

Public comments of Donald L. Hassig, Cancer Action NY, Report Titled: Disinformation Cancer Epidemic: A Record of the United States Government's Public health Deceptions Concerning the Role of Dioxin Exposure in Cancer Causation

**Disinformation Cancer
Epidemic: A Record of the
United States Government's
Public Health Deceptions
Concerning the Role of
Dioxin Exposure in Cancer
Causation**

Cancer Action NY

May 2010

Table of Contents

	Page No.
Executive Summary.....	i
Chapter 1: The Documents of Deception.....	1
Chapter 2: Strategies to Decrease Exposure.....	7

Executive Summary

During the time period 1990-present, a large amount of scientific research has been published that would lead any reasonable person to conclude that dioxin exposure of residents of the United States accounted for a significant part of cancer causation. Based upon this conclusion, it is important to reduce dioxin exposure.

Cancer Action NY has focused on dioxin exposure reduction since its founding in January, 2000. We have succeeded in moving the New York State Department of Environmental Conservation to ban open waste burning in New York State. We advocate for dioxin exposure reduction education of the general public by partnerships between ngos and government entities. The early stages of this advocacy involve review of the information on the subject of dioxin exposure cancer risk that is provided on the websites of the following government entities: the New York State Department of Health, the Centers for Disease Control and Prevention (CDCP), Division of Cancer Prevention and Control, the Centers for Disease Control and Prevention's Agency for Toxic Substances and Disease Registry (ATSDR), the United States National Cancer Institute (NCI), the United States Environmental Protection Agency (EPA) and the National Institute of Environmental Health Sciences (NIEHS). None of these government agencies and departments have produced a reasonably current public information piece on dioxin exposure cancer risk.

The US EPA provides public information on the subject of dioxin exposure cancer risk. However, the US EPA dioxin reassessment, which contains this information is a very extensive document and thus cannot be considered to be an effective public education piece. The current draft of the EPA dioxin reassessment contains no information that addresses the fetal origins of cancer and the role of gestational dioxin exposure in this process. Such research has been published in the scientific literature since the early 2000s.

The ATSDR public education pieces include: the Chemical Agent Briefing Sheet for Dioxins, the ToxFAQs for Dioxins and the Public Health Statement for Dioxins as well as the Toxicological Profile for Dioxins. The Public Health Statement for Dioxins makes the recommendation that Americans consume moderate amounts of animal fat. The

Chemical Agent Briefing Sheet (CABS) for Dioxins sets forth Minimal Risk Levels (MRLs) without making known the fact that MRLs are not applicable to the cancer endpoint. The MRL for oral chronic exposure presented in the CABS is 1 picogram dioxin TEQ per kg body weight per day. This amount of exposure imposes an unacceptable quantity of cancer risk. The ToxFAQs for Dioxins does not include any recommendation for reduced consumption of animal fat.

i

The NCI's cancer.gov website presents a Cancer Trends Progress Report-2009/2010 with a section on dioxin exposure cancer risk. This document constitutes a deliberate attempt to deceive the public concerning the quantity of cancer risk imposed by dioxin exposure resultant from consumption of animal fat foods produced and marketed in the United States. The document provides data on the quantities of tetrachlorodibenzo-p-dioxin (TCDD) determined to be present in the bodies of Americans, this being information set forth in the Fourth National Report on Human Exposure to Environmental Chemicals. The quantities were below the level of detection of the analytical technique utilized. No body burden data for total dioxin and dioxin-like compounds TEQ is provided in the NCI Cancer Trends Progress Report-2009/2010. One would conclude from reading the above named document that dioxin exposure imposes an insignificant quantity of cancer risk in the United States. To attempt to lead the public to reach such a conclusion is a deliberate attempt to deceive the public concerning the matter of dioxin exposure cancer risk.

The New York State Department of Health (NYS DOH) publishes an advisory titled, "Chemicals in Sportfish and Game", which sets forth the recommendation that girls and women of child bearing age consume no fish from the Great Lakes and the St. Lawrence River. However, the NYS DOH has not yet published any public information pieces that address the contamination of all animal fat with POPs. The NYS DOH has recently written to our organization describing its intention of supplementing one of its educational pieces, "Reducing Environmental Exposure: The Seven Best Kid Friendly Practices" at some future date so as to include information on this subject. Our position is that the NYS DOH should publish a stand-alone document on the subject of carcinogenic POPs in the US food supply and exposure reduction measures to include a recommendation that animal fat consumption be restricted to little or no intake.

