

Background

- * The Sunshine Canyon Landfill is owned and operated by Browning Ferris Industries (BFI).
- * The landfill is located west of the I-5 and 14 Freeway interchange at the Los Angeles City and County border.
- * Sunshine Canyon Landfill consists of two sections:
 - Inactive portion: City of Los Angeles
 - Active portion: County of Los Angeles
- * Sunshine Canyon Landfill is a Class III landfill and accepts only routine household and commercial waste.

History

1958 - Operations began at the city-side of the landfill.

1991 - Zone variance expired and the city-side of the landfill became inactive.

1996 - Operations began at the county-side of the landfill.

1999 - LA City Council approved a 55-million-ton expansion adjacent to and above the inactive city-side of the landfill.

2003 - September - LA County Board of Supervisors instructed the Department of Health Services (DHS) to investigate community concerns of cancer and other illnesses among individuals living near the Sunshine Canyon Landfill.

2003 - December - Metropolitan Water District granted approval of last major permit required for expansion.

Community Concerns

- * Staff from the DHS, Toxics Epidemiology Program met with community members to obtain information on health concerns and to discuss possible approaches for investigating these concerns.
- * Community members expressed general concerns about possible health effects of living near a landfill.
- * Community members expressed specific concerns about cancer and asthma.

Health Investigation

- * Objective:
 - To determine if there is a higher than expected rate or unusual pattern of disease in the concerned community.
- * Components:
 - Analysis of mortality rates and causes of death
 - Analysis of low birth weight births
 - Analysis of birth defect data from the California Birth Defects Monitoring Program (CBDMP)
 - Analysis of cancer data by the University of Southern California Cancer Surveillance Program (CSP)
 - Cancer case verification
 - Analysis of childhood asthma rates at Van Gogh Elementary School
 - Review of the literature
 - Household health survey
- * Limitations:
 - Epidemiological investigations are relatively conclusive when large population-based samples are involved. However, investigations involving local area analyses are limited by small sample sizes. Therefore, these types of investigations generally cannot be used to determine the following:
 - ◆ If illness in a community has been caused by a landfill.
 - ◆ If the landfill is safe.
 - In addition, numerous factors can be related to the various health conditions considered, further contributing to the difficulty in determining a cause-and-effect relationship between the landfill and these health conditions.
- * Because of these limitations, the safety of the landfill is best judged by ongoing monitoring of landfill operations and the results of environmental testing.

Mortality Rates and Causes of Death

Introduction

The DHS evaluated information on mortality rates and causes of death among residents in the neighborhoods near the Sunshine Canyon Landfill.

- * The data for this analysis were obtained from registered death certificates in Los Angeles County.
- * Since death certificate registration is required by law, this data set is nearly 100% complete.

Methods

- * The analysis was performed using data on deaths that occurred during the period 1996-2001.
- * The analysis included deaths among those who lived in the area closest to the Sunshine Canyon Landfill (1990 Census Tract 1066.03), in the adjacent Granada Hills/Sylmar areas (1990 Census Tracts 1065.00, 1066.01, 1066.02, 1066.41, 1066.42, & 1066.43), and in all of Los Angeles County.
- * The leading causes of death in each area were determined by looking at the listed underlying cause in the medical portion of each death certificate.
- * "Underlying cause of death" was defined as the disease or injury which began the sequence of events that lead directly to the death.

Results

- * Heart disease and cancer were the leading causes of death in each of the three areas (Sunshine Canyon Landfill area, the adjacent Granada Hills/Sylmar areas, and Los Angeles County).
- * Mortality rates for heart disease and cancer were lower in the Sunshine Canyon Landfill area than in Los Angeles County.
- * The mortality rate for strokes was higher in the Sunshine Canyon Landfill area than in Los Angeles County. It should be noted, however, that environmental toxins are not a major contributor toward stroke mortality relative to other factors such as genetics, age, tobacco use, hypertension, diet, and physical inactivity.
- * For all other causes of death, the numbers were too small (<10 from each cause) to allow for a comparison with countywide rates.

Conclusions

- * The results from this analysis did not provide evidence of an unusual pattern of mortality among residents which could be associated with living near the Sunshine Canyon Landfill during the years 1996-2001.

Low Birth Weight Births

Introduction

DHS staff evaluated information on births among women living in the neighborhoods near the Sunshine Canyon Landfill.

- * The data for this analysis were obtained from birth certificates recorded at the birth hospital or office of the local registrar.
- * Since birth certificate registration is required by law, this data set is nearly 100% complete.

