



# The Great Lakes EpiCenter News

Epidemiology Project of the Great Lakes Inter-Tribal Council, Inc.

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Epidemiology is the study of the distribution and determinants of health-related states or events in specified populations and the application of this study to the control of health problems.

The EpiCenter provides epidemiological services to the Tribes in the Bemidji Area (Michigan, Wisconsin, and Minnesota). The services include training and technical assistance in many areas of public health, data management, program planning, and program evaluation.

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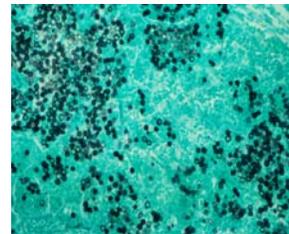
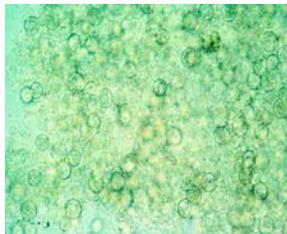
## **Blastomycosis in Wisconsin: A severe systemic fungal infection in man and animals and an environmental enigma**

Submitted by John Archer

Blastomycosis is fungal disease of man, dogs, and occasionally other animals (1-3). The etiologic agent that causes blastomycosis is *Blastomyces dermatitidis*, a dimorphic fungus that exists in the mold phase in nature or on culture media incubated at 22°C to 30°C. It is the mold phase in which the infectious conidia (2-10 mm) are produced (*Below*).



It may also appear in the yeast phase in sputum (*Bottom, left*) or tissue (*Bottom, right*) or when grown on specially enriched media at 37°C and is characterized by a thick-walled, broad-necked yeast cell (8-15 mm) (*Below*).



## **Background**

Blastomycosis was first reported in 1894 by a Chicago dermatologist, Dr. T.C. Gilchrist, and later became known as "Gilchrist's Disease" (4). The disease has also been referred to as "North American Blastomycosis" and other names based on local occurrence of endemic infections such as "Chicago disease" and "Namekagon River Fever". It was not identified in dogs until 1916 (5). Until 1952, only 16 cases of canine blastomycosis were reported in the U.S. (6). Since that time, there has been a dramatic increase in the number of reported cases in humans and canines in the U.S., especially east of the Mississippi River.

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### Nationwide Outbreaks of Blastomycosis

Between 1954 and 1990, at least 12 blastomycosis outbreaks were reported in the medical literature in the continental U.S. Typically these outbreaks occurred east of the Mississippi River. Five of the reported outbreaks occurred in the north central, northwest and northeast regions of Wisconsin (Table 1). Since 1990 additional outbreaks have been reported in peer-reviewed articles and state newsletters, but their numbers are infrequent.

Year	County	Cases	Activities
1979	Sawyer	7	Canoeing and camping along the Namekegon River
1984	Vilas	48	Walking on a beaver dam and beaver lodge
1985	Portage	7	Fishing along the Tomorrow River
1985	Waupaca	7	Playing in an underground fort along the Crystal River
1990	Oconto	10	Miscellaneous activities involving disturbing soil

### Blastomycosis in Nature

Blastomycosis is one of the diseases for which the ecologic niche remains an enigma. It appears that *B. dermatitidis* is nourished on acid soils with high organic content, abundant moisture, and possibly enrichment by animal droppings. Despite thousands of attempts, the fungus has only been successfully isolated twice in nature from environmental samples in relation to the occurrence in human illness both times in Wisconsin (7-8). Further subsequent repeated testing at specific locations where the organism was previously isolated yielded negative results. A complete description of the environmental factors that affect *B. dermatitidis* remains a mystery. Without more precise understanding of the ecology of *Blastomyces* in nature, it is extremely difficult to prevent recurrent illness or to apply appropriate control measures. The only clues to the source of this organism lie in the limited description of the substrates from which the organism has been infrequently isolated (9).

