

West Virginia EPI-LOG



Statewide Disease Facts & Comparisons

Cancer clusters under investigation

Possible cancer clusters have been in the West Virginia news recently. The West Virginia Cancer Registry (WVCR) and West Virginia's Cancer Cluster Workgroup which consists of public health, environmental health and clinical medicine specialists from throughout the state, investigate every referral received about possible cancer clusters. These investigations follow the same scientific procedures as other epidemiologic investigations, but are often made somewhat more complex by the nature of cancer and the characteristics of the possible clusters themselves.

CANCER: The Basics

- Cancer is uncontrolled growth and spread of abnormal cells anywhere in the body.
- Cancer is not just one disease but is a term for at least 100 different but related diseases.
- Each type of cancer has its own known or suspected risk factors.
- Cancer is not caused by injuries nor is it contagious.
- Cancer is almost always caused by a combination of factors that interact in ways that are not yet completely understood.
- Carcinogenesis (the process of cancer development) involves a series of changes within cells that usually occur over many years.
- The risk of most types of cancer increases with age.

The fact that the risk of most kinds of cancer increases with age is especially important in West Virginia, where a high percentage of the population is elderly. In some small towns, where many of the younger

people have left to find jobs, there is an even higher preponderance of elderly persons. In these communities, it is not unexpected to find a seemingly large number of persons with cancer. Investigation, however, typically shows that the types of cancer seen are those that are expected in an elderly population and that the rates are not significantly higher than those observed in the state as a whole.

Facts about Cancer Clusters

- They usually involve a relatively large number of a single type of cancer rather than many different types of cancer - While some risk factors are associated with a number of cancers (for example, smoking is associated with increased risk of lung, larynx, oral cavity, stomach, esophagus, pancreas, cervical, bladder and kidney cancers as well as some types of leukemias), the types of risk factors seen in confirmed cancer clusters are usually associated with only a small number of cancers. For example, exposure to asbestos in WWII-era shipbuilders resulted in a cluster of mesotheliomas.
- They usually involve a relatively rare type of cancer rather than a common type of cancer - Across the nation, certain cancers, including cancer of the lung,

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2002-2003 flu season relatively mild, experts say

Influenza (flu) is a viral infection of the nose, throat, bronchial tubes, and lungs. It is highly contagious and is spread person to person through the air by coughing or sneezing. It is also spread by direct contact with infected people. Flu symptoms usually begin one to four days after being infected with the flu virus. Symptoms include fever, chills, headache, cough, sore throat, runny nose, muscle aches, and fatigue. Influenza can be a serious illness that causes severe complications such as pneumonia, bronchitis, and sinus infections. Thousands of deaths each year are caused by influenza. There are two main types of influenza virus, A and B. Each type includes many different strains, which tend to change each year. The type of influenza strain is essential since some rapid tests and antiviral medications are only effective in the identification and treatment of type A strains.

Flu activity in West Virginia during the 2002-2003 season was mild overall, with influenza type B being the predominant strain this season. On a national level, also influenza type B viruses predominated during the first half of the season, but after the week ending February 1, influenza A viruses were reported more frequently than B viruses.

Surveillance for the 2002-2003 influenza season began the week ending Saturday, October 5, 2002, and continued weekly through May 17, 2003, tracking the numbers of patients presenting with "influenza-like-illness" (ILI). ILI is defined for the purpose of surveillance by the CDC as, "Fever (>100 F [37.8 C], oral or equivalent) and cough and/or sore throat (in absence of a known cause)".

State influenza activity for the 2002-2003 season was "sporadic" from October 02 -May 03 except for the

week ending February 8, 2003 when it was "regional". Sporadic activity means Influenza cases, either laboratory-confirmed or influenza-like illness, were reported, but reports of outbreaks in places such as schools, nursing homes, and other institutional settings were not received. Regional activity means that outbreaks of either laboratory-confirmed influenza or influenza-like illness occurred in counties that have a combined population of less than 50% of the state's population.

Laboratory-Confirmed Influenza Cases

The first laboratory-confirmed influenza case of the 2002-2003 season was type B identified in December (week 51, week ending December 2, 2002). The first laboratory confirmed Influenza A case was reported in January (week 4, week ending January 25, 2003).

