



THE STATE OF SANTA CRUZ COUNTY'S HEALTH 2007

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We are at a crossroads in time in the life of this nation. Our children may be the first generation in more than a century with a shorter expected lifespan than their parents. The answers to this crisis certainly include greater access to healthcare and a better healthcare delivery system. America spends approximately 2 trillion dollars on healthcare, mostly on the treatment of chronic diseases and their associated complications. Less than 2% of this amount is spent on preventing the precursors to chronic disease, even though at least 70% are preventable. The result is that America has, overall, the worst standings among first world countries on major indicators of health while spending more on healthcare than any other industrialized country.

Americans want better health. To achieve this, we need a system that protects the health of people fortunate enough to enjoy good health by ensuring the conditions in which people can remain healthy. Perhaps more importantly, we need a system that protects and promotes the health of those less fortunate and more vulnerable by reducing health threats such as exposure to tobacco smoke; predicting and detecting the earliest signs of disease; and motivating all sectors of a community, public and private, to work together to have a real stake in improving health as a necessary resource for quality of life and economic viability. That in a nutshell, is a description of a strong public health system. Preventing and combating threats to our health is the primary responsibility of our nation's public health system and regaining our health requires a commitment to revitalizing and modernizing the public health system.



The new Public Health symbol (shown above) is currently used by local public health departments across the country. It depicts three missions in its logo: **Prevent, Promote, and Protect.**

I am going to frame my remarks in this report around these three central themes. The Public Health governmental enterprise in the United States is a federated system consisting of federal agencies in the Department of Health and Human Services, state health departments and local health departments. All are concerned with three major threats which I believe are the most critical to address:

- 1) Emerging Infectious Diseases, as manifested most urgently by the threat of pandemic influenza
- 2) The Epidemic of Chronic Disease
- 3) Global Climate Change

Emerging Infectious Diseases – Urgent Threats and Realities (PROTECT)

Pandemic Influenza

New strains of influenza abound, and with an ever-increasing global economy, it would not be difficult for a novel strain to come to Santa Cruz County, especially since there is an international airport in San Jose and a major university campus in our jurisdiction. An especially severe influenza pandemic could kill or sicken one third of the working population.



Source: National Institute of Allergy and Infectious Diseases (NIAID)

- Major pandemic
- The appearance of a new influenza strain in the human population

Recent Events: The US Department of Health and Human Services recently sponsored a Pandemic Leadership Forum composed of 100 employers, faith-based organizations, health care and civic leaders, to encourage people to prepare for a possible pandemic. During the first meeting on June 13, 2007, Secretary Michael Leavitt made the following assertions:

“The media buzz has died down, but the avian influenza virus has not. Just yesterday, a four-year-old girl in Egypt was diagnosed with avian influenza. A ten-year-old girl in Egypt died of it last week. To date, over 300 people have contracted the disease, and almost 200 have died. Local leadership is the key. There needs to be preparedness at every level. There is a part for everyone in preparing for a pandemic—from stockpiling necessities to adopting good public health habits. Every county, every business, every school, every church, every household needs a plan. But people won’t plan unless urged to repeatedly by leaders they know and respect.”

The Santa Cruz County Public Health Emergency Preparedness Program is refining a Pandemic Flu Preparedness Plan, which will necessitate that a wide spectrum of stakeholders from hospitals and healthcare providers, schools, businesses, government, and the public be involved, prepared, and resourced with the necessary tools during a pandemic.

