverage through the Gateway Process, which started July 2003.



Graph 2. Total Medi-Cal referrals and the most frequently diagnosed medical problems that physicians giving the CHDP health exam found in Stanislaus County. The decrease in referrals over the three years is due to an increase in managed care medical enrollees, which are case managed by the Health Maintenance Organizations (HMOs). CHDP Public Health Nurses still receive and case manage all dental and mental health referrals for children covered by HMOs in this county. In the three years represented in graph 2, there were over 16,200 medical, dental, and mental health referrals, which CHDP Public Health Nurses case managed.

Currently, approximately 2.1 million children in California have health care services through the CHDP program.



*Attention Deficit Hyperactivity Disorder, **Mental Health, ***Developmental Delay

Through the local collaborative efforts with health care providers, community partnerships, parents and child advocate agencies, the CHDP program works to ensure that eligible children receive quality health care and continue to empower families to be knowledgeable, responsible health care consumers.

Recently, the Agency/PHD CHDP program has taken steps to increase CHDP provider information within the Health Service Agency. In early 2007, CHDP initiated the posting of a continuously updated listing of the CHDP Medical Providers, Dentists and Optometrists who accept Medi-Cal on the Health Services Agency's Intranet. Providers are searchable by profession, zip code, type of insurance accepted, age, and language. Once a provider office has been selected, there is a printable map available. The map displays a 2-mile radius of the selected provider office, as well as the office's address, and phone number. The goal in posting the providers on the HSA Intranet is to assist HSA staff and case managers to access provider

information to help their patients in decreasing the no show appointment rates due to wrong directions, language or insurance barriers. As of 11/13/2007, the site has been accessed 2249 times, averaging 16.2 visits daily.

In January 2008, CHDP program completed the design of an updated county CHDP webpage for the HSA website. This web page will allow clients, community partners, providers, parents and schools to access CHDP materials. The site will host downloadable forms such as kindergarten / first Grade Health Exam forms; PowerPoint presentations on topics such as oral health and obesity; and materials for medical providers on how to become a CHDP Provider. The majority of the information will be available in English and Spanish, but eleven different languages are represented. The page will be up and running in early summer of 2008.

In 2008, along with the yearly mandated events, CHDP will continue to strengthen current partnerships and work to create new community connections. The proposed 10% reduction in provider reimbursement and quarterly reenrollment for Medi-Cal recipients, which is expected to reduce enrollment, makes the maintenance of the CHDP program vital to the growing number of children living without adequate health care. The practice of preventive health measures is more important then ever for children and families. The Agency/PH's CHDP program continues to search for new and innovative ways in which to educate and empower the community to practice preventive health care.

The CHDP program actively responds to the core public health functions of: Assessment, Assurance and Policy Development (Advocacy) and provides all the 10 Essential Public Health Services.

CHAPTER 5: EMERGING COMMUNICABLE DISEASES

Methicillin-Resistant Staphylococcus Aureas (MRSA)

One of the great public health advances of the twentieth century was the invention of penicillin by Alexander Fleming in 1928. However, mutation of the bacteria resulted in the emergence of resistant strains during the 1960s. Methicillin was developed for treatment of penicillin-resistant strains, but within twenty years methicillin-resistant strains were identified. Methicillin-resistant Staphylococcus aureus (MRSA) became one of the most significant infection control challenges within healthcare facilities, especially as a post-operative wound infection.

The Stanislaus Communicable Disease (CD) Taskforce was established in 2001 to address the emerging challenges of the twenty-first century. Membership has grown to include representation of public health, hospitals, infectious disease physicians, school nurses, laboratories, the Jail Medical Unit, clinic systems, and health plans. One of the early issues that the CD Taskforce addressed was MRSA infection in hospitals. It was concluded that the infections were "endemic", that is, they were well established within the facilities and would be difficult to eradicate.

During 2002 a new type of MRSA skin infection was recognized within California. It was NOT related to a prior wound infection nor inpatient healthcare facilities. It was later determined that it was a mutated bacterium that was capable of penetrating the skin without a pre-existing wound. It was often mistaken for a "spider bite". It became clear that there were two forms of MRSA: Healthcare-Associated (HA-MRSA) and Community-Associated (CA-MRSA). The table below distinguishes the two types.

CHARACTERISTIC DIFFERENCES

Community-Associated MRSA	**Healthcare-Associated MRSA**
• Healthy persons	• Chronically ill persons
• Looks like a "spider bite"	• Long-term care facilities
• Prisoners	• Prolonged hospitalization
• Military trainees	• Intensive Care Units
• Contact sport athletes	• Indwelling central venous catheters
• Gyms	• Dialysis patients
• Child-care and school settings	• Surgical site infections
• Homosexual males	• Diabetic patients
• Injection Drug Users	

It is important for Stanislaus county residents to know the difference between the two types of MRSA. Recent media reports have focused on the significant number of deaths nationally that are related to the MRSA "superbug". These deaths are predominantly from the healthcare-associated MRSA cases. It can be confusing and frightening to parents when the two types are not clearly identified: the community-associated is rarely associated with fatal outcomes.

The following is a chronology related to this emerging infectious disease.