The NIEHS publishes a booklet titled, "Cancer and the Environment: What You Need to Know, What You Can Do". This document does not include a recommendation for reducing consumption of animal fat despite the fact that it provides a very substantial list of recommendations for exposure reduction.

We have succeeded in moving several local government boards to adopt resolutions

supportive of government educational programs focusing on carcinogenic persistent organic pollutant (POPs) exposure reduction (dioxins, and PBDEs).

Chapter I

The Documents of Deception

Numerous federal health agencies produce and disseminate information that relates to the matters of dioxin exposure and cancer. Cancer Action NY has reviewed several of these educational products. Oftentimes the material failed to provide a clear cancer prevention message. In other cases, the information contained in the document was false and clearly utilized for the purpose of deliberate deception. We sought to have the material revised or supplemented and have been unsuccessful in bringing about any such changes.

Agency for Toxic Substances and Disease Registry

The Agency for Toxic Substances and Disease Registry (ATSDR) publishes a series of Chemical Agent Briefing Sheets as an information source for policy makers. Cancer Action NY reviewed the Chemical Agent Briefing Sheet for Dioxins.

The Chemical Agent Briefing Sheet for Dioxins includes a table which sets forth Minimal Risk Levels (MRLs) for dioxin exposure. This table is reproduced below.

What are the minimal risk levels for exposure to dioxins?

ATSDR Minimal Risk Levels (MRLs)			
Name	Route	Duration	MRL
Dioxins	Oral	Acute	200 pg/kg/day
		Intermediate	20 pg/kg/day
		Chronic	1 pg/kg/day

pg/kg/day = picograms per kilogram of body weight per day

According to the most recent draft of the US EPA dioxin reassessment, the average quantity of exposure for the US population is approximately 1 pg dioxin TEQ per kilogram of body weight per day. Considering the MRLs shown above, the average

reader of the Chemical Agent Briefing Sheet for Dioxins would conclude that only minimal risk was being imposed by current levels of exposure. ATSDR scientists are well aware of the fact that MRLs do not apply to cancer outcome. The public is not aware of this qualifying matter. Cancer Action NY requested that the Chemical Agent Briefing Sheet for Dioxins be supplemented so as to provide an explanation of the fact that a significant quantity of cancer risk was imposed at the 1 pg dioxin TEQ per

1

kilogram of body weight per day amount of exposure. ATSDR has declined to make this simple change in the document. The existing document fails to inform the public concerning the approximately 1 in 1000 excess cancer risk imposed by dioxin exposure on the average consumer of animal fat foods produced in the United States.

National Cancer Institute

The National Cancer Institute's (NCI) Cancer Trends Progress Report-2009/2010 Update provides the content found below (blue text) on the subject of dioxin exposure cancer risk. The document provides no information describing the quantity of cancer risk imposed by the amount of dioxin exposure which results from consuming average quantities of animal fat containing foods produced in the US. Such information has been available in the scientific literature and the draft US EPA dioxin reassessment since 2000.

The sole purpose of the above named NCI document is to counter the efforts of grassroots environmental health organizations, including Cancer Action NY, to educate Americans regarding dioxin exposure cancer risk. Our message, the science based public health protection message for dioxins in the US, is to restrict consumption of animal fat containing foods to little or none. The chemical corporations and food industry seek to cause the public to believe that dioxin exposure is low and the quantity of cancer risk imposed is relatively unimportant. This is the message that NCI sets before the public. The message of corporate interests and federal government is absolutely false.

In the table found below NCI sets forth only levels of the most toxic dioxin congener, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). There are many other dioxin congeners and dioxin-like compounds. When the levels of all of these chemical compounds are totalled, the quantity of dioxins and dioxin-like compounds present in the blood of Americans is high enough to constitute a cause for concern. NCI is deliberately trying to deceive Americans by presenting only a small part of the dioxin exposure cancer risk story.

Those who are ruled by greed rule government. Fortunately, anyone who is willing to take the time to read the scientific literature can readily come to know the true and correct facts of dioxin exposure cancer risk. With the guidance of our organization more and more people are coming to understand how government works to facilitate the money makers regardless of the consequences for the common people. Hopefully, this kind of abuse of power will not continue much longer due to the unwillingness of people to be abused in such an important matter as contaminated food and cancer.

2

National Cancer Institute's Cancer Trends Progress Report-2009/2010 Update

Dioxins Prevention: Environmental Factors

Dioxin levels in the United States environment have been declining for the past 30 years due to increasing regulation and reductions in man-made sources.

