

Epi Report

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scienceblogs.com

Red blood cell bursting after
malaria infection.



female *Anopheles* mosquito.

Malaria

By Glenda Diaz, Communicable Disease Investigator

Malaria seems like a galaxy far, far away. It stopped being common in the US a little less than a century ago, and even though now only a handful of cases are reported each year, it still remains a problem in other parts of the world. Infrastructure, politics, beliefs, and cultures all pose barriers to gaining treatment and prevention education to roll back the problem with malaria.

Arizona currently has the vector that can carry malaria, *Anopheles freeborni*. This mosquito was once the carrier of malaria in Arizona until malaria was eradicated in the early 1900s, which was carried out mainly by controlling the mosquito population.

When prevention is not enough we need to be prepared to recognize the symptoms of malaria. Treating early in the infection can prevent complications, including death. The first symptoms commonly associated with malaria are most often fever, chills, sweats, headaches, muscle pains, nausea and vomiting, but are not specific and are also found in other diseases (such as influenza and other common viral infections). Physical findings include elevated temperature, perspiration, tiredness, enlarged spleen, mild jaundice, enlargement of the liver, and increased respiratory rate. In severe malaria, clinical findings can range from confusion, coma, neurologic focal signs, severe anemia, respiratory difficulties, low blood pressure, hypoglycemia, and metabolic acidosis. These may increase the suspicion index for malaria.

Our next door neighbor, Mexico, does not see many cases of malaria either, but have recently reported cases. Malaria is a product of human behavior mixed with vector behavior that at the right time and place can set off a pathway of damage.

If an infected person is bitten by this mosquito during the time that the human is carrying a large load of parasites (parasitemia), the mosquito will ingest the parasite. The parasite will replicate in its gut, and once it has matured to the sporozoite form it will travel up to the mosquito's salivary glands ready to be delivered at the mosquito's next meal.

This scenario can easily occur in our area. Our job is to prevent this from happening by avoiding mosquitoes from inhabiting our backyards. Remove standing water and items where water could potentially stand after the rain such as empty flower pots, tires, bird baths, etc. Keep in mind when traveling to malaria endemic areas that there is prophylaxis available to avoid developing the disease. Most importantly, be prepared to recognize the symptoms of disease so that we may keep malaria from becoming a problem again.

To learn more about Malaria disease transmission, symptoms and diagnosis go to: <http://www.cdc.gov/malaria/>. Guidelines for treatment of Malaria in the U.S are available at: <http://www.cdc.gov/malaria/resources/pdf/treatmenttable73109.pdf>. Malaria is a reportable disease, and all suspect cases should be reported to the Pima County Health Department at (520) 243-7797 or, after-hours at (520) 743-7987. Please contact the Pima County Health Department for further information.



2010 Arboviral Season

By Babs Johnson, Epidemiologist

The mosquito trapping season started in Arizona and Pima County on April 12, 2010. The SWAT (Strategic Warriors Against Transmission), team has started its surveillance and control of the mosquito populations in Pima County. The SWAT team is a dedicated group of individuals that have been working together since 2004 to trap, control and educate our county about West Nile virus (WNV) transmission and prevention. Across the US, 722 human cases were reported in 2009, Arizona reported 20 of them. In 2009, Pima County was lucky finding only one sentinel chicken positive for WNV, the remainder of the mosquito and chicken surveillance samples were negative for both WNV and St. Louis Encephalitis (SLE). Our human surveillance was negative for WNV cases also. We started receiving mosquito complaints in late February this year and expect at least more activity in our traps. We continue to monitor and educate individuals on how to protect themselves as well as their families from these potentially severe Arboviral diseases.

For information on West Nile Virus please go to our webpage <http://www.pimahealth.org/disease/westnile.asp>. There you will find information on insect repellants for adults and children, FAQ's on how to make your environment free of mosquitoes, signs and symptoms of WNV, the transmission cycle as well as an interactive map of mosquito activity in Pima County.

We encourage our public health partners to keep the Arbovirus' in your differential for all hospitalized patients with viral meningitis, patients presenting with encephalitis and patients presenting with flaccid paralysis.

West Nile virus is a reportable disease, and all suspect cases should be reported to the Pima County Health Department at (520) 243-7797 or, after-hours at (520) 743-7987. It is important to remember that IgM is required for diagnosing viral illness. Please contact the Pima County Health Department for further information.

National Mosquito Control Awareness Week this year is June 20-26, 2010.