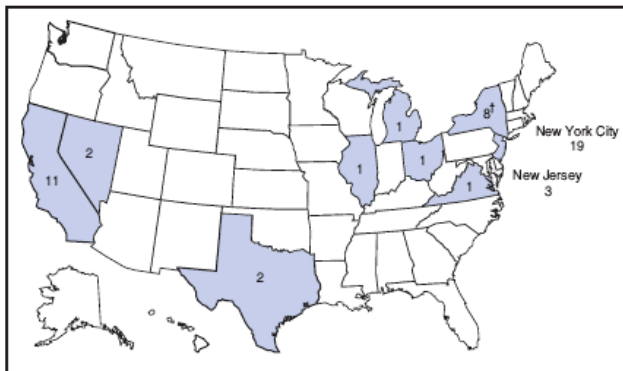
Extensively Drug-Resistant (XDR) Tuberculosis

XDR TB presents a global threat and a challenge to TB-control activities in the United States. To prevent the spread of XDR TB, renewed vigilance is needed through drug-susceptibility testing, case reporting, specialized care, infection control, and expanded capacity for outbreak detection and response. Although all of these activities are the responsibility of public health, the recent XDR TB case in the United States makes clear that continued education, coordination and cooperation are necessary.



Andrew Speaker, XDR TB patient, with his wife Sarah.

FIGURE. Number of reported cases of extensively drug-resistant tuberculosis (XDR TB)* — United States, 1993–2006



* XDR TB defined as resistance to at least isoniazid, rifampin, any fluoroquinolone, and at least one second-line injectable drug (kanamycin, amikacin, or capreomycin).
 † Excludes New York City.

The 49 XDR TB cases were reported from nine states and one city, with the largest numbers in New York City (19 cases) and California (11 cases) (see Figure).

SOURCE:
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5611a3.htm#tab>
 From MMWR March 23, 2007 / 56(11);250-253

Santa Cruz County:

No case of XDR TB has yet been reported in Santa Cruz County. Thus far in 2007, five active cases of TB have been reported in Santa Cruz County.

Difficulties in TB Control:

In the Santa Cruz County population, active TB cases are most likely to occur in foreign-born and homeless persons, which leads to:

- Difficulties with language and culture differences
- Difficulty locating and testing contacts
- The necessity to house homeless people for testing and treatment
- Issues with substance abuse, requiring much more frequent monitoring for medication compliance and side effects
- A high cost of treating TB cases, especially for the uninsured; most cases are followed up by a CD nurse for a minimum of one year

Risk Factors:

- We have a large immigrant population, many of whom are undocumented and uninsured. They tend to wait until they are seriously ill to access medical care, because of fear of deportation).
- We have a large population of homeless people, who are more difficult to locate and can spread the disease more easily to the general public.
- We have university students/researchers who travel frequently and are more at risk of being exposed to TB in foreign countries.

Vaccine-Preventable Diseases



Source: Immunize.org
 Hib: Infected, Swollen face

Vaccines have brought many diseases to record low levels. However, we cannot take high immunization coverage levels for granted. To continue to protect Santa Cruz County’s children and adults, we must obtain maximum immunization coverage in all populations. It is always better to prevent a disease than to treat it. Vaccines prevent disease in the people who receive them, and also protect unvaccinated

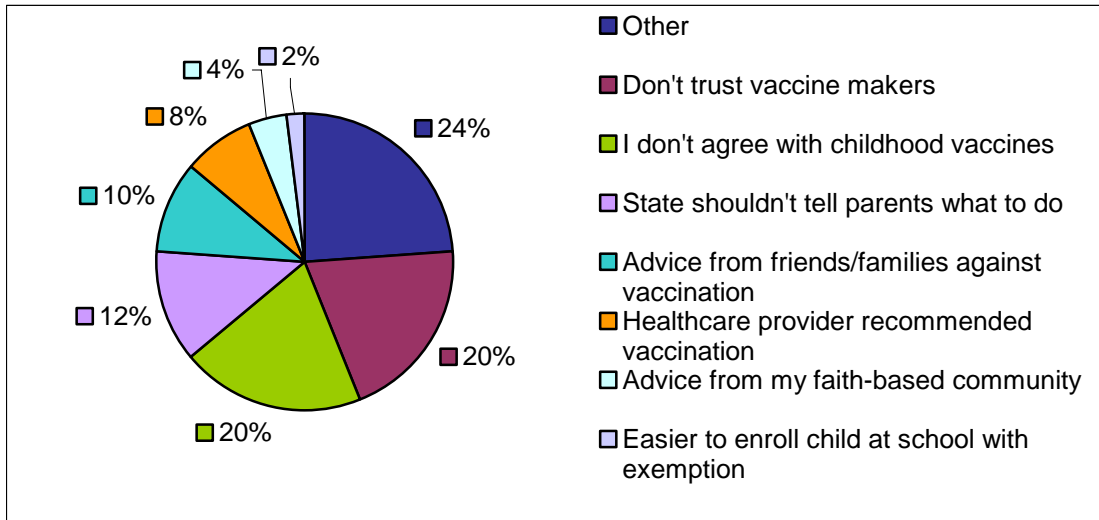
people by reducing the number of sick people who could infect them. Vaccines are responsible for the control of many infectious diseases that were once common in this country, including polio, measles, diphtheria, pertussis (whooping cough), rubella (German measles), mumps, tetanus, and *Haemophilus influenzae* type b (Hib).

