CORAM, MT. SINAI, PORT JEFFERSON STATION (CMP)
FOLLOW-UP INVESTIGATION

June 2006

FINAL INTEGRATION REPORT UPDATE

Results of Investigation and Remaining Analyses are Presented

Summary

Our research is now complete. In this booklet we've described the final analyses that were done to complete the CMP Follow-up Investigation. State health researchers examined a large amount of existing information about environmental contaminants and other factors in the CMP area. We also interpreted information from the epidemiological, toxicological, environmental exposure and integration evaluations. The preliminary conclusion presented in June 2004 is confirmed – none of the contaminants are likely to be related to the elevated breast cancer rates among women in the CMP area. Since June 2004, we evaluated additional air contaminants, pesticides and private drinking water. Except for ozone, none of the contaminants are likely to be related to non-cancer health effects in the CMP area. Ozone levels in the CMP area as well as the rest of Long Island sometimes exceed the 8-hour ozone standard. Ozone can cause nose and throat irritation, shortness of breath, chest pain, coughing and decreases in lung function.

In June 2004, the State Health Department released the ***CMP Follow-up Investigation Working Draft Integration Report*** that described our research to date and some preliminary conclusions about breast cancer incidence in the CMP area. An Open House was held and a summary packet of information was mailed to more than 650 people on our mailing list. At that time we had some remaining analyses to complete before making final conclusions. This booklet summarizes new information and describes our final conclusions and recommendations.

- ***Epidemiological Evaluation Update:*** A length of residence evaluation was completed that provides more information about how long women lived in the CMP area prior to being diagnosed with breast cancer. Researchers also completed their evaluation of known risk factors for breast cancer, analyzing statistics to account for income and education, which are commonly accepted surrogates for certain known risk factors, such as having fewer children or having children later in life.
- ***Toxicological Evaluation Update:*** Additional contaminants were evaluated as risk factors for human breast cancer using the State Health Department's classification scheme.
- ***Environmental Exposure Evaluation Update:*** Additional environmental exposures were evaluated including pesticides, air contaminants, private drinking water contaminants, hazardous waste sites and groundwater contamination near Brookhaven National Laboratory.
- ***Integration Evaluation Update:*** Health risk evaluations were done for additional contaminants found elevated in the CMP area compared to other areas of the state.
- ***Summary and Conclusions:*** We've interpreted information from these four evaluations to provide final conclusions and recommendations for the investigation.

CMP FOLLOW-UP INVESTIGATION SUMMARY MATERIALS AVAILABLE

BACKGROUND: About the Coram, Mt. Sinai, Port Jefferson Station Follow-up Investigation

EPIDEMIOLOGICAL EVALUATION: Evaluating Area Demographics and Known Risk Factors Provides Background for Ongoing Breast Cancer Investigation

TOXICOLOGICAL EVALUATION: Classifying Substances as Risk Factors for Breast Cancer

ENVIRONMENTAL EVALUATION: Existing Environmental Data are Used to Evaluate Elevated Levels of Contaminants

INTEGRATION EVALUATION: Making Conclusions About Environmental and Other Factors and Breast Cancer Incidence

FINAL INTEGRATION REPORT UPDATE: Results of Investigation and Remaining Analyses are Presented

Additional details about the CMP Follow-up Investigation can be found in the ***Coram, Mt. Sinai, Port Jefferson Station Final Integration Report.***

For More Information Contact

New York State Department of Health
(800) 458-1158 ext. 27530
http://www.nyhealth.gov/environmental/investigations/cmp/

Background about the CMP Follow-up Investigation

The CMP Follow-up Investigation was conducted as part of the New York State Cancer Mapping Project, also known as the Cancer Surveillance Improvement Initiative. This investigation follows the Unusual Disease Pattern Protocol, which was developed to conduct investigations in areas where the incidence of a disease is significantly greater than expected. This protocol was used for the first time during this investigation to identify unusual environmental and other factors that may help to explain elevated breast cancer incidence in this seven ZIP Code area observed between 1993 and 1997.

