



## Information Collection Rule (ICR)

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## Disinfection Byproduct Health Effects

ICR

Since the discovery of chlorinating byproducts in drinking water in 1974, numerous toxicological studies (studies on the health effects from exposure to high dosages contaminants usually involving animals in a lab) have been conducted. These studies have shown several [disinfection byproducts](#) to be carcinogenic in laboratory animals (e.g., including [bromate](#), certain [trihalomethanes](#) and [haloacetic acids](#)). Some disinfection byproducts have also been shown to cause adverse reproductive or developmental effects in laboratory animals (e.g., [chlorite](#) and certain [trihalomethanes](#) and [haloacetic acids](#)). However, there is considerable uncertainty involved the results of high-dose, toxicological studies of some byproducts occurring in disinfected drinking water to estimate the risk to humans from chronic exposure to low doses of these and other byproducts.

In the area of epidemiology (studies of the factors that influence disease in human populations), a number of studies have been completed investigating the relationship between exposure to chlorinated surface water and cancer. Some have suggested an increased cancer risk to those exposed to chlorinated waters while others have demonstrated none. In issuing the [Stage 1 Disinfectants/Disinfection Byproducts Rule](#) based on evidence then available, EPA stated that while the agency cannot conclude there is a causal link between exposure to chlorinated surface water and cancer, these studies have suggested an association, albeit small, between bladder, rectal, and colon cancer and exposure to chlorinated surface water. There are fewer epidemiology studies evaluating the association between exposure to disinfection byproducts and reproductive and developmental effects. Again, some have suggested an increased risk from exposure to disinfection byproducts while others have shown none. There remains considerable debate in the scientific community on the significance of these contradictory findings concerning chlorinated water and disinfection byproducts. As with cancer, EPA stated in its [Stage 1 Disinfectants/Disinfection Byproducts Rule](#) that, based on data then available, the agency can not conclude there is a causal link between exposure to disinfection byproducts and reproductive and developmental effects. In sum, EPA believes the weight-of-evidence presented by the available epidemiological studies on chlorinated drinking water and toxicological studies on individual disinfection byproducts support a potential hazard concern and warrant regulatory action at this time such as that taken in the [Stage 1 Disinfectants/Disinfection Byproducts Rule](#).

An extensive research effort ([1997 Update to ORD's Strategic Plan, National Toxicology Program](#)) is currently underway to better understand the potential

risks attending exposure to disinfection byproducts. While this research is being completed, an agreement among water suppliers, environmental groups, consumer groups, and regulatory agencies has been reached, resulting in the publication of a Stage 1 Disinfectants/Disinfection Byproducts Rule by EPA in the Federal Register in December 1998. The participants recommended that while additional information, especially on health effects, is needed, the Stage 1 Disinfectants/Disinfection Byproducts Rule was considered the best course of action to reduce potential risks from disinfection byproducts in the near term.

- ▶ Disinfection Byproducts: A Reference Resource
  - ▶ Disinfection Byproduct Information
    - ▶ [Drinking Water and Health](#)

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[http://www.epa.gov/enviro/html/icr/dbp\\_health.html](http://www.epa.gov/enviro/html/icr/dbp_health.html)  
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Last updated on Monday, November 22, 2010