Dioxins and Cancer

Dioxins are chemicals produced as by-products of incomplete combustion and through certain chemical processes. Major sources of dioxins in the environment include burning of municipal, toxic, hospital, and domestic wastes; specific industrial processes including metal smelting and refining; and paper and pulp bleaching. Dioxins can also be found as contaminants in some insecticides, herbicides, and wood preservatives, and in cigarette smoke. There are at least 100 different kinds of dioxins, including tetrachlorodibenzo-p-dioxin (TCDD), which is the most toxic and is considered a known human carcinogen. There are also numerous dioxin-like compounds, so-called because they have similar chemical, physical, and toxicological properties to the dioxins. These include the chlorinated dibenzo-p-dioxins (CDDs), chlorinated dibenzofurans (CDFs), and certain coplanar polychlorinated biphenyls (PCBs). Environmental release estimates are often presented in terms of toxic equivalents (TEQs). TEQs are derived from a toxicity weighting system that converts all mixture components to a single value normalized to the toxicity of TCDD.

The most common routes of exposure for dioxins occur through the diet, particularly from ingestion of animal fats including meats, full-fat dairy products, and fatty fish. Exposure can also occur through breathing incineration gases released from medical, municipal, and hazardous waste incinerators and industrial sources such as paper mills, cement kilns, and metal smelters.

Trends

Dioxin levels in the general population of the United States are very low (Table P2). Dioxin levels in the environment have been declining for the last 30 years due to stricter regulations on emissions and reductions in man-made sources. Releases from industrial sources have decreased approximately 80–90% since the 1980s (U.S. EPA, 2006). However, dioxins break down so slowly that past releases will remain in the environment for many years (Figure PDI1).

3

Table P2. 50th and 95th percentiles for tetrachlorodibenzo-p-dioxin (TCDD) in blood samples from the U.S. population (picograms/gram, lipid adjusted), 1999–2004.

	1999– 2000 (pg/g)	2001– 2002 (pg/g)	2003– 2004 (pg/g)
TCDD	< LOD	< LOD	< LOD, 5.2

Source: Fourth National Report on Human Exposure to Environmental Chemicals, Centers for Disease Control and Prevention, 2009; available at: <http://www.cdc.gov/exposurereport/pdf/FourthReport.pdf>

* For certain chemicals like TCDD, each individual sample has its own limit of detection (LOD), which is the level at which a measurement has a 95% probability of being greater than zero. In 1999–2000 and 2001–2002, 12.1 pg/g and 5.8 pg/g, respectively, represented the maximum LOD among the samples analyzed and the geometric mean or average concentration of TCDD in all the samples was less than the maximum LOD so the estimate was reported as < LOD. In 2003–2004 the LOD was 3.8 pg/g.

This report is available at the URL found below:

http://progressreport.cancer.gov/doc_detail.asp?pid=1&did=2009&chid=91&coid=914&mid

Comprehensive Cancer Control Plans

In 2003, New York State was developing a Comprehensive Cancer Control Plan (NYS CCCP) . The draft NYS CCCP stated that pollution was not a significant cause of cancer. Cancer Action NY together with Citizens Environmental Coalition, New York

4

State Public Interest Research Group and Capitol Region Action Against Breast Cancer strongly advocated for revision of the draft cancer control plan so as to address the cancer risk that is imposed by exposure to pollutant carcinogens. The New York State Department of Health took note of this advocacy and revised the plan accordingly. New York's final cancer control plan is far ahead of many other states in matters of cancer prevention addressing pollutant carcinogens. Goal No. 2 of the plan is to Reduce Environmental Exposure– "By 2010, reduce population risks associated with environmental exposures to known or likely environmental risk factors for cancer." The problem with this plan is that it is not being vigorously acted upon. It appears that Goal No. 2 was included in the plan only to smooth the waters of environmental discontent. The NYS government workers who implement the plan do so as if Goal No. 2 did not exist. There is now only one year left for NYS DOH to take a significant step toward achieving Goal No. 2.

Nonetheless, the NYS CCCP is better than the MN CCCP. Under the heading of Guiding Principles, the MN CCCP states: "We support science-based and evidence-informed approaches to address cancer control across the continuum of cancer care." There is no mention of pollutant cancer risk factors in this document.

New York has a superior CCCP to that in existence in Pennsylvania. The PA CCCP, also adopted in 2003, states as a Core Goal: "Prevent cancer from occurring whenever possible." In the section of this plan, which sets forth Priority Goals and Objectives for Cancer Prevention and Healthy Lifestyles there is no mention of reducing exposure to pollutant carcinogens, only cigarette smoke.