Teams of State Health Department researchers prepared four evaluations as part of this investigation:

- **Epidemiological evaluation**. A team of epidemiologists analyzed breast cancer data, researched what is known about breast cancer and evaluated additional information on women living in this seven ZIP Code area to make conclusions about how these factors may affect breast cancer incidence in the area.
- **Toxicological evaluation.** A team of toxicologists evaluated substances to characterize the likelihood that they are risk factors for breast cancer.
- **Environmental exposure evaluation.** With input from the communities, a team of environmental scientists evaluated a large number of existing environmental data sets to identify possible exposures to elevated levels of contaminants compared to other areas of the state.
- **Integration evaluation.** These research teams then worked together to integrate their results and evaluate health risks associated with estimated possible environmental exposures in terms of their relationship to breast cancer and other non-cancer health effects.

These four evaluations were used to make conclusions about breast cancer incidence in the CMP area. Additional details about the CMP Follow-up Investigation can be found in this summary booklet and in the Coram, Mt. Sinai, Port Jefferson Station Final Integration Report.

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EPIDEMIOLOGICAL EVALUATION UPDATE

Completing the Evaluation of Known Risk Factors for Breast Cancer

In the ***Working Draft Report,*** State Health Department researchers reported on the pattern of breast cancer diagnoses in the CMP area. They looked at the ages of the women and the stage of their disease when diagnosed. Those efforts showed nothing unusual about this area compared to the rest of the state.

Our researchers also analyzed breast cancer incidence for two other time periods. The results showed that the elevation observed between 1993 and 1997 continued through 2000 at roughly the same levels. In an earlier time period, between 1990 and 1992, a much smaller elevation was observed.

Finally, the research team began evaluating the role of race, income and educational level in local breast cancer incidence. These may not be direct causes of breast cancer but are factors that many researchers have found in different published studies to be associated with a delay in having children (for example to pursue education or employment). Women who are older when they deliver their first child have a higher risk of breast cancer. The team reported that when breast cancer statistics were recalculated to consider these factors, the excess was reduced.

In the ***Final Integration Report,*** the research team concluded that the higher than expected breast cancer rate in this area does not stand out as significantly different from the rest of New York State when statistics accounted for income and education, which are commonly accepted surrogates for certain known risk factors, such as having fewer children or having children later in life.

The research team also completed a length of residence evaluation. Length of residence information is important for examining whether environmental factors such as elevated contaminant levels could be related to local breast cancer incidence because breast cancer takes a long time to develop (between five and 40 years) after a woman is exposed to something that may have triggered the disease.

The team examined additional background information about how long women diagnosed with breast cancer lived in this area by using property records and the ***Cole***

Cross Reference Directory, which contains lists of telephone customers by street address, including a date when each entry was first listed. From these data, our researchers obtained records for almost three-quarters of the women diagnosed with breast cancer between 1993 and 1997. The results showed that 78% of those women lived in the area more than five years. Although women with breast cancer tended to be longer-term residents, a considerable fraction were still recent arrivals to the area.

More details about the epidemiological evaluation are found in the fact sheet entitled ***Epidemiological Evaluation: Evaluating Area Demographics and Known Risk Factors Provides Background for Ongoing Breast Cancer Investigation.*** A full description of this evaluation is found in the ***Final Integration Report.***

Risk factor— something that has been demonstrated to increase the chance of developing a disease, such as breast cancer. Having or being exposed to risk factor(s) does not necessarily mean that a person will get breast cancer.

TOXICOLOGICAL EVALUATION UPDATE

Classifying Substances as Risk Factors for Breast Cancer

State Health Department researchers reviewed many scientific studies on breast cancer, developed a classification scheme and classified about 165 substances as to how likely they are to be risk factors for developing breast cancer. This system was used for the first time in this investigation.

For the *Final Integration Report*, our researchers completed their classification of substances. More details about the toxicological evaluation are found in the fact sheet entitled *Toxicological Evaluation: Classifying Substances as Risk Factors for Breast Cancer.* A full description of how State Health Department researchers classified contaminants and the full list of contaminants classified are presented in the *Final Integration Report.*