Parents are always concerned about the health and safety of their children and take many steps to protect them. Some parents mistakenly believe that it is safer for their children not to get vaccinated. California is one of 18 states where school immunization laws allow a personal belief exemption (PBE) from immunization requirements for school or childcare entry. A recent study conducted in Santa Cruz County found the following results:

PBE Rates in Kindergarten populations:

California	2005	1.3%
Santa Cruz County	2005	6.8%
Santa Cruz County	2006	7.6%

Survey Response: List Factors influencing decision to seek a personal belief exemption.



We recently conducted a study of families of unvaccinated school-age children. We discovered a statistically significant variance in PBE prevalence in North (14.4% with PBEs) versus South County (1% with PBEs). The 14.4% prevalence of unvaccinated children is threatening “herd immunity,” or the safety an individual might enjoy because others around him or her are protected from becoming infected.

Our study reached the following conclusions:

- Parents in Santa Cruz County who choose to take a PBE tend to make the decision based on concern for their child’s well being rather than for reasons of convenience.
- PBE families in Santa Cruz County tend to be older, educated, and upper middle class.
- Written comments indicate deeply held beliefs and a good deal of research on part of respondents.
- Results show there is a high degree of trust with local providers and local/state government agencies, but little or no trust in national government agencies or pharmaceutical companies.
- Respondents criticize the increase in the number of vaccines, the recommended immunization schedule, and they express concerns about vaccine ingredients.

Public Health has recently proposed an initiative to increase childhood immunization rates in partnership with the Hospital Council of Northern California and the Health Improvement Partnership. We will align these efforts with our creation of a countywide immunization registry.

Disease Outbreaks in Santa Cruz County

Management of disease outbreaks in order to protect the community is one of the primary missions of Public Health. Sixteen outbreaks were reported to the Santa Cruz County Health Department between July 2006 and June 2007. An estimated 290 people fell ill as a result of these outbreaks. Twenty-seven (9%) of them were hospitalized, and three (1%) people died while ill. Over two thirds of all cases were associated with norovirus or other gastroenteritis. Norovirus was responsible for outbreaks across the state in prisons, schools, long-term care facilities, and the like.

Outbreaks reported to the Santa Cruz County Disease Control Unit, July '06 – June '07

Date	Facility	Type of Outbreak	Estimated Total ILL	Hospitalized	Number of Deaths
Aug-06	Hospital	Pertussis	12	1	0
Oct-06	Elementary School	Varicella	34	0	0
Nov-06	Mental Health Facility	Norovirus	10	0	0
Nov-06	Restaurant	Foodborne-Norovirus	16	1	0
Nov-06	Restaurant	Foodborne	14	0	0
Nov-06	Residential Care Facility	Norovirus	63	3	0
Dec-06	High School	Varicella	6	0	0
Dec-06	Skilled Nursing Facility	Gastroenteritis	27	7	1
Dec-06	Elderly Assisted Living	Norovirus	6	2	0
Jan-07	General Public	Mushroom Poisoning	6	6	1
Feb-07	Skilled Nursing Facility	Norovirus	17	1	0
Feb-07	Residential Care Facility	Norovirus	42	2	0
Mar-07	Child Care Facility	Vomiting and Diarrhea	7	2	0
Mar-07	Skilled Nursing Facility	Influenza Type A	20	2	1
Mar-07	High School	Pertussis	7	0	0
Apr-07	Elderly Assisted Living	Scabies	3	0	0
TOTAL			290	27	3