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# State Cancer Profiles

Death Rates

Send to Pr

## Death Rate Report for Kentucky by County, death years through 2

### Bladder

Healthy People 2010 Objective Number: \*\*\*

All Races (includes Hispanic), Both Sexes, All Ages  
Sorted by Rate

County	Met Healthy People Objective of ***? <sup>1</sup>	Annual Death Rate over rate period deaths per 100,000 (95% Confidence Interval)	Average Deaths per Year over rate period	Rate Period	Recent Trend <sup>2</sup>
Kentucky (State)	***	4.5 (4.2, 4.8)	194	2003 - 2007	falling ↓
United States	***	4.3 (4.3, 4.4)	13,217	2003 - 2007	falling ↓
Madison County	***	8.2 (5.3, 12.0)	5	2003 - 2007	**
Kenton County	***	7.0 (5.2, 9.2)	10	2003 - 2007	stable →
Henderson County	***	6.8 (4.0, 11.0)	3	2003 - 2007	**
Warren County	***	5.8 (3.7, 8.5)	5	2003 - 2007	**
Pike County	***	5.7 (3.4, 9.0)	4	2003 - 2007	**
Daviess County	***	5.5 (3.7, 8.0)	6	2003 - 2007	**
Campbell County	***	4.9 (3.1, 7.4)	4	2003 - 2007	falling ↓
Boone County	***	4.7 (2.7, 7.6)	3	2003 - 2007	**
Jefferson County	***	4.7 (4.0, 5.4)	36	2003 - 2007	falling ↓
Hardin County	***	3.8 (2.1, 6.1)	3	2003 - 2007	**
Fayette County	***	2.7 (1.8, 3.8)	6	2003 - 2007	falling ↓
Adair County	*	*	3 or fewer	2003 - 2007	**
Allen County	*	*	3 or fewer	2003 - 2007	**
Anderson County	*	*	3 or fewer	2003 - 2007	**
Ballard County	*	*	3 or fewer	2003 - 2007	**
Barren County	*	*	3 or fewer	2003 - 2007	**
Bath County	*	*	3 or fewer	2003 - 2007	**
Bell County	*	*	3 or fewer	2003 - 2007	**
Bourbon County	*	*	3 or fewer	2003 - 2007	**
Boyd County	*	*	3 or fewer	2003 - 2007	**
Boyle County	*	*	3 or fewer	2003 - 2007	**
Bracken County	*	*	3 or fewer	2003 - 2007	**

Breathitt County	*	†	3 or fewer	2003 - 2007	**
Breckinridge County	*	*	3 or fewer	2003 - 2007	**
Bullitt County	*	†	3 or fewer	2003 - 2007	**
Butler County	*	†	3 or fewer	2003 - 2007	**
Caldwell County	*	†	3 or fewer	2003 - 2007	**
Calloway County	*	*	3 or fewer	2003 - 2007	**
Carlisle County	*	*	3 or fewer	2003 - 2007	**
Carroll County	*	†	3 or fewer	2003 - 2007	**
Carter County	*	†	3 or fewer	2003 - 2007	**
Casey County	*	*	3 or fewer	2003 - 2007	**
Christian County	*	*	3 or fewer	2003 - 2007	**
Clark County	†	*	3 or fewer	2003 - 2007	**
Clay County	*	*	3 or fewer	2003 - 2007	**
Clinton County	*	*	3 or fewer	2003 - 2007	**
Crittenden County	*	*	3 or fewer	2003 - 2007	**
Cumberland County	*	*	3 or fewer	2003 - 2007	**
Edmonson County	*	*	3 or fewer	2003 - 2007	**
Elliott County	*	*	3 or fewer	2003 - 2007	**
Estill County	*	†	3 or fewer	2003 - 2007	**
Fleming County	*	*	3 or fewer	2003 - 2007	**
Floyd County	*	*	3 or fewer	2003 - 2007	**
Franklin County	*	†	3 or fewer	2003 - 2007	**
Fulton County	*	†	3 or fewer	2003 - 2007	**
Gallatin County	†	†	3 or fewer	2003 - 2007	**
Garrard County	*	*	3 or fewer	2003 - 2007	**
Grant County	*	†	3 or fewer	2003 - 2007	**
Graves County	*	*	3 or fewer	2003 - 2007	**
Grayson County	†	*	3 or fewer	2003 - 2007	**
Green County	*	†	3 or fewer	2003 - 2007	**
Greenup County	*	*	3 or fewer	2003 - 2007	**
Hancock County	*	†	3 or fewer	2003 - 2007	**
Harlan County	†	†	3 or fewer	2003 - 2007	**
Harrison County	*	*	3 or fewer	2003 - 2007	**
Hart County	*	†	3 or fewer	2003 - 2007	**
Henry County	*	*	3 or fewer	2003 - 2007	**
Hickman County	†	*	3 or fewer	2003 - 2007	**
Hopkins County	*	†	3 or fewer	2003 - 2007	**
Jackson County	*	*	3 or fewer	2003 - 2007	**
Jessamine County	*	*	3 or fewer	2003 - 2007	**
Johnson County	*	*	3 or fewer	2003 - 2007	**
Knott County	†	†	3 or fewer	2003 - 2007	**