Categories of the Classification System

Known risk factor for human breast cancer	Sufficient human evidence to establish a cause-and- effect relationship between exposure and breast cancer. Gamma radiation/x-rays was the only substance assigned this classification.
Probable risk factor for human breast cancer	Consistent evidence from human, laboratory animal and mode-of-action studies strongly suggests, but does not demonstrate, a cause-and-effect relationship between exposure and breast cancer in humans. Cigarette smoke (including second hand smoke) is 1 of 21 substances in this class.
Possible risk factor for human breast cancer	The combination of evidence from human, laboratory animal and mode-of-action studies suggests a relationship between exposure to a substance and breast cancer in humans. The pesticide dieldrin is 1 of 61 substances in this class.
Potential to affect human breast cancer risk	Evidence is not strong enough for the substance to be classified as a 'Probable' or 'Possible' risk factor for human breast cancer. The pesticide DDT is 1 of 44 substances in this class.
Not classifiable as a risk factor for human breast cancer	Data are nonexistent, inadequate or conflicting about the relationship between exposure to a substance and human breast cancer. The pesticide alachlor is 1 of 35 substances in this class.
Unlikely to be a risk factor for human breast cancer	Consistent negative evidence from animal and mode-of-action studies indicate that exposure to a substance is not likely to cause breast cancer in humans. Lack of evidence does not qualify a substance for this classification. The solvent hexane is one of three substances in this class.

ENVIRONMENTAL EVALUATION UPDATE

Evaluation of Elevated Levels of Contaminants is Completed

In the *Working Draft Report*, State Health Department researchers examined a large amount of existing information about levels of contaminants and other potential environmental exposures in the CMP area. A summary of the findings from the Working Draft Report is shown in the box to the right. Researchers looked at air quality, pesticide use, in-home radon, hazardous waste sites, industrial sites, public and private drinking water and electromagnetic fields (EMF). They also evaluated a large number of data sets containing environmental information, such as area spills, waste water discharges and fish advisories. They compared what they saw in the CMP area to the rest of Suffolk County and New York State. In many cases, they found that the levels of environmental contaminants in the CMP area were similar or lower. In some cases, the levels of contaminants were greater in the CMP area, and these were evaluated further. More information about those contaminants is discussed later in this booklet.

For the *Final Integration Report,* the research team further evaluated certain environmental data based on comments from the community and areas that were previously identified in the Working Draft Report.

Environmental Findings from Working Draft Report

Air Quality. The levels of the majority of air contaminants were similar to or lower than levels in other areas of the state, but some were at least 10% higher in this area. Ethylene thiourea was the first air contaminant evaluated in the Integration Evaluation.

In-Home Radon. Radon levels in the Town of Brookhaven are estimated to be lower on average than in the rest of New York State. Radon exposures were not further evaluated.

Pesticide Use. The amount of professionally applied lawncare and landscaping pesticides per square mile appear somewhat higher in the CMP area than in the rest of Suffolk County and New York State. 2,4-D was the first pesticide evaluated in the Integration Evaluation.

Hazardous Waste Sites. Hazardous waste sites in the area have not been a source of widespread contamination. Lawrence Aviation is the only site in the CMP area that has an ongoing clean-up program.

Industrial Sites. Based on monitoring near Brookhaven National Laboratory, air radiation levels near the CMP area are not higher than in other areas of New York State. Records about the ongoing cleanup of the Northville Industry East Setauket Terminal gasoline leak showed it was not a source of widespread contamination. Information about the historical operation of the Port Jefferson Power Station was reviewed.

Public and Private Drinking Water. Based on the contaminants evaluated, this area has high quality drinking water. The evaluation showed that public and private drinking water is as good as, if not better than, in the rest of Suffolk County. Volatile organic compounds (VOCs) were the only water contaminants in public water supplies that were further examined. The levels of these were low, and the number of people exposed was small. These were further evaluated in the Integration Evaluation.

Pesticides in private drinking water were the only contaminants that were further examined. The levels of these were lower in the CMP area than in the rest of Suffolk County, although some were found more frequently in the CMP area in localized areas near known agricultural areas.

Electromagnetic Fields (EMF). Data about EMFs are limited, but these were not expected to be higher in the CMP area than in other areas of the state. The area has about the same coverage of transmission lines as other parts of Suffolk County. EMFs were not further evaluated.

Air Quality Update

Researchers re-examined data on gasoline compounds (hexane, ethylbenzene, toluene, xylene and 2,2,4-trimethylpentane) after an error was identified in one of the data sets used to estimate air concentrations in the area. These compounds were removed from the list of those being further evaluated because it is likely air concentrations were much lower in the area than previously reported. The list below shows the final list of air contaminants that were further examined in the ***Integration Evaluation***.