There were 395 laboratory-confirmed cases of influenza reported in West Virginia during the 2002-2003 season. Of the 395 confirmed cases, 34 (9%) were type A with two cases sub-typed as (H1N1) and one as (H3N2). There

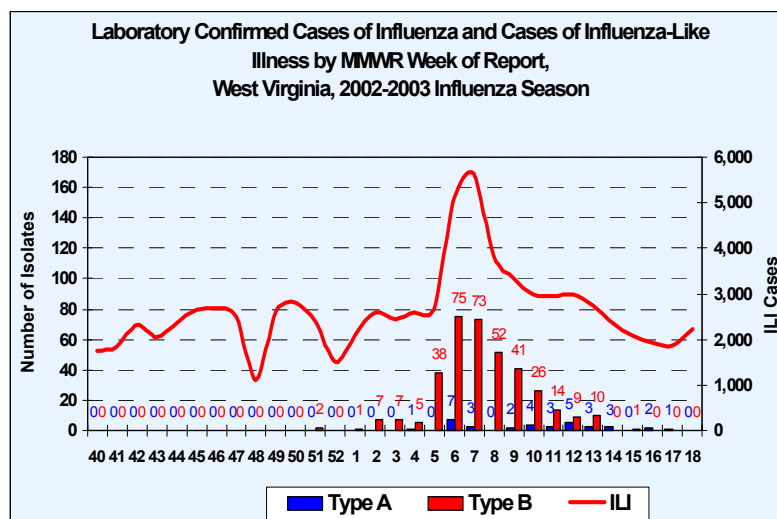
were 361 (91%) confirmed cases of type B influenza in West Virginia.

The last laboratory-confirmed case of influenza was reported in week 17 (week ending April 26, 2003). The last case of influenza B was reported in week 15 (week ending April 12, 2003).

Sources of Influenza data in the 2002-2003 season

Local health departments: In accordance with the West Virginia Communicable Disease Rule, local health departments report aggregate total numbers of influenza-like-illness in their county regularly on

(See *Influenza*, page 3)



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a weekly basis. During the 2002-2003 season, about half of the counties reported influenza-like-illness aggregate totals to the state. The information collected from this system appears to consistently document a seasonal outbreak curve that is consistent with data from other sources.

Sentinel Providers: Influenza surveillance during the 2002-2003 influenza season was conducted in cooperation with the U.S. Centers for Disease Control and Prevention (CDC). Each year from October to mid-May, volunteer sentinel providers track cases of influenza throughout the state. During the 2001-2002 influenza season, 30 providers from five regions were enrolled. West Virginia had a total of 54 providers distributed throughout the state for the 2002-2003 flu season. The total number of counties with sentinel providers was 34. A few counties had more than one sentinel provider. Of the 34 counties with providers, 23 were actively reporting, meaning that they reported the total number of ILI cases seen for the week (numerator) and the total number of any patients seen for the week (denominator).

Sentinel Provider Virology Reporting: This is an essential part of the surveillance system because it allows the CDC, IDEP, local health departments, and the sentinel site to know if the specimen is actually influenza virus, the type of influenza circulating in West Virginia, or if it is some other type of virus.

Of the 23 actively reporting sentinel providers, 14 providers submitted virology specimens (nasopharyngeal swabs) to OLS. 79 specimens were received; three were

positive for influenza type A and 36 were positive for influenza B. Of the three influenza A specimens, one was subtyped as H1N1, one as H1N2 and one as H3N2. Six non-sentinel providers participated.

CDC Sentinel Laboratory System: This system consists of volunteer laboratories that report weekly to CDC the total number of respiratory specimens tested and the number positive for influenza by type and subtype. During the 2002-2003 influenza season, West Virginia had four actively reporting laboratories. All four laboratories reported influenza data on a weekly basis. From these data, the percent of specimens testing positive for influenza was calculated each week and regularly posted on the IDEP website.

Outbreaks of Influenza-Like Illness

There were three reported outbreaks in West Virginia during the 2002-2003 season. All three outbreaks occurred in January-February 2003 and were in schools (elementary to high). The Office of Laboratory Services confirmed these outbreaks were due to influenza B. These outbreaks resulted in high levels of school absenteeism (ranging from 25 to 75 percent) from the affected counties, which include Pocahontas, Lewis, and Jefferson Counties. Data collected through the different components of the influenza surveillance system suggest that national influenza activity peaked during the week ending February 8, 2003. In West Virginia, influenza activity peaked around the same time.