The Epidemic of Chronic Disease (PREVENT and PROMOTE)

In sheer magnitude of impact, chronic disease is America’s number one health problem, encompassing four of our top five causes of death – heart disease, cancer, stroke, and chronic lower respiratory disease. All together, chronic disease accounts for 70 percent of all deaths in the United States, inflicts untold disability and suffering, and consumes three-quarters of the \$2 trillion the U.S. spends annually on health care.

The effects of chronic disease are felt profoundly by America’s families and communities. If current trends continue, one in three American children will become diabetic and be at increased risk of heart disease, blindness, and nerve and kidney damage. And the aging of our population only increases the likely toll of chronic disease, which often manifests itself as we age and deprives millions of the quality of life they would like to have in retirement.

The impact of chronic disease is also economic. In addition, to the large share of health care spending it commands and the resulting cloud it places over the future viability of the Medicare program, the growing burden of chronic disease affects the health of local economies and the competitiveness of American business.

Top ten leading causes of death in Santa Cruz County compared to state and national rankings. Rates are per 100,000 population.

Leading Causes of Death	Santa Cruz County		California		United States	
	Rate	Rank	Rate	Rank	Rate	Rank
Heart Disease	201.0	1	203.2	1	235.6	1
All Cancers	163.5	2	164.1	2	191.5	2
Cerebrovascular Disease (Stroke)	48.7	3	52.4	3	54.2	3
Chronic Lower Respiratory Disease	36.0	4	39.5	4	43.5	4
Accidents	26.9	5	29.3	5	37.6	5
Influenza & Pneumonia	18.7	6	23.6	6	24.2	7
Alzheimer's Disease	15.4	7	18.9	8	22.4	8
Diabetes	13.7	8	21.3	7	25.5	6
Suicide	13.2	9	9.4	11	10.8	12
Chronic Liver Disease & Cirrhosis	10.5	10	11.0	10	21.8	9

US Data: 2003

County and State Data 2002-2004 (3-year averages)

The most compelling fact about chronic disease, however, is that most are, to varying degrees, preventable. Smoking, for example, is the single most preventable cause of death and disease in the United States, causing 440,000 premature deaths annually. An analysis of the underlying “actual” causes of death in the United States reveals that the leading actual causes of death nationally in the year 2000 were tobacco (calculated at 435,000 deaths, or 18.1% of all U.S. deaths), poor diet and physical inactivity (400,000 deaths, or 16.6% of the total), and alcohol consumption (85,000 deaths, or 3.5%). Some other major actual causes were microbes (75,000 deaths), toxic agents (55,000), motor vehicle

crashes (43,000), firearms incidents (29,000), sexual behaviors (20,000), and illicit use of drugs (17,000).

California has led the way in controlling tobacco use, and now has the second lowest rate of adult smoking in the country. Even so, almost one in five California adults still smokes, and the rate among teens has recently increased. Probably no public health intervention has a greater impact on chronic disease than an effective anti-smoking intervention, and it is especially important to reduce the rate among youths, since early smokers tend to be lifetime smokers.

Deaths due to poor diet and physical inactivity have been increasing dramatically nationwide for many years; there are now nearly as many deaths from these causes as from tobacco. The most recent available data show no improvement.

The California Department of Education regularly conducts Physical Fitness Testing among California schoolchildren. Updated results from the 2005-2006 testing show that a third of California schoolchildren are overweight. Santa Cruz County children are not substantially better off than the rest of the state.