Researchers also further examined air monitoring data for ozone. Ozone levels in the CMP area as well as the rest of Long Island sometimes exceed the 8-hour ozone standard. As a result, ozone was further evaluated and the results are summarized in the ***Integration Evaluation Update*** on page 7.

Air Pollutants Evaluated in Integration

- Ethylene thiourea
- Acrylic acid
- 1,2-Dibromoethane
- Diethanolamine
- Methyl tert-butyl ether (MTBE)
- Propionaldehyde
- 1,2,4-Trichlorobenzene
- Dimethyl phthalate
- Methylene diphenyl diisocyanate
- Acetaldehyde
- Hydrofluoric acid
- Methyl ethyl ketone
- Beryllium
- Aniline
- Trichloroethene
- 1,1,1-Trichloroethane
- Hydrochloric acid
- Arsenic
- 1,3-Dichloropropene
- Glycol ethers
- Acrylamide
- 1,1-Dichloroethene
- Ethylene oxide
- Diesel particulate matter
- Cadmium
- Ozone

Pesticide Use Update

Researchers completed their evaluation using the New York State Pesticide Sales and Use Reporting Database to compare the amount of professionally applied pesticides per square mile in the CMP area with the rest of Suffolk County.

2,4-D, Mecoprop and Dicamba

When professionally applied lawncare and landscaping pesticides (2,4-D, mecoprop and dicamba) were further evaluated in the Final Integration Report, the results showed that reported professional applications in the area were higher than those in the rest of Suffolk County.

2,4-D was previously examined in the Working Draft Report, and mecoprop and dicamba were further evaluated in the Final Draft Report. The results of that evaluation are summarized in the ***Integration Evaluation Update*** on page 7.

Termiticides

In 2000 and 2001, four pesticides used to kill termites (termiticides) accounted for most of those professionally applied in Suffolk County. These include permethrin, chlorpyrifos, cypermethrin and fenvalerate. When researchers compared the use of temiticides as a group in the CMP area with the rest of Suffolk County the results showed that their use in the CMP area was lower. As a result, termiticides were not further evaluated.

Horticultural Oils and Carbaryl

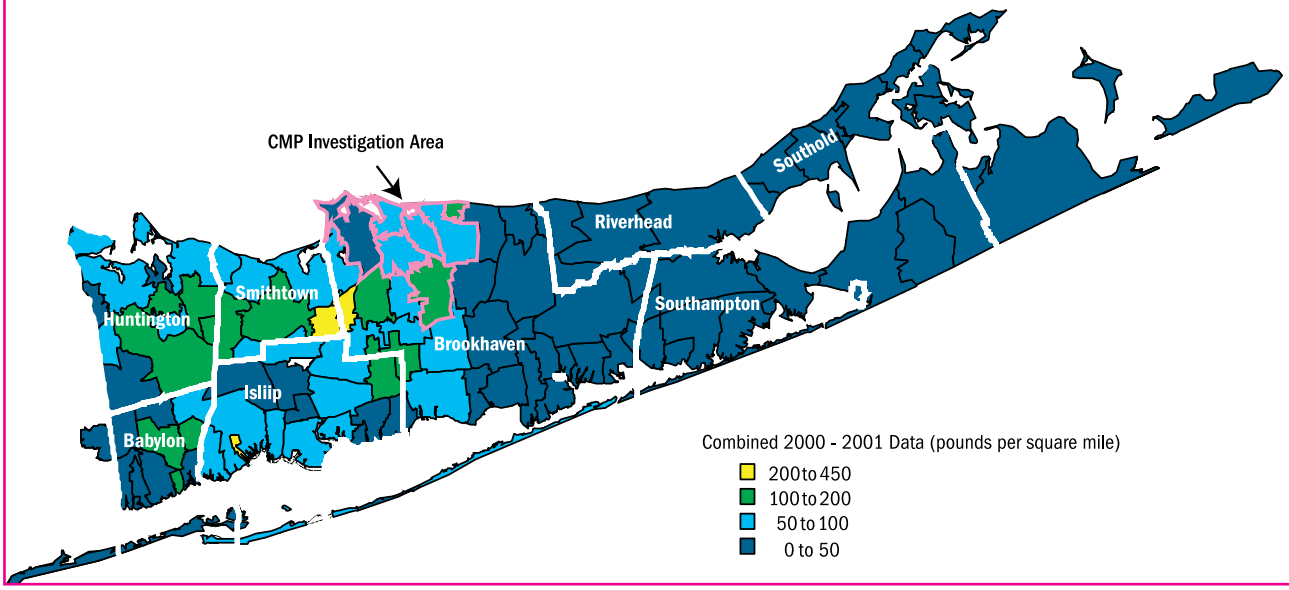
Because of their widespread use in the CMP area, the use of horticultural oils and pesticides containing the active ingredient carbaryl were evaluated. The use of horticultural oils was lower in the area than in the rest of Suffolk County and not further evaluated. The use of carbaryl was higher in the area than in the rest of Suffolk County and was further evaluated. The results of that evaluation are summarized in the ***Integration Evaluation Update*** on page 7.