The WI CCCP sets forth as Goal No. 1: "Reduce the risk of developing cancer." The priority action of this plan is to: "Develop priorities from scientific data to address Wisconsin's cancer burden." Priority areas of the Prevention Section of the WI CCCP include: Tobacco, Healthy Lifestyles and Sunlight. No pollutant carcinogens to be found in here.

The Michigan Cancer Consortium Initiative fails to list a single pollutant risk factor in its Breast Cancer Factsheet. This Factsheet does not list animal fat consumption as a risk factor. Objective No. 2 of the MI CCI Breast Cancer Priority Strategic Plan is: "Women should receive information to help them understand their risk of developing breast cancer."

5

Centers for Disease Control and Prevention's Division of Cancer Prevention and Control

The Centers for Disease Control and Prevention National Comprehensive Cancer Control Program's National CCC Promotional Toolkit contains the following on the subject of risk reduction:

https://www.cancerplan.org/portal/server.pt/gateway/PTARGS_0_2_324_0_0_47/http%3B/PTPORTAL01%3B8080/publishedcontent/publish/_cancerplan/cp_resources/risk_reduction_print_ad_2.pdf

Pollutant carcinogens are missing from this document. Cancer Action NY contacted the Division of Cancer Prevention and Control (DCPC) regarding revising the Promotional Toolkit. The answer that we received was that the Toolkit would not be revised because it was no longer in use. The DCPC leads State Health Departments in the development and implementation of comprehensive cancer control plans. These plans are used by the health departments to provide direction to cancer burden reduction efforts at the state level. If the DCPC were to begin including pollutant carcinogen exposure reduction education among the cancer burden reduction endeavors that it promotes, the state health departments would follow this leadership and begin to provide such education to the general public. Cancer Action NY entered into a dialogue with Dr. Marcus Plescia, Director of the Division of Cancer Prevention and Control on the subject of dioxin exposure cancer risk reduction via dioxin exposure reduction education. At the end of this early round of efforts to move the CDC to become a partner in such an educational outreach, Dr. Plescia stated that he had decided not to join into the work of educating the general public on dioxin exposure reduction. He expressed an interest in utilizing the leadership role of the DCPC to initiate efforts to reduce open waste burning activity across the US. Open waste burning is ranked by US EPA as the heaviest source of dioxin releases to the environment.

Chapter 2

Strategies to Decrease Exposure

BANNING THE USE OF ANIMAL FAT IN THE PRODUCTION OF FEEDS FOR FOOD ANIMALS

Cancer Action NY has now resurrected a petition submitted to the US Food and Drug Administration in 2003 calling for rule-making that would serve to reduce dioxin exposure in the United States. Rules requested would establish a ban on the feeding of animal fats to food animals, and labeling that notifies consumers of the presence of dioxins in animal fat containing foods, including: fat containing dairy products, meats and eggs.

FDA is responding to our petition by arguing that dioxin levels in the environment have decreased over the period of years since the petition was submitted. According to US EPA, current average dioxin exposure is 0.6 pg/kg bw/day. Average exposure was 1.0 pg/kg bw/day in 2003. Considering the fact that the new data referred to by FDA came from an EPA and FDA that were extremely compromised by upper level management appointments made during the Reagan and Bush administrations, Cancer Action NY has expressed its interest in seeing additional testing by third party scientists. Even if the new dioxin exposure quantification is correct and representative of actual exposure, this is certainly not a reason for allowing the feeding of animal fat to continue. The lower of these two numbers is not low enough when one takes into account the extremely low dioxin concentrations (parts per trillion) that have been demonstrated to predispose offspring to develop breast cancer. Prenatal dioxin exposure imposes increased cancer risk when exposure to initiating carcinogens takes place after birth. Furthermore, numerous fat soluble persistent organic pollutant carcinogens are present in animal fat. Banning of the feeding of animal fat to cattle, poultry and hogs would greatly reduce exposure to an entire suite of pollutant carcinogens.

Dioxin levels would be considerably lower in dairy products, meats and eggs if this feeding practice was to be eliminated. Organic livestock producers do not feed animal fat to their animals. The commercial livestock producers feed animal fat because

animals grow faster with such feed intake.

All documents in the Cancer Action NY petition docket can be accessed by visiting: www.regulations.gov and searching the site for petition No. FDA-2004-P-0155. Click on Docket ID.