California Department of Education Physical Fitness Testing, 2005-2006
(% overweight)

<u>School Grade</u>	<u>Santa Cruz County</u>	<u>California</u>
5 th grade	34.6%	32.6%
7 th grade	32.5%	33.0%
9 th grade	25.8%	32.0%

The Healthy Kids Survey revealed similar results among high school students in 2004-2006:

<u>School Grade</u>	<u>Overweight</u>	<u>“At Risk of Overweight”</u>
7 th grade	15%	20%
9 th grade	12%	16%
11 th grade	9%	13%

Global Climate Change (PREPARE)

The health implications of global climate change are numerous and severe. We all saw this demonstrated by the extraordinary hurricanes of past years. Not only will these climactic shifts increase the severity of storms, but will cause heat stress, thermal inversions, and increase air pollution. We, in Santa Cruz County will be less impacted by the expected heat waves of this summer, but public health is putting plans in place, in accordance with the State Office of Emergency Services guidelines.

We are already witnessing an increase in vector-borne diseases such as Lyme Disease, Plague, Rocky Mountain Spotted Fever and the emergence of diseases such as West Nile Virus. Food borne illnesses have increased across the US and the world and we have felt the effects here in Santa Cruz County also with the increasing number of outbreaks.



Our food supply and agricultural industry are also threatened. Perhaps most important are the potential effects of climate change on clean water. The potential reduction and contamination of fresh water is central to threatening health.

Source Water Protection is Health Protection

Not wanting to end on this frightening specter of the implications of global climate change, I would like to brief you on the health informatics initiatives that are underway and proposed for the future here in Santa Cruz County. We see health data—clinical, registry, EMS, public health mandated reporting—data as an incredible resource to improve population health as well as improve the quality of health care and public health programs and improve patient safety. The following is a list of Informatics projects:

Epic Software: “Inpatient. Outpatient. Every Patient.”

Electronic Medical Records (EMR) web-based program that contains patient health and billing information with stringent safeguards for privacy and security. Clinicians and public health staff use it to monitor patient wellness.

CCNEA (Central Coast Network for EHR (Electronic Health Records) Adoption)

45 clinics in California and Oregon use Epic as their common electronic medical record system. There are 400,000 patients currently in this system. Kaiser and Sutter also use this same software and are in various stages of implementation. An estimated 58 million patient records will be added to the Epic Care system by 2008-9 (accounting for 20% of the U.S. population).

One-e-App: One Electronic Application

A One-stop approach to streamlining enrollment and retention in a range of health and social service programs, such as: MediCal, Healthy Kids, and Public Health sponsored insurance. The initiative was first implemented in favor of children over a year ago and will soon be functioning for the rest of the community—adults and the MediCruz system. One-eApp will be an excellent source of demographic data for our county.

Elysium

Approximately 50% of Santa Cruz County physicians are utilizing this web-based email messaging system to share patient data with other physicians and public health staff as needed. Sources of data include: lab results (90% of labs in our county are participating), hospital admissions and discharges, physician progress notes and more. Eventually this program might serve public health as an early warning system for unusual diseases or syndromes or abnormally high numbers of particular illnesses or symptoms.

Robert Wood Johnson Infolinks

An initial planning grant to bring all partners, public and private to the table to talk about the governance and standards necessary to share electronic health data for the benefit of the entire community. Significant progress was made defining the barriers and the solutions to ensure interoperability, safety and security.

Robert Wood Johnson Common Grounds

A training grant for Public Health to learn a methodology to define business processes involved in informatics to identify gaps, redundancies, efficiencies and then to plan for restructuring programs to take full advantage of informatics. The methodology is a quality Improvement process for educating public health staff to think systematically in terms of workflows and processes.

Agency for Healthcare Research and Quality (AHRQ)

Research grant to evaluate potential of a community wide diabetes registry which would act as point-of-care and disease management tool. Physicians Medical Group (PMG) was the grantee with close involvement of the county and the Alliance for Health.

Agency for Healthcare Research and Quality (AHRQ) Proposal

Santa Cruz County HSA has applied to AHRQ to establish a Community Health Data Repository with all Clinical and public health data being under one system under the management of Public Health.