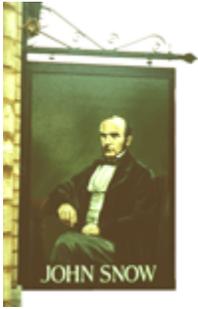


Quarterly Epidemiologic Report

Jul – Sept '04

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150th Anniversary of John Snow and the Pump Handle

(excerpt from *MMWR*. 2004; 53(34):783)

John Snow, M.D. (1813-1858), a legendary figure in epidemiology, provided one of the earliest examples of using epidemiologic methods to identify risk for disease and recommend preventive action.¹ Best known for his work in anesthesiology, Snow also had an interest in cholera and supported the unpopular theory that cholera was transmitted by water rather than through miasma (i.e., bad air).

On August 31, 1854, London experienced a recurrent epidemic of cholera; Snow suspected water from the Broad Street pump as the source of disease. To test his theory, Snow reviewed death records of area residents who died from cholera and interviewed household members, documenting that most deceased persons had lived near and had drunk water from the pump. Snow presented his findings to community leaders, and the pump handle was removed on September 8, 1854. Removal of the handle prevented additional cholera deaths, supporting Snow's theory that cholera was a waterborne, contagious disease. Despite the success of this investigation, the cause of cholera remained a matter of debate until *Vibrio cholerae* was isolated in 1883.

Snow's study and the removal of the pump handle became a model for modern epidemiology. This issue of *MMWR* (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5334a1.htm>) recognizes his pioneering work and highlights public health actions guided by epidemiologic data to control a modern epidemic of cholera, detect and prevent adverse reactions to vaccinations, stop an epidemic of aflatoxin poisoning, and correct environmental causes of waterborne outbreaks.

Reference

1. Snow J. On the mode of communication of cholera. 2nd ed. In: Snow on Cholera. (Reprint.) New York, New York: Hafner Publishing Co., 1965. Available at <http://www.ph.ucla.edu/epi/snow.html>.

Influenza Surveillance is here!



It's that time of year again! The MCDPH annual influenza surveillance will begin October 1st. Every year the MCDPH works with local emergency departments, schools, long-term care facilities, and Cigna health care sites to track the number of patients and students with influenza-like-illness (ILI) each week. If you are interested in participating in this important surveillance program, call Andrew Edmonds at (602) 372-2619 or email: andrewedmonds@mail.maricopa.gov.

Disease of the Quarter: Schistosomiasis



Trematode flatworms (flukes) of the genus Schistosoma.

Excerpt from the *Schistosomiasis* fact sheet on the CDC, Division of Parasitic Diseases website:

http://www.cdc.gov/ncidod/dpd/parasites/schistosomiasis/factsht_schistosomiasis.htm

What is schistosomiasis?

Schistosomiasis, also known as bilharzia (bill-HAR-zi-a), is a disease caused by parasitic worms called schistosomes. Infection with *Schistosoma mansoni*, *S. haematobium*, and *S. japonicum* causes illness in humans. Although schistosomiasis is not found in the United States, 200 million people are infected worldwide, 85% of whom live in Africa. It is common in many parts of Sudan, Kenya and Ethiopia.

How can I get schistosomiasis?

Infection occurs when your skin comes in contact with contaminated fresh water in which certain types of snails that carry schistosomes are living. Fresh water becomes contaminated by *Schistosoma* eggs when infected people urinate or defecate in the water. The eggs hatch, and if certain types of snails are present in the water, the parasites grow and develop inside the snails. The parasite leaves the snail and enters the water where it can survive for about 48 hours. *Schistosoma* parasites can penetrate the skin of persons who are wading, swimming, bathing, or washing in contaminated water. Within several weeks, worms grow inside the blood vessels of the body and produce eggs. Some of these eggs travel to the bladder or intestines and are passed into the urine or stool. Go here to see the life cycle: <http://www.dpd.cdc.gov/dpdx/HTML/Schistosomiasis.htm>



Intermediate snail host

What are the symptoms of schistosomiasis?