Knox County			3 or fewer	2003 - 2007	**
Larue County			3 or fewer	2003 - 2007	**
Laurel County			3 or fewer	2003 - 2007	**
Lawrence County			3 or fewer	2003 - 2007	**
Lee County			3 or fewer	2003 - 2007	**
Leslie County			3 or fewer	2003 - 2007	**
Letcher County			3 or fewer	2003 - 2007	**
Lewis County			3 or fewer	2003 - 2007	**
Lincoln County			3 or fewer	2003 - 2007	**
Livingston County			3 or fewer	2003 - 2007	**
Logan County			3 or fewer	2003 - 2007	**
Lyon County			3 or fewer	2003 - 2007	**
Magoffin County			3 or fewer	2003 - 2007	**
Marion County			3 or fewer	2003 - 2007	**
Marshall County			3 or fewer	2003 - 2007	**
Martin County			3 or fewer	2003 - 2007	**
Mason County			3 or fewer	2003 - 2007	**
McCracken County			3 or fewer	2003 - 2007	**
McCreary County			3 or fewer	2003 - 2007	**
McLean County			3 or fewer	2003 - 2007	**
Meade County			3 or fewer	2003 - 2007	**
Menifee County			3 or fewer	2003 - 2007	**
Mercer County			3 or fewer	2003 - 2007	**
Metcalfe County			3 or fewer	2003 - 2007	**
Monroe County			3 or fewer	2003 - 2007	**
Montgomery County			3 or fewer	2003 - 2007	**
Morgan County			3 or fewer	2003 - 2007	**
Muhlenberg County			3 or fewer	2003 - 2007	**
Nelson County			3 or fewer	2003 - 2007	**
Nicholas County			3 or fewer	2003 - 2007	**
Ohio County			3 or fewer	2003 - 2007	**
Oldham County			3 or fewer	2003 - 2007	**
Owen County			3 or fewer	2003 - 2007	**
Owsley County			3 or fewer	2003 - 2007	**
Pendleton County			3 or fewer	2003 - 2007	**
Perry County			3 or fewer	2003 - 2007	**
Powell County			3 or fewer	2003 - 2007	**
Pulaski County			3 or fewer	2003 - 2007	**
Robertson County			3 or fewer	2003 - 2007	**
Rockcastle County			3 or fewer	2003 - 2007	**
Rowan County			3 or fewer	2003 - 2007	**

Russell County			3 or fewer	2003 - 2007	**
Scott County			3 or fewer	2003 - 2007	**
Shelby County			3 or fewer	2003 - 2007	**
Simpson County			3 or fewer	2003 - 2007	**
Spencer County			3 or fewer	2003 - 2007	**
Taylor County			3 or fewer	2003 - 2007	**
Todd County			3 or fewer	2003 - 2007	**
Trigg County			3 or fewer	2003 - 2007	**
Trimble County			3 or fewer	2003 - 2007	**
Union County			3 or fewer	2003 - 2007	**
Washington County			3 or fewer	2003 - 2007	**
Wayne County			3 or fewer	2003 - 2007	**
Webster County			3 or fewer	2003 - 2007	**
Whitley County			3 or fewer	2003 - 2007	**
Wolfe County			3 or fewer	2003 - 2007	**
Woodford County			3 or fewer	2003 - 2007	**

**Notes:**

Created by statecancerprofiles.cancer.gov on 11/22/2010 2:05 pm.