VAPAM HL

VAPAM HL use was higher in the CMP area than in Suffolk County. The active ingredient in VAPAM HL is metam sodium, which is the third most commonly used agricultural pesticide in the United States. Large applications of this pesticide are common. The active pesticides in VAPAM HL break down quickly in soils limiting the time period when people might be exposed.

Researchers identified one agricultural area in the CMP area that reported most of the use of this pesticide statewide in 2000. They also evaluated Suffolk County drinking water data for breakdown products associated with VAPAM HL. Since 1996, five private wells were tested and no contaminants associated with VAPAM HL were detected. Because the use of this pesticide was localized to one agricultural area and there was no evidence of widespread exposure to VAPAM HL, it was not further evaluated.

Professional Pesticide Applications of 2, 4-D



Comments on Pesticide Use

The State Health Department received comments that the reason that pesticide use was higher in the CMP area was because Suffolk County and New York State were used as comparison areas and pesticide use in the CMP area is more similar to other communities in Western Suffolk County and Nassau County. While pesticide use per square mile is similar in CMP to western Long Island, the decision was made to keep the comparison areas consistent with those used to examine breast cancer incidence and in the other evaluations conducted as part of this investigation.

Many factors (land use, lot size, population, property values and other demographic characteristics) that couldn't easily be considered in this evaluation influence pesticide use. State Health researchers continue to evaluate the NYS Pesticide Sales and Use Reporting Database to identify factors that influence pesticide use patterns in New York State as part of ongoing research activities.

BNL Update

Researchers examined groundwater contamination associated with Brookhaven National Laboratory (BNL). The results showed that groundwater flows south, away from the CMP area and would not affect people living in the CMP area.

In the past, some people on private wells near BNL but not in the CMP area, were exposed to volatile organic compounds (VOCs) and low levels of tritium in groundwater. Some of the VOCs in those wells might have been from another facility. Nearby public drinking water wells were not contaminated. The U.S. Department of Energy provided public water hookups in areas affected by groundwater contamination. Groundwater contamination associated with BNL was not further evaluated.

Private Drinking Water Update

Researchers further examined pesticides in private drinking water wells. Most of the wells sampled for pesticides were in known agricultural areas where pesticide use would have been more concentrated.

The pesticide alachlor and its breakdown products were found in a small number of wells, slightly more frequently in the CMP area than in the rest of Suffolk County. Levels averaged below drinking water standards. Tetra-chloroterephthalic acid (a breakdown product of dacthal) also was detected slightly more frequently in the CMP area than in the rest of Suffolk County. The average concentration also was below statewide drinking water standards.

The Suffolk County Department of Health Services recommends that residents connect to public water when contaminants are detected in their private drinking water wells. As a result, the potential pesticide exposures through drinking water from private wells has been greatly reduced. Because sampling results do not indicate widespread exposures, pesticides in private drinking water were not further evaluated.

Did You Know?

The State Health Department used its own geographic information system (GIS) to evaluate cancer and other health outcomes, environmental and demographic data sets. Our GIS was used to generate the ZIP Code level breast cancer maps. It includes custom applications that were used to detect unusual patterns of disease. This system was developed in the early 1990s and is being continually updated with geographically-referenced environmental, health outcome and demographic data sets from local, state and federal agencies.