7

BANNING OPEN WASTE BURNING ACROSS THE USA

On October 14, 2009, 6NYCRR Part 215, Open Fires, a statewide waste burning ban will take effect in New York State. Hopefully, the New York State Department of Environmental Conservation will follow the establishment of the burning ban with the creation of an education program that adequately funds public education on dioxin exposure cancer risk and the open waste burning dioxin source. All other states which do not already have an open waste burning ban must immediately follow this good example and create such a ban via rule-making or legislation.

LABELING ANIMAL FAT CONTAINING FOODS SO AS TO MAKE KNOWN TO THE CONSUMER THE PRESENCE OF CARCINOGENIC PERSISTENT ORGANIC POLLUTANT (POPs) CONTAMINANTS

The Citizen Petition submitted by Cancer Action NY to US FDA included a request for rule-making that would require the labeling of all animal fat containing foods with a notice that the food contained animal fat, which was known to be contaminated with certain carcinogenic POPs. A list of the POPs regularly found in animal fat produced in the United States would be included as part of the required label.

OUR ADVOCACY AND EDUCATIONAL OUTREACH

Cancer Action NY and Cancer Action Network are building capacity for educating New Yorkers on these matters. In May 2009, Cancer Action Network began broadcasting interviews on the subjects of dioxins, open waste burning, dioxin exposure cancer risk and the activism directed at motivating greater government efforts in the area of cancer prevention education that addresses pollutant carcinogens.

Americans need to learn why the US government allows the commercial beef, poultry and hog operations to deliberately feed livestock dioxin contaminated fats. In a Cancer Action Network interview, Dr. David Carpenter, SUNY Albany, Institute for Health and the Environment, describes a commercial animal feeding practice that is the principle source of dioxins in the US food supply. The cows are fed the fat of poultry and hogs.

Poultry and hogs are fed cow fat. Poultry is fed highly contaminated fish fat. By visiting the www.radio4all.net website and searching the site for the programs of Cancer Action Network this program and others can be accessed for downloading.

8

Appendix I:

Pollutant Carcinogen Exposure Reduction Education

Donald L. Hassig, Director, Cancer Action NY, April 16, 2010

A considerable amount of knowledge regarding what causes cancer has accumulated during the past several decades. Cancer Biology has established the basic facts of the process, carcinogenesis, whereby a normal cell becomes a cancer cell. It has also come to be known that a considerable number of chemical substances are human carcinogens.

Chemical carcinogens cause cancer by damaging the DNA of chromosomes. Damage occurs at the molecular level. One molecule of carcinogen attaches to the DNA molecule causing one increment of chromosomal damage, referred to as a lesion. Increased numbers of carcinogen molecules in the body increases the amount of damage done to the DNA. This means that reducing the amount of carcinogen one is exposed to reduces cancer risk. Genes are the basic functional units of chromosomes. Proteins that control all of the body's biochemical processes are produced using the genes for building instructions. When the gene that codes for the production of the protein that controls cell division is damaged by carcinogens the cell can no longer produce a viable protein product and as a result, control of cell division is lost. (Gene damage sufficient to cause such loss of control is the result of several lesions.) The cell possessing a division control gene damaged to this extent is a potential cancer cell.

The above information provides a foundation for cancer prevention education that can significantly reduce cancer risk. Reducing exposure to carcinogens decreases cancer

risk. It is reasonable to focus efforts to reduce exposure on those chemical carcinogens that are imposing a large amount of exposure.

The exhaust released by combustion of gasoline and diesel fuel contains several human carcinogens, including: benzene, formaldehyde, diesel exhaust particulates, and polycyclic aromatic hydrocarbons (PAHs). Many people are exposed to large quantities of exhaust carcinogens.

Lipid soluble persistent hydrocarbon pollutant carcinogens constitute another group of chemical carcinogens to which large numbers of people are exposed. Persistent hydrocarbon pollutant carcinogens include: dioxins, dioxin-like compounds, polybrominated diphenyl ethers (PBDEs), DDE, a breakdown product of DDT, PCBs and numerous synthetic pesticides. These chemical compounds contaminate animal fat due

9

to their presence in the environment. In terrestrial ecosystems, these chemicals enter the food supply via air borne deposition onto the surfaces of vegetation. When herbivores consume the contaminated plants, these chemicals enter into their bodies and are stored in fat tissue. This type of contamination of plant matter is ubiquitous and involves the background levels of pollutants in the environment.

Dioxin Exposure Cancer Risk

It has been recognized for a considerable number of years that a possible association exists between the consumption of animal fat foods and certain cancers. When the contamination of animal fats with dioxins and certain other persistent hydrocarbon pollutants, which have been designated as known human carcinogens, is taken into account, it becomes clear that part of the cancer risk imposed by fat consumption can be attributed to these contaminants.