The SWAT team welcomes guest presentations and new members at any time. *For more information on meetings and joining the team, email Babs Johnson at babs.johnson@pima.gov.*

Obesity and Chronic Disease: The Need for Surveillance

By Lisa Labita Woodson, Epidemiologist

Obesity affects one out of every three Americans. An estimated 300,000 deaths per year may be attributable to obesity and the risk of death rises with increasing weight. Obesity threatens to cut U.S. life expectancy by as much as five years over the next few decades unless efforts are made to decrease the rate of obesity. The U.S. has seen dramatic increase in the prevalence of obesity over the last 20 years and although new studies have shown that the trend has recently stabilized, obesity remains a leading public health concern. The prevalence rate of obesity is still high and is linked to other health consequences such as heart disease, diabetes, cancer, arthritis, infertility, and asthma.

Like the national statistic, an average of one in three Arizona residents is obese. Those at higher risk for obesity in Arizona are Hispanic, men, and between the ages of 25-34 years. Among Arizona's middle school and high school students, 12 percent are obese. Obese children and adolescents have higher rates of developing diabetes, coronary heart disease, atherosclerosis, hip fracture, and gout as adults. Additionally, childhood obesity is associated with several psychosocial problems in adulthood, especially among females.

One of the objectives set forth by the Healthy People 2010 initiative is to decrease obesity prevalence to less than 5% for children and adolescents aged 6-19 years and 15% for adults aged 20 years and older. To reach this goal, comprehensive disease surveillance systems are needed to develop health policies, implement effective interventions, and track populations at high risk. The Center for Disease Control recognizes that obesity and chronic disease data is limited at the local level where most interventions and policies are enacted.

Surveillance systems such as the National Health Interview Survey and the Behavioral Risk Factor Surveillance System (BRFSS) have been used traditionally to track state and national level data. Although there has been push for more local data within these systems, it is important for counties to start collecting data in their own communities. By having local data available on health concerns such as obesity and chronic diseases, we are better equipped to reach our health objectives.

An effective way to collect local data and to gain a better understanding our health disparities is through a community health assessment. It is a process that provides our county with the opportunity to collaboratively identify and evaluate health issues with community stakeholders. The purpose of a community health assessment is to improve the health of the community by providing facts upon which to base programmatic and organizational decisions; plan effective, collaborative interventions; advocate for policy change; market our community; build partnerships and coalitions; and to identify emerging health issues. The findings from a community health assessment can provide the basis for discussion and action to improve the health of the community through an environment of change.

With obesity becoming an ever prevalent health concern in our community, it is important that we understand the scope of the problem. With a community health assessment, we can have a greater understanding of the prevalence of obesity among our residents by census tract, age, race/ethnicity, sex, etc. With continued future assessments, we can also gauge how we are doing as a community in combating this disease.

Summary of Selected Reportable Diseases for Pima County (Year to Date)

Enteric Diseases:	January- April 2010	January- April 2009
Amebiasis	3	4
Campylobacter	30	43
Shigella	10	20
Salmonella	44	51
Hepatitis A	2	0
Giardia	3	24
Vaccine Preventable Diseases:		
Pertussis	9	8
Measles	1	0
Mumps	1	0
Rubella	0	0
Tetanus	0	0
H. Influenzae, serotype b (<5 years of age)	6	2
Invasive Diseases:		
Streptococcus pneumoniae	79	71
Streptococcus Group A	20	16
Streptococcus Group B (in infants <90 days old)	6	3
MRSA	63	67
Diseases Involving Central Nervous System:		
Meningococcal Infection	2	1
Aseptic Meningitis	9	11
HIV & Sexually Transmitted Diseases:		
HIV	17	75
Chlamydia	1244	1281
Gonorrhea	139	102
Syphilis	22	44
Granulomatous Infections:		
Tuberculosis	5	5
Coccidioidomycosis	385	230
Vector-Borne & Zoonotic Diseases:		
West Nile Virus	0	0
Animal Rabies	13	38

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Please contact Francelli Lugo at telephone number (520) 243-7797 or by fax at (520) 791-0366 to update your current contact information.

Statistical data for the years 2009-2010 reflects communicable disease reports of confirmed, probable, and suspect cases received via the Medical Electronic Disease Surveillance Intelligence System (MEDSIS) from 01/01/2009 to 04/30/2009 and 01/01/2010 to 04/30/2010, respectively. TB data provided by Tuberculosis Control Program. STD data extracted from the NATP database. Data are provisional and subject to change.
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