INTEGRATION EVALUATION UPDATE

Evaluating Health Risks of Elevated Contaminants

State health researchers made conclusions about elevated contaminants in the CMP area and health risks. Their evaluation considered:

1. **Confidence in the environmental data to estimate exposure.**
2. **Classification of the contaminant as a risk factor for human breast cancer.**
3. **Likelihood that the estimated level of exposure could cause breast cancer or other health effects.**

More details about the methods and the results are summarized in the *Integration Evaluation* summary booklet.

Our researchers completed their evaluation of contaminants and health effects in the CMP area in the *Final Integration Report.* The results showed that no contaminants are likely to be related to the elevated rates of breast cancer and none but ozone are likely to be related to non-cancer health effects. Researchers also evaluated potential health risks of contaminant mixtures and found that it was unlikely that these would significantly increase health risks.

Air Contaminants

Contaminants were evaluated if environmental data suggested that their levels were higher in the CMP area than in other parts of the state. The confidence in the environmental data for most air contaminants was low because air concentrations were estimated for a single year (1990 or 1996), which was too late to be important to the development of breast cancer diagnosed between 1993 and 1997. Researchers had a high confidence in the ozone data, which were based on actual ongoing monitoring data collected near the CMP area since 1974.

Each contaminant was classified as a risk factor for breast cancer. The results showed 1,2-dibromoethane and ethylene oxide were classified as probable risk factors for breast cancer. Acrylamide was a possible risk factor for breast cancer. Fourteen substances were classified as potential risk factors for breast cancer, which is the weakest category showing any association to human breast cancer. There was not enough evidence in the scientific literature to classify nine contaminants, and one contaminant was classified as an unlikely risk factor for human breast cancer.

Based on standard procedures for evaluating health risks, it is unlikely that any of the contaminants are related to the elevated breast cancer incidence in the area. The three substances that were classified as probable or possible risk factors were all determined to pose a very low risk for any type of cancer at the air concentrations estimated for the CMP area.

Diesel particulate matter had the highest cancer risk level based on lung, not breast cancer. This risk would be similar for all of Suffolk County because the modeled estimates for diesel particulate matter for the CMP area are similar to estimates for the rest of county. Research on diesel particulate matter can be found at www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed) using the keywords “diesel particulate matter”.

Ozone was the only contaminant associated with other non-cancer (respiratory) health effects. The estimated CMP ozone air concentration sometimes is higher than the federal 8-hour ozone standard. This is consistent with the fact that Long Island sometimes exceeds the 8-hour ozone standard. When concentrations are expected to exceed the standard, the NYS DOH recommends limiting strenuous outdoor physical activity to reduce the risk of adverse effects (such as nose and throat irritation, shortness of breath, chest pain, coughing and decreases in lung function). People who may be especially sensitive include the very young and those with respiratory problems such as asthma.

New York State has ongoing efforts to reduce ozone and notify residents so that they can adjust their activities to reduce exposure on days when the ozone standards are exceeded. Many researchers also are studying the potential health effects of ozone (see www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed) using the keyword “ozone.”

Pesticides

The results of the ***Environmental Evaluation*** suggested that the use of some professionally applied pesticides (2,4-D, mecoprop, dicamba and carbaryl) is higher in the CMP area than in other parts of the state. The database used to compare pesticide use in the CMP area with the rest of the state could not be used to reliably estimate personal exposures to pesticides. For 2,4-D, our researchers used published estimates of children’s exposures to evaluate health risks. Those results are summarized in the ***Integration Evaluation*** summary booklet. Similar published exposure data were not available for the other pesticides so health risks could not be evaluated. However, toxicity data for all of these pesticides do not identify them as suspected risk factors for breast cancer.