Residents of the Seveso region of Italy were exposed to high levels of dioxins as the result of an explosion at a chemical factory. A statistically significant association between dioxin levels in blood serum and breast cancer incidence was reported in "Serum Dioxin Concentrations and Breast Cancer Risk in the Seveso Women's Health Study". (Warner, 2002)

According to the United States Environmental Protection Agency, over 90 percent of the American public's exposure to dioxins comes from the consumption of foods containing milk fat, fish fat, tallow and other animal fats. Particulates, upon which are adsorbed dioxins and dioxin-like compounds, deposit from the polluted atmosphere onto animal feed crops such as pasture grass and corn. Entry into the aquatic food chains occurs via contamination of surface waters.

The average American's dioxin exposure thus takes place at lower levels of food contamination than that which existed in the Seveso Women's Health Study. Nevertheless, the association demonstrated by this research should be taken into account for the purpose of determining a precautionary approach in so far as breast cancer prevention is concerned. Women need to significantly lower their intake of animal fat foods as a breast cancer preventive measure.

The United States Environmental Protection Agency has upgraded the cancer risk of dioxin exposure via consumption of dairy foods, beef and fish substantially. In June of 2000, a first draft section of the Agency's dioxin reassessment, "Part III: Integrated Summary and Risk Characterization for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and Related Compounds", set forth the research basis for this change. (US EPA, 2003) Dioxins' carcinogenic

10

effects have been studied extensively in several exposed groups: workers who manufactured or applied dioxin contaminated pesticides, including pentachlorophenol, and 2,4,5-T (Becher, 1998); victims of an industrial accident in Seveso, Italy, which released kilogram amounts of dioxin; and US Air Force personnel engaged in Project Ranch Hand, the spraying of Agent Orange during the Vietnam War.

Utilizing data from the epidemiologic studies (Hamburg herbicide factory cohort) in which highest dioxin sensitivity was demonstrated, people who consume animal fat at a rate which confers an intake of 3.8 pg dioxin TEQ/kg body weight/day have an approximately 2 in 100 upper-bound excess risk of developing cancer due to the dioxin contaminant exposure. A person weighing 130 pounds and drinking 2 quarts of whole milk per day receives on average such a dose of dioxin TEQ from the contaminants present in the milk fat.

Animal studies have demonstrated that a relation exists between gestational dioxin exposure and increased breast cancer susceptibility in female offspring. (Fenton, 2002 and Jenkins, 2007) A study published in 2008 reported delayed initiation of breast development in girls with higher prenatal dioxin exposure. (Leijs, 2008) These research results provide a plausible explanation of the breast cancer cases, which have been diagnosed among American girls during the 2000s.

For access to the government agency reports that focus on these matters please see the documents described below.

New York State Comprehensive Cancer Control Plan

The New York State Comprehensive Cancer Control Plan (NYS CCCP) sets forth a number of goals designed to lead New York State forward on the path of reducing cancer burden on a science based footing. Goal Number Two of the NYS CCCP addresses reducing exposure to cancer causing chemicals and agents in the environment. During the past several years increasing attention has been given to pollutant carcinogen exposure reduction. Earlier environmental exposure reduction efforts focused on second hand cigarette smoke, radon and the ionizing radiation of sunlight.

http://www.health.state.ny.us/nysdoh/cancer/cancer_control/2003/ccp_2003_health_promo_disease_prev.htm#environmental

11

Agency for Toxic Substances and Disease Registry Public Health Statement on Dioxins

The Agency for Toxic Substances and Disease Registry (ATSDR) publishes a series of Toxicological Profiles. A Toxicological Profile for dioxins was published in 1998. The ATSDR website currently makes available a Public Health Statement on Dioxins, which was created as a central message of the Toxicological Profile. The Public Health Statement on Dioxins explains how dioxin exposure takes place and sets forth a science based recommendation for reducing dioxin exposure that being to reduce consumption of animal fat containing foods. However, this document lacks state of knowledge science on dioxin exposure cancer risk, much of which has been published since the period covered in the Profile.

<http://www.atsdr.cdc.gov/toxprofiles/phs104.html>

US EPA Dioxin Reassessment

The US EPA Dioxin Reassessment is a highly detailed compilation of dioxin exposure and adverse health effects science. Part III of the dioxin reassessment provides a mathematical determination of dioxin exposure cancer risk. Utilizing the US EPA's cancer risk slope factor it is possible to calculate approximate population level cancer risk for dioxin exposure. For the US population of 308 million, dioxin exposure will

cause approximately 308,000 cancer deaths in 70 years.