Infections with avian influenza viruses A (H5N1) and A (H7N7) were reported during 2002-03 influenza season in Hong Kong and the Netherlands, respectively. Although transmission of avian influenza viruses directly from animals to humans is unusual, it is impor-

tant to understand that humans typically have little or no antibody protection against these viruses. An avian or other animal influenza virus-infected human may be able to spread the virus efficiently from person to person, causing an influenza pandemic.

In February 2003, a new respiratory disease was identified in Hong Kong. Within a few weeks to months it spread to over 29 countries, including the USA and five continents. A considerable overlap exists between the clinical presentation and travel history of persons who might have severe acute respiratory syndrome (SARS) and those who should be evaluated for infection with influenza A (H5N1).

Summary

Surveillance for influenza is useful to determine the level of disease activity in the population, to detect outbreaks, and to notify the community which viral strains of influenza are circulating, so that physicians can prescribe appropriate antiviral agents. This will be particularly important when an influenza pandemic occurs. Additionally, the CDC, WHO, and other health officials take into consideration the States' viral information when deciding the components of the influenza vaccine.

The key to effective influenza surveillance lies in developing a strong sentinel providers' network. West Virginia is continuously in need of participants for its year-round surveillance. If you are a health care provider and would like to participate, please contact your local health department or the West Virginia state influenza coordinator at 304-558-5358 for more information and/or enrollment. ✕

West Virginia AIDS and HIV Infection Cases by Age Group, Gender, Race and Risk Behavior Cumulative through June 30, 2003*						
Characteristic	AIDS		HIV		Total	
	#	%	#	%	#	%
Age Group~						
Under 5	8	1	6	1	14	1
5-12	2	<1	1	<1	3	<1
13-19	11	1	33	5	44	2
20-29	224	17	241	36	465	24
30-39	563	44	254	38	817	42
40-49	343	27	101	15	444	23
50 and Over	130	10	31	5	161	8
Total	1281	100	667	100	1948	100
Gender						
Male	1092	85	471	71	1563	80
Female	189	15	196	29	385	20
Total	1281	100	667	100	1948	100
Race						
White	1021	81	397	59	1418	73
Black	244	18	246	37	490	25
Other/Unknown	16	1	24	4	40	2
Total	1281	100	667	100	1948	100
Risk Behavior						
Adult						
MSM	708	56	282	43	990	51
IDU	202	16	132	20	334	17
MSM/IDU	72	6	19	3	91	5
Coagulation Disorder	39	3	6	1	45	2
Heterosexual Contact	130	10	114	17	244	13
Transfusion/Transplant	34	3	6	1	40	2
No Identified Risk	4	<1	4	<1	8	0
Other^	82	6	97	15	179	9
Subtotal	1271	100	660	99	1931	100
Pediatric						
Coagulation Disorder	1	11	0	0	1	6
Mother HIV Positive	9	89	7	100	16	94
Subtotal	10	100	7	100	17	100
Total Adults & Pediatrics	1281	100	667	99	1948	100