2003
- Report of non-healthcare associated MRSA among gay male inmates in Los Angeles jail system

2004
- Report of similar cases among gay male inmates of the San Francisco jail system.
- Stanislaus County jail medical program informed and surveillance started.
- Fax broadcast to healthcare community alerting providers to "Community-Acquired" MRSA

2005
- Focused MRSA audit at county jails
- Alert to school nurses regarding risk of MRSA in school children.
- Community education flyer published in English and Spanish. More than 2000 distributed during high school sports physicals at HSA clinics.
- Brochure created for childcare providers
- Community Awareness Town Hall. Videotaped and aired on government cable channel.
- Presentation to seniors group emphasizing the risk to those with diabetes

2006
- Confirmation of major uptrend of CA-MRSA among outpatients in Stanislaus County.
- Report of cases decreases at county jails

2007
- English-Spanish brochures distributed to county childcare providers and pharmacies
- Two additional fax broadcasts, one regarding treatment of CA-MRSA, the other distinguishing it from HA-MRSA
- Major concerns within California school systems. State Health Department publishes guidelines for parents

Response to this emerging disease addresses the Core Functions of: Assessment, Assurance and Policy Development. The specific Essential Services include:

Monitor health status to identify health problems
Diagnose and investigate health problems and hazards
Inform, educate and empower people about health issues
Mobilize community partnerships and action to solve health problems
Develop policies and plans that support efforts

Pandemic Influenza— Preparedness, Mitigation, Response, and Recovery

In mid-September of 1918, an outbreak of pandemic influenza spread quickly across the United States. During this period the effects of pandemic influenza in Stanislaus County were dramatic. Although a Peace Day Celebration in Modesto proceeded as planned, churches, theaters and schools were ordered closed by health officials to minimize social gatherings. Households were quarantined. City councils passed ordinances requiring citizens to don protective masks in public and boycotts were encouraged against businesses not enforcing employees to wear masks. Soon masks became scarce and volunteers were enlisted to craft them from available materials. Medicines and other vital medical supplies became scarce. Confronted with a scarcity of hospital beds, local schools and community centers were transformed into alternate care sites (emergency hospitals) and calls for volunteers were put out to provide support for overwhelmed medical professionals.

Archive newspaper clippings show parade participants in Modesto wearing masks to prevent the spread of influenza during the 1918 pandemic flu outbreak.

According to local newspaper accounts, the City of Patterson was hardest hit reporting some 360 cases of influenza. With an estimated population of roughly 700 for that time period, the rate of illness for Patterson was at least 50% of the total population. Overall, the county had an estimated 1,500 cases (probably more) and with an estimated population of 22,500, the rate of illness countywide stood somewhere in the area of 6%. Death records for that time period reflect that at least 154 persons died as a result of the flu. Within the four- month period between October 1918 and January 1919, there were roughly 6.84 flu attributable deaths per thousand county citizens.

Over the last couple of years there have been many different strains of influenza, increasing the concern that vaccinations may be unable to keep pace, thereby creating a situation much like that of 1918. Although this may not become a reality, public health must take seriously the possibility and take steps to be prepared to address this potential concern. Given the current county population of approximately 520,000, circumstances similar to 1918 would imply a potential

fatality rate exceeding 3,500 and rate of illness above 30,000. Current hospital bed count within the county is roughly 1,400 and an influenza outbreak of the 1918 scale would severely tax the current healthcare infrastructure. In such an instance, many of the same measures taken during the 1918 pandemic would be utilized today.

One of the aforementioned measures used during a pandemic would be the deployment of alternate care sites (ACS) in strategic locations throughout the county. The Public Health Department Emergency Preparedness Program (EP) has received funding from the Metropolitan Medical Response System (MMRS), under the auspices of the U.S. Department of Homeland Security, to purchase two self-contained ACS trailer units. Each ACS trailer contains the supplies necessary to set up a temporary 25-bed acute care center at any non-hospital location throughout the county. Ideally, these ACS would be located in close proximity to local hospitals to help relieve the patient "surge" caused by a major event such as a pandemic flu. These units will be instrumental in providing supplemental healthcare during any major emergency, but given the number of hospital beds countywide, the existing ACS may not be sufficient during a severe influenza outbreak or other major emergency.

It is anticipated that future funding may provide for the purchase of more ACSs to further enhance the ability of EP to provide supplemental healthcare during an emergency. In addition, EP has recently been granted a Medical Reserve Corps designation, which is administered through the U.S. Office of the Surgeon General. A medical reserve corps will give EP the capacity to train and organize volunteer medical professionals that may be called upon to provide the kinds of medical services necessary to run the Alternate Care Sites.

The Core Competencies addressed through this program are: Assurance and Policy Development (Advocacy). Of the ten (10) Essential Services those that apply to this program include:

Inform and educate
Mobilize community partnerships
Develop policies and plans
Enforce laws and regulations
Link people to needed services
Assure competent workforce

Stanislaus County Board of Supervisors

Thomas Mayfield, Chairman, District Two
Jim DeMartini, Vice-Chairman, District Five
William O'Brien, District One
Jeff Grover, District Three
Dick Monteith, District Four
Richard W. Robinson, Chief Executive Officer

Health Services Agency Public Health Division Administration

Mary Ann Lee, B.S., M.B.A. – Managing Director, Health Services Agency
Cleopathia L. Moore, P.H.N., N.P., M.P.A. – Associate Director, Public Health Division
John Walker, M.D. – Health Officer, Stanislaus County
Janwyn Funamura, M.D., M.P.H. – Assistant Health Officer, Stanislaus County
Phoebe Leung, B.S., R.D. – Assistant Director Public Health, Public Information Officer
Nancy Fisher, B.S., P.H.N. – Assistant Director Public Health, Director of Nursing

ACKNOWLEDGEMENTS

A special thank you to those who contributed to the production of this document:

Editorial Committee:
Melanie Briones
Eric Cubillo
Ken Fitzgerald
Phoebe Leung
Laura Long
Cle Moore
Olivia Tong

Contributing Authors:
Jackie Camp
Dolores Cisneros
Julie Falkenstein
James Ferrera
Noreen Hartzell
Stephanie Giblin
Lenore Hawks
Brenda Hitchcock
Phoebe Leung
Karen Madden
Trudi Prevette
Christopher Resler
Laura Shinn
Felicia Valdez
John Walker
Aaron Wilson