Methods

- * The analysis was performed using data on live births during the period 1982-1988. This period was selected because it was a time when community members reported the greatest amount of exposure to dust and debris from the landfill.
- * The analysis included births among those living in the area closest to Sunshine Canyon Landfill (1980 Census Tract 1066.03), in the adjacent Granada Hills/Sylmar areas (1980 Census Tracts 1065.00, 1066.01, 1066.02, & 1066.03), and in all of Los Angeles County.
- * Low birth weight was defined as weighing less than 2500 grams (5.5 pounds).

Results

- * The percentages of low birth weight births in the Sunshine Canyon Landfill and the adjacent Granada Hills/Sylmar areas were not significantly different from the percentage of low birth weight births in Los Angeles County.
- * Additionally, these results remain the same after adjusting the analysis for maternal age or race/ethnicity.

Conclusions

- * The results from this analysis did not provide evidence of an unusual number of low birth weight births among women living near the Sunshine Canyon Landfill who gave birth during the years 1982-1988.



Analysis of Birth Defect Data by the California Birth Defects Monitoring Program

Introduction

The DHS requested that the California Birth Defects Monitoring Program (CBDMP) analyze data on birth defects in the neighborhoods near the Sunshine Canyon Landfill.

- * The CBDMP has the most accurate statistics available on birth defects in the state population.
- * The data for this analysis were collected through rigorous medical record review.

Methods

- * The CBDMP reviewed birth defect data for the period 1990-2001 and calculated the rates in the three zip codes closest to the landfill (91344, 91326, and 91342).
- * These rates were compared to those in the general Los Angeles County population.
- * In Los Angeles County, data were collected on five conditions: Down Syndrome, cleft lip with or without cleft palate, neural tube defects (e.g., spina bifida), and two congenital heart defects (transposition of the great arteries and Tetralogy of Fallot).

Results

- * There were no excesses observed in any type of birth defect in the neighborhoods near the landfill.

Conclusion

- * The results from this analysis did not provide evidence of elevated rates of birth defects in the zip codes closest to the Sunshine Canyon Landfill.

Analysis of Cancer Data by the USC Cancer Surveillance Program

Introduction

DHS staff requested that the University of Southern California Cancer Surveillance Program (CSP) analyze data on cancer incidence in the neighborhoods near the Sunshine Canyon Landfill.

- * The CSP has the most accurate statistics available on cancer incidence in the county population.
- * The data for this analysis were collected through rigorous medical record and laboratory review.
- * Since the reporting of all cancers (except non-melanoma skin cancers) diagnosed in the state of California is required by law, this data set is nearly 100% complete.
- * The data is tracked based on residence at time of diagnosis.

Methods

- * The CSP reviewed cancer data for the period 1972-1999 and calculated the rates of cancer in the census tract closest to the landfill (1990 Census Tract 1066.03) and in the adjacent census tracts extending to the south of the landfill (1990 Census Tracts 1065.00, 1066.01, 1066.02, 1066.41, 1066.42, & 1066.43).
- * These rates were compared to those in the general Los Angeles County population.
- * The neighborhood rates of lung, liver, bladder, and colon cancer were assessed, as these are the types of cancers more commonly seen with cancer-causing agents in air or water.
- * The CSP also evaluated the neighborhood risks of all types of cancer combined, in all ages and in children up to 14 years old.

Results

- * There were no excesses observed in any type of cancer in the neighborhoods near the Sunshine Canyon Landfill.
- * The observed number of all male cancers combined was less than expected in the census tract containing the Sunshine Canyon Landfill.

Conclusion

- * The results from this analysis did not provide evidence of elevated rates of cancer in the census tracts near the Sunshine Canyon Landfill.



Cancer Case Verification

Introduction

Some community members expressed concern that the USC Cancer Surveillance Program (CSP) statistics are incomplete and do not account for the “clusters” of cancer on some of the streets near the Sunshine Canyon Landfill.

- * The purpose of this investigation was to assess the completeness of cancer reporting to the CSP for certain blocks within the neighborhood which residents believed had abnormally high rates of cancer.
- * The CSP contains the most complete and accurate data on cancers diagnosed within Los Angeles County since 1972.

Methods

- * Two streets identified by community members as having clusters of cancer were selected to assess the completeness of reporting to the CSP.
- * DHS staff visited all households on these streets to collect information on cancer diagnoses.

Results

- * A total of 14 reportable cancers were identified among residents on the two streets.
- * Of the cancers identified, 13 had been reported to the CSP.
- * The single unreported case had been diagnosed in 2004 and, therefore, would not be expected to be in the registry's database yet.