MSM = Men having Sex With Men; IDU = Injecting Drug User

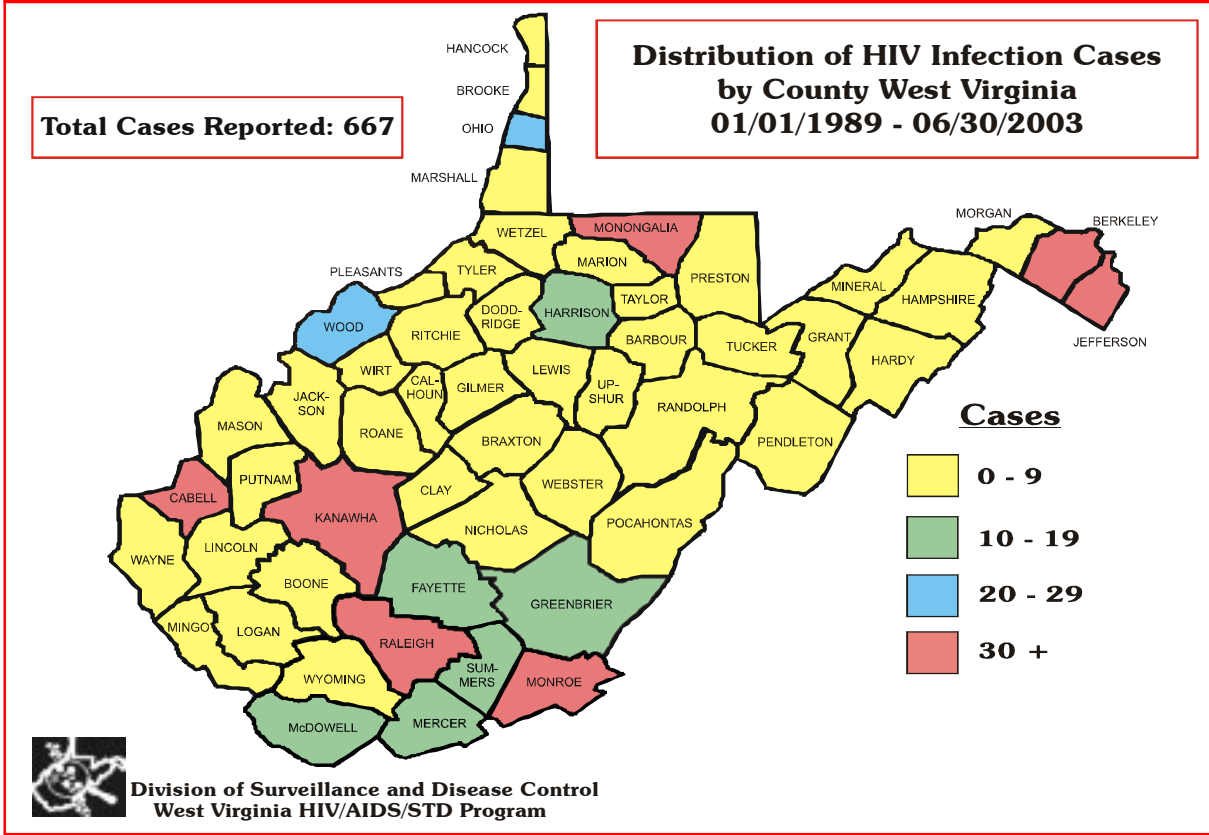
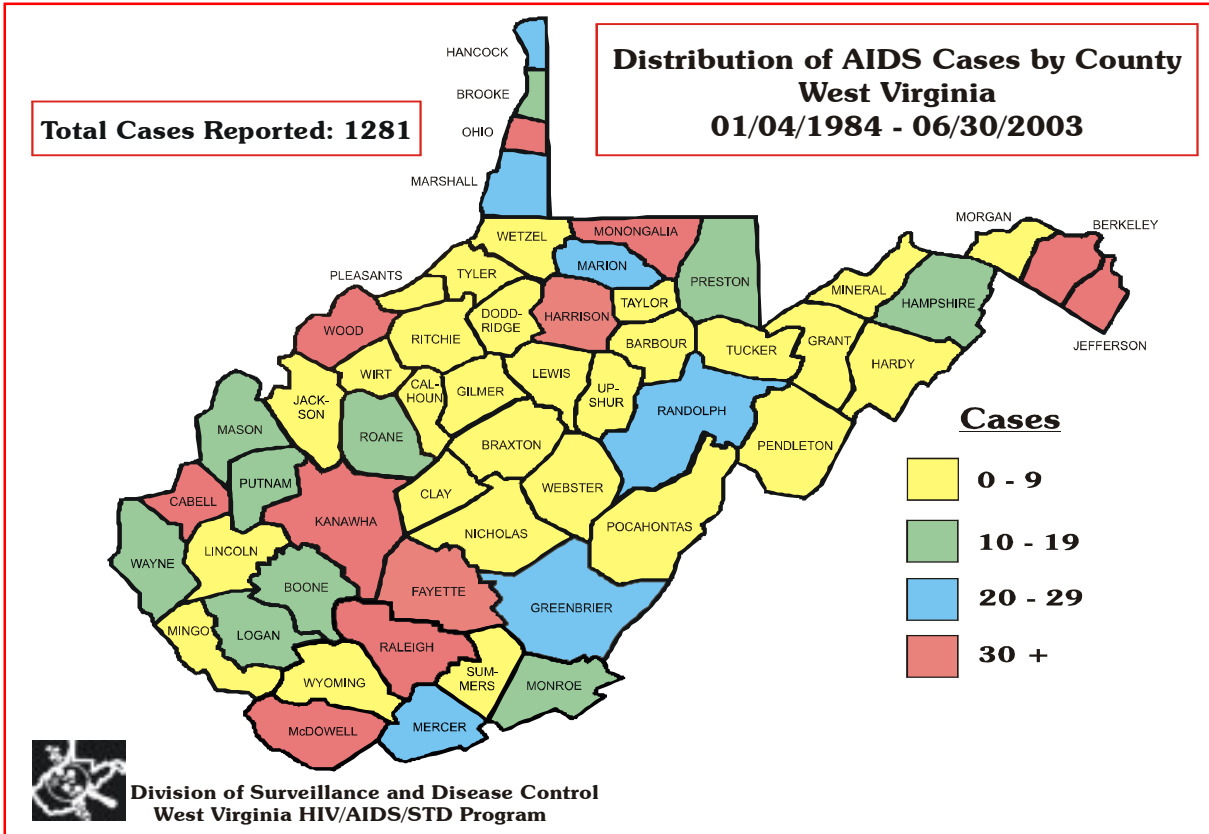
* AIDS data includes April 1984 through June 30, 2003, and HIV data includes January 1989 through June 30, 2003.