State Cancer Registries may provide more current or more local data. Data presented on the State Cancer Profiles Web Site r State Cancer Registries (for more information).

**Trend**

Rising when 95% confidence interval of average annual percent change is above 0.

**Stable** when 95% confidence interval of average annual percent change includes 0.

Falling when 95% confidence interval of average annual percent change is below 0.

\* Data has been suppressed to ensure confidentiality and stability of rate estimates.

\*\* Data are too sparse to provide stable estimates of annual rates needed to calculate trend.

\*\*\* No Healthy People 2010 Objective for this cancer.

<sup>1</sup> Healthy People 2010 Objectives provided by the Centers for Disease Control and Prevention.

<sup>2</sup> The Average Annual Percent Change (AAPC) is based on the APCs calculated by Joinpoint Regression Program. Due to da in the calculation of the joinpoint regression model may differ for selected racial groups or counties.

Source: Death data provided by the National Vital Statistics System public use data file. Death rates calculated by the Nationa rates are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ... , 80-84, 85+). The Healthy Peopl using different methods but the differences should be minimal. Population counts for denominators are based on Census popu populations included with the data release have been adjusted for the population shifts due to hurricanes Katrina and Rita for t Mississippi, Louisiana, and Texas. The 1969-2007 US Population Data File is used with mortality data.

## IPCC Official: "Climate Policy Is Redistributing The World's Wealth"

Thursday, 18 November 2010 13:16 Neue Zürcher Zeitung



*Climate policy has almost nothing to do anymore with environmental protection, says the German economist and IPCC official Ottmar Edenhofer. The next world climate summit in Cancun is actually an economy summit during which the distribution of the world's resources will be negotiated.*

Neue Zürcher Zeitung, 14 November 2010

Interview: Bernard Potter

**NZZ am Sonntag: Mr. Edenhofer, everybody concerned with climate protection demands emissions reductions. You now speak of "dangerous emissions reduction." What do you mean?**

Ottmar Edenhofer: So far economic growth has gone hand in hand with the growth of greenhouse gas emissions. One percent growth means one percent more emissions. The historic memory of mankind remembers: In order to get rich one has to burn coal, oil or gas. And therefore, the emerging economies fear CO2 emission limits.

**But everybody should take part in climate protection, otherwise it does not work.**

That is so easy to say. But particularly the industrialized countries have a system that relies almost exclusively on fossil fuels. There is no historical precedent and no region in the world that has decoupled its economic growth from emissions. Thus, you cannot expect that India or China will regard CO2 emissions reduction as a great idea. And it gets worse: We are in the midst of a renaissance of coal, because oil and gas (sic) have become more expensive, but coal has not. The emerging markets are building their cities and power plants for the next 70 years, as if there would be permanently no high CO2 price.

**The new thing about your proposal for a Global Deal is the stress on the importance of development policy for climate policy. Until now, many think of aid when they hear development policies.**

That will change immediately if global emission rights are distributed. If this happens, on a per capita basis, then Africa will be the big winner, and huge amounts of money will flow there. This will have enormous implications for development policy. And it will raise the question if these countries can deal responsibly with so much money at all.

**That does not sound anymore like the climate policy that we know.**

Basically it's a big mistake to discuss climate policy separately from the major themes of globalization. The climate summit in Cancun at the end of the month is not a climate conference, but one of the largest economic conferences since the Second World War. Why? Because we have 11,000 gigatons of carbon in the coal reserves in the soil under our feet - and we must emit only 400 gigatons in the atmosphere if we want to keep the 2-degree target. 11 000 to 400 - there is no getting around the fact that most of the fossil reserves must remain in the soil.