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=55265&CFID=9463478&CFTOKEN=47347279&jsessionid=5a30f3aa404da1ec29517c2fe4e1a6d33774>

Institute of Medicine Report, "Dioxins and Dioxin-Like Compounds in the Food Supply: Strategies to Decrease Exposure"

The Institute of Medicine of the National Academies published the report titled, "Dioxins and Dioxin-Like Compounds in the Food Supply: Strategies to Decrease Exposure" in

12

2003. This report presents several strategies for reducing dioxin exposure. A key recommendation is that girls and women of child-bearing age reduce consumption of animal fat containing foods so as to reduce their dioxin exposure. This group was given particular attention due to the health damaging effects imposed by gestational exposure.

http://books.nap.edu/catalog.php?record_id=10763

References:

Becher, et al. Quantitative Cancer Risk Assessment for Dioxins Using an Occupational Cohort, Environmental Health Perspectives Supplements Volume 106, Number S2, April 1998

Fenton, et al. Persistent Abnormalities in the Rat Mammary Gland following Gestational and Lactational Exposure to 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD), Toxicological Sciences 67, 63-74 (2002)

Jenkins, et al. Prenatal TCDD exposure predisposes for mammary cancer in rats. Reprod Toxicol. 2007 Apr-May;23(3):391-6. Epub 2006 Nov 10

Leijds, et al. Delayed initiation of breast development in girls with higher prenatal dioxin exposure; a longitudinal cohort study, Chemosphere, Vol. 73, Issue 6, October 2008, Pages 999-1004

US EPA. Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds, 2004

Warner, et al. Serum Dioxin Concentrations and Breast Cancer Risk in the Seveso Women's Health Study; Environmental Health Perspectives, V 110: No 7, pp 625-628, July 2002

Appendix II:

Pollutant Carcinogen Exposure Reduction Education: Motivating the New York State Department of Health to Take a Significant Part in this Educational Endeavor

Donald L. Hassig, Director, Cancer Action NY, March 14, 2010

In 2003, the New York State Department of Health (NYS DOH) and the American Cancer Society (ACS) were leading the process of developing a New York State Comprehensive Cancer Control Plan (NYS CCCP). Comprehensive cancer control planning is a process that originates in the Centers for Disease Control and Prevention (CDCP). It is the CDCP's Division of Cancer Prevention and Control that spearheads the development of such plans by State and tribal governments throughout the United States. The Comprehensive Cancer Control Plan serves as a roadmap for efforts to reduce cancer burden within the jurisdiction to which it applies.

The draft NYS CCCP set forth the long outdated argument that pollution, including: air pollution, water pollution, soil contamination and food contamination caused only a very small percentage of all cancer deaths. This was the only message regarding exposure to pollutant carcinogens and cancer prevention that was provided in the document. The "Harvard Report on Cancer Prevention, Volume I: Causes of Human

Cancer” was published in 1996. This report contains a table which presents percentages of cancer deaths caused by various factors. Environmental pollution is listed as causing two percent of cancer deaths. In 1996, there existed no scientific basis for making the cancer causation estimates set forth in the “Harvard Report on Cancer Prevention”. This report was written for the purpose of countering growing public awareness that the cancer epidemic was an unavoidable outcome of life in a heavily polluted environment.

Between 1996 and 2003, a considerable number of scientific research articles on the subjects of pollutant exposure cancer causation and cancer risk were published in the peer-reviewed scientific literature. The state of scientific knowledge in 2003 was such that any person possessing a reasonable amount of intelligence who had read a significant portion of this literature would conclude that exposure to pollutant carcinogens imposed a considerable amount of cancer risk on large numbers of people, and therefore caused much more than two percent of cancer deaths. Bearing in mind the many chemical substances and cancer causing agents that people are exposed to on a regular basis, a thinking person would conclude that it was highly likely that exposure to pollution was a major cause of cancer. Thinking about cancer prevention based upon a background of leading grassroots community efforts to minimize the release of pollutant carcinogens into the environment, the cancer and environment perspectives of NYS DOH and Harvard Medical School constituted obstacles to progress. Policy makers who were influenced by these prestigious health institutions would have little interest in pollutant carcinogen minimization.