Most people have little or no symptoms for many years and do not realize they are infected. However, as eggs travel to the liver or pass into the intestine or bladder some people develop abdominal pain, bloody stools, or bloody urine. Rarely, eggs are found in the brain or spinal cord and can cause seizures, paralysis, or spinal cord inflammation. For people who are repeatedly infected for many years, the parasite can damage the liver, intestines, lungs, and bladder which can lead to jaundice (yellow eyes or skin), abdominal swelling, and vomiting blood.

How is schistosomiasis diagnosed?

A blood test has been developed and is available at CDC. For accurate results, you must wait 6-8 weeks after your last exposure to contaminated water before the blood sample is taken. A positive blood test means that you have been infected with schistosomiasis at some point in your past. Because the parasite can live for many years, if you have not been treated for schistosomiasis in the past, this means you are very likely to still be infected. Other tests (stool or urine samples) can sometimes diagnose the infection as well.

What is the treatment for schistosomiasis?

Safe and effective oral drugs are available for the treatment of schistosomiasis. You will be given pills to take for 1-2 days. Praziquantel is the drug of choice for all species of *Schistosoma*.

Am I at risk?

If you live(d) in or travel(ed) to areas where schistosomiasis occurs and your skin comes in contact with fresh water from canals, rivers, streams, or lakes, you are at risk of getting schistosomiasis.

In what areas of the world does schistosomiasis occur?

- Africa: southern Africa, sub-Saharan Africa, Lake Malawi, the Nile River valley in Egypt
- South America: including Brazil, Suriname, Venezuela
- Caribbean: Antigua, Dominican Republic, Guadeloupe, Martinique, Montserrat, Saint Lucia (risk is low)
- The Middle East: Iran, Iraq, Saudi Arabia, Syrian Arab Republic, Yemen
- Southern China
- Southeast Asia: Philippines, Laos, Cambodia, Japan, central Indonesia, Mekong delta

How can I prevent schistosomiasis?

- Avoid swimming or wading in fresh water when you are in countries in which schistosomiasis occurs. Swimming in the ocean and in chlorinated swimming pools is generally thought to be safe.
- Drink safe water. Because there is no way to make sure that water coming directly from canals, lakes, rivers, streams or springs is safe, you should either boil water for 1 minute or filter water before drinking it. Boiling water for at least 1 minute will kill any harmful parasites, bacteria, or viruses present. Iodine treatment alone WILL NOT GUARANTEE that water is safe and free of all parasites.
- Bath water should be heated for 5 minutes at 150° F. Water held in a storage tank for at least 48 hours should be safe for showering.
- Vigorous towel drying after an accidental, very brief water exposure may help to prevent the Schistosoma parasite from penetrating the skin. You should NOT rely on vigorous towel drying to prevent schistosomiasis.

For more information:

http://www.cdc.gov/ncidod/dpd/parasites/schistosomiasis/factsht_schistosomiasis.htm

World Health Organization information on Schistosomiasis:

<http://www.who.int/tdr/diseases/schisto/>

Upcoming conferences

Nov 6-10

Title: American Public Health Association (APHA) 132nd Annual Meeting and Exposition

City: Washington, DC

Theme: Public Health and the Environment

Website: <http://www.apha.org/meetings/>

The Quarterly Epidemiologic Report is now on the web: http://www.maricopa.gov/public_health/epi/ger.asp

West Nile Virus Update



Enhanced surveillance for West Nile Virus (WNV) is ongoing for the 2004 mosquito season. This includes mosquito pool testing, dead bird collection, and sentinel chicken flock surveillance. The table below shows the current case counts (as of Sept. 24, 2004) for WNV activity in the United States for states reporting 20 or more cases. For the latest information on WNV call the Maricopa County Department of Public Health WNV Public Information Hotline at 602-747-7500 from 8a-8p, 7 days per week or the ADHS 24-hr hotline at 1-800-314-9243 or 602-364-4500 in the Phoenix Metro area. ☺