### Blastomycosis in Wisconsin

Blastomycosis has been reportable in Wisconsin since 1984 and it is the most prevalent of the systemic fungal infections in Wisconsin. During 1999 through 2003, Wisconsin averaged 102 cases of blastomycosis reported annually. Of the 513 cases reported during that time period 65% occurred in males and almost two-thirds (64%) of the cases were in people 40 years old or older.

Cases were reported throughout the year with a slight increase (55% vs. 45%) occurring between October and March. Based on investigations of blastomycosis infections in with likely sources of exposure to *Blastomyces* spores can be reliably fixed, incubations periods ranged from just under two weeks to almost 15 weeks (9). This data may indicate that infections occurring late in the fall and winter months are typically associated with autumn exposures.

**Reported cases of blastomycosis in Wisconsin, 1999-2003 (n=513)**

<u>Gender</u>		<u>Race</u>		<u>Age Group</u>		<u>Region</u>	
Males	331	White	293	0-12	23	Northern	210
Females	177	Black	14	13-19	27	Northeastern	122
Unknown	5	Am Indian	28	20-29	46	Western	37
		Asian	11	30-39	88	Southern	19
		Other	1	40-49	110	Southeastern	91
		Unknown	166	50+	218	Unknown	34
				Unknown	1		

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### Additional Comments:

Although the number of cases reported in 2003 (83 cases), was a substantial decrease compared to 1999 thru 2002, there were six deaths and half of those deaths were in people under 30 years of age. This is striking as Wisconsin averaged three deaths a year typically in persons over 50 years of age.

To help answer some of the many questions regarding the ecology and epidemiology of *Blastomyces dermatitidis*, the Bureau of Communicable Disease (BCD) has developed a new *Blastomycosis Follow-Up Worksheet* that is used to collect data on the likely known exposures. The data will be entered into a new database.

### Top 15 Counties of Blastomycosis Infections in Wisconsin, 1999-2003 Incidence Rate per 100,000 Population

1. Menomonee (11)	47.9	9. Bayfield (9)	11.7
2. Vilas (41)	37.9	10. Oconto (21)	11.3
3. Lincoln (39)	26.0	11. Shawano (23)	11.1
4. Forest (11)	21.7	12. Price (5)	6.3
5. Iron (5)	14.4	13. Marathon (39)	6.1
6. Sawyer (12)	14.3	14. Waupaca (16)	6.1
7. Oneida (25)	13.3	15. Langlade (4)	3.8
8. Washburn (10)	12.1		

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**SuAnne Vannatter**

I am a member of the Lac du Flambeau Band of Lake Superior Chippewa Indians. An older brother and I were adopted and raised by Virgil and Ernestine Murphy, Stockbridge-Munsee, Band of Mohican tribal members. I grew up on and near the Stockbridge reservation, graduating from Bowler High School many moons ago. I have attended Covenant College in Tennessee, UW Oshkosh and UW Green Bay. I finally received my Bachelor's of Science in nursing from Bellin College of Nursing in Green Bay in 2003. Upon graduation I relocated my family to Lac du Flambeau to work as an RN, hoping to focus on health promotion and disease prevention.

Outside of work my favorite past time is sitting on the bleachers of my sons' sporting events, traveling, laughing and watching movies. I am thrilled to be working as the coordinator of the Healthy Children Strong Families Project to reduce the health disparity of obesity that is affecting our Native children.

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**Wisconsin Indian Youth Conference**

Submitted by Kathleen Skoraczewski

It was another successful year for the Wisconsin Indian Youth Conference. Seventeen high school students from around the state converged on UW-Stevens Point campus for a week packed with a wide variety of activities. The students attended academic sessions, learned about college life, and spent time bonding with their peers. Some of the educational opportunities included lessons in orienteering, epidemiology, native teachings, nutrition, rainforest wildlife, and preparing for success in college. Time was also spent enjoying recreational activities around campus including swimming, movies, and tubing on

the Plover River. One of the highlights of the week was a field trip to Wisconsin Dells. In the Dells the students visited Noah's Ark Water Park, Tommy Bartlett Exploratory, and took a ride on the Original Wisconsin Ducks. The students spent the night camping at Jellystone Park where they enjoyed a campfire talk with Elders of the Ho-Chunk Nation. The week culminated with a closing banquet featuring keynote speaker Allen Cloud, who encouraged the students to understand the value of their educational options and make good choices for their future.