Conclusion

- * The results confirm that individuals diagnosed with cancer (including those who have died) while living on the selected two blocks were being accounted for in the USC-CSP registry.

Analysis of Childhood Asthma Rates at Van Gogh Elementary School

Introduction

The DHS conducted an assessment of asthma rates at the elementary school closest to the Sunshine Canyon Landfill.

Methods

- * DHS Staff obtained parental consent and reviewed 150 health records of students at Van Gogh Elementary School.

Results

- * Asthma rates for children attending the school (8.7%) were within the range of rates observed for children countywide (6.7% - 9.9%).
- * The results of this assessment were limited because only 33% of the parents provided consent for the review of their child's health records.
- * In addition, many of the health records were not up to date.

Review of the Literature

- * A review of the published scientific literature revealed at least 50 studies that examined potential health risks associated with living near landfills.
- * Nearly all of these studies focused on hazardous landfills rather than municipal landfills.
 - The Sunshine Canyon Landfill is classified as a municipal landfill.
- * Some studies found increased rates of low birth weight births, birth defects, and some types of cancer associated with residence near hazardous landfills.
- * However, other studies have found no such associations.
- * DHS staff was unable to find any studies that linked adverse health effects with residence near municipal landfills.



Household Health Survey

Introduction

Because individuals in the community expressed concern that the other components of the investigation might be missing important information about residents living in the neighborhood near the Sunshine Canyon Landfill, the DHS agreed to conduct a household health survey.

Objectives

- * The objectives of the household health survey were as follows:
 - Obtain information on household characteristics, health behaviors, certain medical conditions, and self-perceived health status among community members living near the landfill.
 - Assess the level of concern in the community about the landfill and the general environment.

Methods

- * DHS staff developed a questionnaire following an extensive literature review, input from the community, and consultation with several medical and epidemiological experts.
- * The survey was administered to a representative sample of 100 households in the census tract closest to the landfill.
- * To provide data for comparison, the survey was also administered to a representative sample of 100 households within a community (Chatsworth area, census tract 1131.00) with similar demographic and geographic characteristics but with no prior history of a landfill.

Results

- * The results of the survey indicate that the household, lifestyle, and health characteristics that were measured are relatively similar between the two communities.
- * The survey did not find evidence of unusually high rates of asthma or specific cancers in the community near the Sunshine Canyon Landfill, with the possible exception of asthma and wheezing symptoms among women.
- * The rate of reported asthma and wheezing symptoms was higher among women in the community near the landfill; however, rates of asthma and wheezing symptoms were not higher among children and men.
 - This suggests that the higher rate of reported asthma and wheezing symptoms among women in the community near the landfill is not likely related to the landfill or other local environmental conditions.
 - In addition, the greater prevalence of asthma among women could be due to known triggers of

asthma such as pollen, animal dander, cigarette smoking and ambient air pollution.

- * A higher number of cancers (all types combined) were reported in the community near the landfill than in the comparison community. This difference does not appear to be related to the landfill for the following reasons:
 - The cancers reported in the community near the landfill consisted of a number of different types of cancer rather than a single predominant type as would be expected with a toxic environmental exposure.
 - The types of cancer reported in the community near the landfill did not include those most often caused by toxic environmental exposures.
 - The cancers reported in the community near the landfill were spread relatively evenly throughout the census tract.
 - The CSP did not find an excess number of cancers in the community near the landfill. Data from this program is collected through rigorous review of medical and laboratory records and is a much more reliable source of cancer data than the data reported in a household survey.
- * No evidence was found of an increased number of cancers among former residents of the community near the landfill.
- * Results indicate that many community members have considerable concern about the landfill.

Conclusions

- * The survey did not find evidence of unusual patterns or elevated rates of disease which could be associated with living near the Sunshine Canyon Landfill.
- * The survey did confirm widespread health concerns related to the landfill in the neighboring community, highlighting the need for ongoing, open communication channels between the community and those responsible for monitoring and regulating the landfill.

FOR MORE INFORMATION:

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Local Enforcement Agency
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County of Los Angeles Department of Health Services
Local Enforcement Agency
(818) 833-6523

County of Los Angeles Department of Health Services
Toxics Epidemiology Program
(213) 738-3220
www.lapublichealth.org/tox/

Los Angeles Regional Water Quality Control Board
(213) 620-2253

South Coast Air Quality Management District
(800) CUT-SMOG (288-7664)