**De facto, this means an expropriation of the countries with natural resources. This leads to a very different development from that which has been triggered by development policy.**

First of all, developed countries have basically expropriated the atmosphere of the world community. But one must say clearly that we redistribute de facto the world's wealth by climate policy. Obviously, the owners of coal and oil will not be enthusiastic about this. One has to free oneself from the illusion that international climate policy is environmental policy. This has almost nothing to do with environmental policy anymore, with problems such as deforestation or the ozone hole.

**Nevertheless, the environment is suffering from climate change - especially in the global south.**

It will be a lot to do with adaptation. But that just goes far beyond traditional development policy: We will see in Africa with climate change a decline in agricultural yields. But this can be avoided if the efficiency of production is increased - and especially if the African agricultural trade is embedded in the global economy. But for that we need to see that successful climate policy requires other global trade and financial policies.

**The great misunderstanding of the UN summit in Rio in 1992 is repeated in the climate policy: the developed countries talk about environment, the developing countries about development.**

It is even more complicated. In the 1980s, our local environmental problems were luxury problems for the developing countries. If you already fed and own a car, you can get concerned about acid rain. For China, the problem was how to get 600 million Chinese people in the middle class. Whether there was a coal power plant or whether the labour standards in the coal mines were low was second priority - as it was here in the 19th Century.

**But the world has become smaller.**

Now something new happens: it is no longer just our luxury, our environment. Developing countries have realized that causes of climate change lie in the north and the consequences in the south. And in developed countries, we have realized that for a climate protection target of two degrees neither purely technical solutions nor life style change will be sufficient. The people here in Europe have the grotesque idea that shopping in the bio food store or electric cars will solve the problem. This is arrogant because the ecological footprint of our lifestyle has increased in the last 30 years, despite the eco-movement.

**You say that for successful climate policy a high degree of international cooperation is necessary. However this cooperation is not present.**

I share the scepticism. But do we have an alternative? Currently, there are three ideas how to avoid the difficult cooperation: We try unsafe experiments such as geo-engineering, focus on the development of clean and safe energy, or one trusts in regional and local solutions. However, there is no indication that any of these ideas solves the problem. We must want the cooperation, just as you work together for the regulation of financial markets.

**But unlike the financial crisis, in climate policy a country benefits if it does not join in.**

The financial crisis was an emergency operation - in the face of danger we behave more cooperatively. Such a thing will not happen in climate policy, because it will always remain questionable whether a specific event like a flood is a climate phenomenon. But there is always the risk that individual rationality leads to collective stupidity. Therefore, one cannot solve the climate problem alone, but it has to be linked to other problems. There must be penalties and incentives: global CO<sub>2</sub>-tariffs and technology transfer.

**In your new book you talk much about ethics. Do ethics play a role in climate negotiations?**

Ethics always play a role when it comes to power. China and Latin America, for example, always emphasize the historical responsibility of developed countries for climate change. This responsibility is not to deny, but it is also a strategic argument for these countries. I would accept the responsibility for the period since 1995 because we know since then, what is causing the greenhouse effect. To extend the responsibility to the industrial revolution is not ethically justified.

**Could we the ethics in order to break the gridlock?**

The book contains a parable: A group of hikers, who represent the world community, walks through a desert. The industrialized nations drink half of the water and then say generously: "Let us share the rest." The others reply: "This is not possible; you have already drunk half of the water. Let us talk first about your historical responsibility." I think if we are arguing about the water supply because we cannot agree on the ethical principles, then we will die of thirst. What we need to look for is an oasis that is the non-



carbon global economy. It's about the common departure for this oasis.

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Transl. Philipp Mueller

*Ottmar Edenhofer was appointed as joint chair of Working Group 3 at the Twenty-Ninth Session of the Intergovernmental Panel on Climate Change (IPCC) in Geneva, Switzerland. The deputy director and chief economist of the Potsdam Institute for Climate Impact Research (PIK) and Professor of the Economics of Climate Change at the Berlin Institute of Technology will be co-chairing the Working Group "Mitigation of Climate Change" with Ramón Pichs Madruga from Cuba and Youba Sokona from Mali.*