**Bemidji Area Annual Diabetes Coordinators Meeting**

September 21-22, 2005

**Theme:** Interviewing techniques to increase positive patient behaviors that prevent and decrease the impact of diabetes on Native American people.

Holiday Inn Select Hotel & Suites  
3 Appletree Square  
Bloomington, MN

See our website for further details.  
<http://www.glitc.org/epicenter/events>



Smiles All Around at the Closing Banquet



# August is National Immunization Awareness Month<sup>†</sup>

## Are you up-to-date?

Prepared by Allison LaPointe

Vaccinations have been heralded as one of the greatest achievements of public health. Important not only for the young and old, but for all ages in between, staying current on vaccinations prevents the transmission of infectious disease, and keeps our communities healthy. Preventing disease as opposed to treating ill patients saves health systems and communities exponentially larger sums of money in terms of direct and indirect costs than the original cost to provide the vaccine.

### **Notebooks? Check. Backpack? Check. Immunizations? ...**

It is not recommended to wait until the fall, 'back to school time' offers a reminder and an opportunity to get caught up on missed or delayed shots. Delaying shots is a serious matter as it can put children at risk for vaccine-preventable illnesses to which they could be exposed in school such as chickenpox, mumps, and measles. The National Immunization Program (NIP) at the CDC <http://www.cdc.gov/nip/default.htm> provides general immunization information as well as updates on standard immunization and catch-up schedules. While nationally the rates of childhood immunizations are increasing, the NIP recently reported that only nine percent of children receive the full schedule of vaccinations at the recommended time.

The IHS immunization program<sup>\*</sup> reported immunization rates for the Bemidji area IHS user population aged 3-27 months at 88% in the 4<sup>th</sup> quarter of FY2004, well above the national average of 63% for all IHS areas during the same time period. However, we can still do better to see that all of our children heading back to school are up-to-date on their shots to ensure that they have a happy and healthy school year. Healthy kids lead to healthy communities!

*†: For printable materials such as posters, brochures and bookmarks to help promote National Immunization Awareness Month, please visit: [http://www.partnersforimmunization.org/niam\\_prkit.html](http://www.partnersforimmunization.org/niam_prkit.html)*

*\*: For information on the IHS immunization program, please contact Amy Groom, IHS National Immunization Coordinator [Phone: (505) 248-4374; Fax: (505) 248-4393; Email: [Amy.Groom@mail.ihs.gov](mailto:Amy.Groom@mail.ihs.gov)*

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## 2<sup>nd</sup> Annual Regional Emergency Preparedness Conference

Submitted by Kristen Dunlap

The 2<sup>nd</sup> Annual Regional Emergency Preparedness Conference was held in Mount Pleasant, Michigan from the 21<sup>st</sup> to the 23<sup>rd</sup> of June. Participants represented several states, many disciplines, and a plethora of agencies. The conference was designed to disseminate the most current emergency preparedness information as well as allow participants an opportunity to network with one another. Representatives from the FBI, CDC, FEMA, DOT, and many local agencies provided information for emergency responders. This year two tracks were offered, Homeland Security and Emergency Public Health Preparedness. At the conclusion of the second day, the two tracks joined together to participate in a table-top exercise. On the third day, state-specific break out sessions allowed participants to discuss current emergency response topics and is-

sues in order to facilitate the planning and preparation process. As a result of the conference, relationships between Tribal, federal, state and local emergency planners and responders were strengthened.

### Next steps:

1. Tribal leadership involvement.
2. Recognition of specific tribal population groups and needs: mental health, school safety and special populations.
3. Need to create trained staff, volunteers and tribal response teams.
4. Building more local and regional partnerships.
5. Enforcing the current infrastructure in fire, safety and management.

**Great Lakes EpiCenter Mission:** To support Tribal communities in their efforts to improve health by assisting with data needs through: Partnership Development, Community Based Research, Education, and Technical Assistance.

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