Contaminant Mixtures

The combined health risks from all contaminants evaluated was estimated based on standard procedures. The results showed that it was unlikely that mixtures would significantly increase health effects above those associated with individual contaminants. More detail of this evaluation can be found in the ***Final Integration Report.***

Contaminants Evaluated in Integration

Outdoor air

- Ethylene thiourea
- Acrylic acid
- 1,2-Dibromoethane
- Diethanolamine
- Methyl tert-butyl ether (MTBE)
- Propionaldehyde
- 1,2,4-Trichlorobenzene
- Dimethyl phthalate
- Methylene diphenyl diisocyanate
- Acetaldehyde
- Hydrofluoric acid
- Methyl ethyl ketone
- Beryllium
- Aniline
- Trichloroethene
- 1,1,1-Trichloroethane
- Hydrochloric acid
- Arsenic
- 1,3-Dichloropropene
- Glycol ethers
- Acrylamide
- 1,1-Dichloroethene
- Ethylene oxide
- Diesel particulate matter
- Cadmium
- Ozone

Pesticides

- 2,4-D, Mecoprop and Dicamba
- Carbaryl

Drinking water

- 1,1,1-Trichlorethane
- 1,1-Dichloroethane
- Carbon tetrachloride
- Benzene

SUMMARY AND CONCLUSIONS

Epidemiological Evaluation

State health researchers examined the pattern of breast cancer diagnoses, ages of women and the stage of their disease when diagnosed, as well as changes in breast cancer incidence in the CMP area over time. They looked at information such as property records to learn how long the women with breast cancer lived in the CMP area. They also considered race, income and educational levels associated with known risk factors for breast cancer. Their evaluation showed that the higher than expected breast cancer rate in the area does not stand out as significantly different from the rest of New York State when researchers accounted for local income and education, which are commonly accepted surrogates for certain known risk factors, such as having fewer children or having children later in life.

Toxicological Evaluation

The system developed by state health researchers to classify substances as risk factors for breast cancer was successfully implemented for the first time during the CMP Investigation. This system was used to generate a list of substances for research and investigation purposes in New York State. Additional substances may be evaluated if evidence exists of unusual exposures in areas with elevated breast cancer.

Environmental Exposure Evaluation

State health researchers examined a large amount of existing information about environmental contaminants in the CMP area. They evaluated air quality, pesticide use, in-home radon, hazardous waste sites, industrial sites, public and private drinking water and electromagnetic fields in addition to data from a number of state environmental quality databases, such as spills, waste water discharge permits, fishing advisories, etc. The results showed that the levels of contaminants and other possible environmental exposures in the CMP area were similar to or lower than levels in the rest of New York State for the majority of those evaluated.

Integration Evaluation

The potential human health risks from exposure to 31 individual contaminants were evaluated. The majority of these were air contaminants found at slightly higher levels in the CMP area than in other areas of the state. The evaluation suggests that none of the contaminants or their mixtures are likely to be related to the elevated breast cancer rates among women in the CMP area. It also suggested that except for ozone, none of the contaminants or their mixtures are likely to be related to non-cancer health effects in the CMP area. Ozone levels in the CMP area as well as the rest of Long Island sometimes exceed the 8-hour ozone standard. When the standard is expected to be exceeded, the NYS DOH recommends limiting strenuous outdoor physical activity to reduce the risk of adverse effects (such as nose and throat irritation, shortness of breath, chest pain, coughing and decreases in lung function). People who may be especially sensitive include the very young and those with pre-existing respiratory problems such as asthma.

Because no unusual factors related to breast cancer incidence or other health effects were found in the CMP area, NYS DOH recommends surveillance for this area, consistent with other statewide activities (see below for more details).

NYS DOH Surveillance Activities

1. **NYS DOH will provide ZIP-Code level cancer data for breast, colorectal, lung and prostate cancer periodically for New York State.**
2. **NYS DOH will identify and assess potential exposures throughout the state through routine environmental health activities and take action to reduce those exposures when necessary.**
3. **NYS DOH will continue to provide public health education about health outcomes and environmental exposures in New York communities. The agency will respond to individual and public health inquiries recognizing the scientific limitations in answering these questions.**
4. **As resources allow, NYS DOH will design and carry out studies of highly exposed populations that have been identified by biological or environmental monitoring.**
5. **NYS DOH will explore the feasibility and usefulness of environmental health surveillance and tracking for different health outcomes and exposures throughout the state.**
6. **NYS DOH will re-evaluate the Unusual Disease Pattern Protocol based on its first trial in the CMP area to determine its usefulness in conducting follow-up investigations for cancer and other health outcomes in New York State. This evaluation will consider the use of other methods including basic research into the biology of cancer and the mechanisms of carcinogens, and studies of highly exposed populations. It will also consider the likelihood that these methods will further knowledge about the role of the environment in disease occurrence.**