14

Cancer Action NY joined forces with three other organizations: Citizen’s Environmental Coalition, New York Public Interest Research Group and Capitol Region Action Against Breast Cancer to call for changes in the draft Cancer Control Plan, specifically: (1) removal of the content which downplayed the role of pollution in cancer causation; and (2) a science-based goal of reducing exposure to specific pollutants known to cause cancer in humans and for which a significant amount of exposure was taking place. The NYS DOH revised the Cancer Control Plan in response to our demands. Goal Number Two of the NYS CCCP is to reduce exposure to environmental risk factors.

The NYS CCC Plan serves as the blueprint for the NYS CCC Program. This cancer burden reduction program is conducted by the New York State Cancer Consortium. The co-chairs of the Steering Committee of the NYS Cancer Consortium are Mark Cronin, Director of the American Cancer Society’s Lakes Regional Office and Anita McFarlane, who works for the National Cancer Institute’s Cancer Information Service of New York. The Cancer Consortium has made very little progress in reducing the exposure of New Yorkers to pollutant carcinogens. This is due to the failure of the Consortium to conduct any public educational outreach on reducing exposure to pollutant carcinogens. No public health education pieces have been produced on the subject of reducing exposure to pollutant carcinogens.

A vast body of scientific research has been published on the role of dioxins in cancer causation. The most studied of dioxins, tetrachlorodibenzo-p-dioxin (TCDD) is classified by the National Toxicology Program as known to cause cancer in humans.

Since 2003, Cancer Action NY has regularly sought to move the NYS DOH to produce public health education materials that would serve to inform New Yorkers of the presence of dioxins and dioxin-like compounds in the animal fat containing foods consumed in New York State. Such an educational piece would be of considerable importance in the effort to make progress on Goal Number Two of our State's Cancer Control Plan. NYS DOH has not yet produced such a document. The Department has made known to our organization its intention of possibly including information concerning food supply contaminant carcinogens in a revised edition of one of its educational booklets.

A New York State Department of Environmental Conservation regulation banning open waste burning state-wide took effect on October 14th of 2009. This was a significant step toward reducing dioxin exposure. (US EPA lists open waste burning as the largest source of dioxin releases in the United States.) The federal government recently funded a Centers for Disease Control and Prevention program titled, "Increasing the Capacity and Capability for State Public Health Laboratories to Conduct Biomonitoring", in which NYS DOH Wadsworth Laboratory, Environmental Sciences Division is a participant. Based upon a recent conversation with Dr. Kenneth Aldous, Director of the

15

Environmental Sciences Division, cancer statistics will be analyzed in connection with biomonitoring data in an attempt to assess cancer causation associated with body burdens of those chemical carcinogens included in the State's biomonitoring program. Hopefully, this research will provide additional insights into the role of pollutant carcinogen exposure in cancer causation. Here are two cases of worthy efforts being made to reduce environmental exposure.

NYS DOH has proven itself to be incapable of reviewing the scientific literature and transforming that knowledge into cancer prevention messages for the general public. This lack of capability is a political matter. In the case of dioxin exposure cancer risk and exposure reduction, NYS DOH fails to produce a preventive educational message because the Department chooses not to displease the many corporations and family businesses, including farms, that produce and market animal fat containing foods: dairy products, meats and fish. When scientific research establishes a large amount of knowledge concerning the cancer causing effect of a particular group of pollutant carcinogens such as dioxins, it is extremely important that some government entity make use of this knowledge to educate the public for the purpose of empowering them to avoid exposure and to advocate for pollution prevention measures.

New federal public health law must be created which delegates responsibility for reviewing the scientific literature in order to find information which can be utilized to prevent cancer by way of education on the subject of pollutant carcinogen exposure reduction. Considering the need for scientific expertise and a focus on environmental health, this responsibility should be bestowed upon the National Institute of Environmental Health Sciences (NIEHS). NIEHS would regularly review the scientific

literature of cancer causation and produce public education messages based upon this knowledge. The exposure reduction messages created by NIEHS would be provided to the NYS DOH as well as to the other State and tribal health departments. New York State Public Health Law needs to be created that will confer upon NYS DOH the responsibility to conduct educational outreach utilizing the exposure reduction messages originated by NIEHS. Cancer Action NY is currently working with the offices of our elected representatives to bring about such legislative results.

In 2010, a new NYS CCCP will be created. All New Yorkers that are interested in changing the behaviors and practices of the past which have caused the high cancer rates in our State must participate in this process. By contacting the New York State Department of Health, the American Cancer Society, the National Cancer Institute or Cancer Action NY, you can start taking part in building cancer prevention stronger in New York.

**Donald L. Hassig, Director
Cancer Action NY
Cancer Action Network
315.262.2456
www.canceractionny.org**