^ Other risk behavior includes cases reported with no risk identified that have been closed to follow-up.

~ Age group intervals depicted in the table above may not be uniform due to:

- a) Small number of cases in the under 13 age groups.
- b) Cases twelve years of age and under are pediatric cases.
- c) 13-19 being the adolescent age group.

Note: Percent in columns may not add up to 100% due to rounding.



(Cancer, continued from page 1)

colon and rectum, prostate and female breast and the most common cancers. These are not, however, the cancers typically seen in confirmed cancer clusters. Recent epidemiologically-confirmed cancer clusters have involved rare types of leukemia or brain tumors or, as noted above, mesothelioma.

- They may involve an increased number of cases of a certain type of cancer in an age group not usually affected by that cancer.

Investigation of cancer clusters requires identification of the type of cancer involved, and the time period and geographic area of concern. This really amounts to the case definition for the cluster, just as investigations of infectious diseases use case definitions. It's also important to determine whether the reported exposures are biologically and environmentally plausible causes of the cancers included in the investigation. Some substances are well known for their ability to cause cancer, while others do not appear to be as harmful. Cluster investigations also involve statistical testing to determine whether an excess of cases have, in fact, been observed and whether the

cases are associated with the exposures.

If you believe there is a cancer cluster in your community, the WVCR will investigate your report. The following information will be requested:

- The types of cancer suspected and the geographic area and time period of concern.
- The names and contact information for persons believed to be involved in the cluster, as well as information about when and where (e.g., the hospital) they were diagnosed with cancer.
- The suspected exposures, including the names of the substance(s), the source(s), where the exposure(s) occurred and the time period involved.

For more information about cancer clusters, visit the National Cancer Institute website (www.cancer.gov) or the Centers for Disease Control and Prevention's cancer site (www.cdc.gov/health/cancer.htm). The West Virginia Cancer Registry can be contacted at (304) 558-6421, or from within West Virginia at 1-800-423-1271. ☒

Division of Surveillance & Disease Control		Epidemiology	(304) 558-5358
AIDS Surveillance	(304) 558-2987	Immunization	(304) 558-2188
AIDS Prevention	(304) 558-2195	STD Program	(304) 558-2950
Cancer Registry	(304) 558-6421	TB Control	(304) 558-3669

The **Epi-Log** is published quarterly by the West Virginia Department of Health and Human Resources, Bureau for Public Health, Office of Epidemiology & Health Promotion, Division of Surveillance and Disease Control. Graphic layout by Chuck Anziulewicz. Please call the Division of Surveillance & Disease Control at (304) 558-5358 if you need additional information regarding any article or information in this issue, or if you have suggested ideas you would like to contribute for a future issue.

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