2004 West Nile Virus Activity in the United States – Selected States* (Reported to CDC as of September 24, 2004)

**in the interest of space only states reporting ≥ 20 human cases are listed*

State	Neuroinvasive disease	Fever	Other clinical/unspec	Total human cases reported to CDC	Deaths
Arizona	128	58	178	374	7
California	131	206	246	583	16
Colorado	32	193	0	225	2
Florida	27	5	0	32	1
Illinois	24	26	1	51	2
Kansas	16	21	0	37	1
Louisiana	43	10	0	53	3
Minnesota	13	20	0	33	2
Mississippi	20	4	1	25	3
Missouri	24	5	1	30	1
Nebraska	2	20	0	22	0
Nevada	24	19	0	43	1
New Mexico	28	43	4	75	4
N. Dakota	2	18	0	20	1
S. Dakota	5	41	0	46	1
Texas	69	17	0	86	8
Total for all states reporting cases	692	777	440	1909	61

Neuroinvasive disease refers to severe disease cases, particularly West Nile meningitis and West Nile encephalitis.

West Nile fever refers to typically less severe cases that show no evidence of neuroinvasion. This is not currently a nationally notifiable disease, and therefore is optional whether or not state health departments report these to the CDC.

Other clinical includes persons with clinical manifestations other than WN fever, WN encephalitis, or WN meningitis, such as acute flaccid paralysis.

Unspecified cases are those with insufficient clinical information.

Total human cases reported to CDC – Reflects both mild and severe human diseases occurring between Jan. 1 through Oct. 8, 2004 that have been reported to ArboNet by state and local health departments.

Of the 1909 cases, 692 (36%) were WN meningitis or WN encephalitis (neuroinvasive disease), 777 (41%) were WN fever, 440 (23%) were clinically unspecified at this time.

West Nile Virus links

Maricopa County Department of Public Health websites:

Mosquito reduction and avoidance, dead bird reporting:

<http://www.maricopa.gov/envsvc/water/vector/backyard.asp>

Fogging map: <http://www.maricopa.gov/envsvc/WATER/docs/WNV/20040913fog.pdf>

General information on WNV: http://www.maricopa.gov/public_health/wnv/

Fight the Bite flyer:

http://www.maricopa.gov/public_health/wnv/docs/WNV-FightTheBite.pdf

Arizona Department of Health Services website on WNV: www.westnileaz.com

ADHS toll-free number: 1-800-314-9243 provides information about WNV.

CDC: <http://www.cdc.gov/ncidod/dybid/westnile/index.htm>

Mexico: <http://www.cenave.gob.mx/von/default.asp>



Enhanced Surveillance October 11 – November 16, 2004

Due to Homeland Security concerns surrounding the upcoming presidential debate in Tempe and the presidential elections in November, the MCDPH has initiated enhanced surveillance activities for unusual disease events and health conditions. Please maintain a high index of suspicion for any unusual disease occurrences during this time period and notify MCDPH immediately.

Contact MCDPH week days at (602) 506-6767 or
Weekend, holidays, and after hours at (602) 747-7111, or
ADHS Disease Surveillance at (602) 364-3676 or 1-800-496-9660.

As part of the enhanced surveillance, please provide a daily status report to MCDPH even if there are no cases to report. Send e-mail update to: surv@mail.maricopa.gov by NOON everyday.

The Lost Boys and Girls of Sudan Health Survey

The Centers for Disease Control and Prevention (CDC), in collaboration with the Arizona Department of Health Services (ADHS) and the Maricopa County Department of Public Health (MCDPH), worked together to formulate a plan to evaluate the occurrence of chronic abdominal pain as well the prevalence of schistosomiasis among the Lost Boys and Girls of Sudan. The first national Lost Boys and Girls Reunion was held in Phoenix, AZ from August 26-29, 2004 which provided an ideal setting to conduct the health survey and evaluation.

In 2001 over 3,000 Sudanese orphan refugees, commonly referred to as “the Lost Boys and Girls of Sudan” were resettled in the United States. Over 300 of them were relocated in Arizona. Since their arrival in the US, the Dept of Health and Human Services (HHS) has received reports of chronic abdominal pain among these refugees. *Schistosoma mansoni* was recently diagnosed from biopsy specimens from two Lost Boys with chronic abdominal pain. And another clinic has diagnosed schistosomiasis in approximately 10% of a subset of age-appropriate Sudanese refugees (presumed to be Lost Boys and Girls).

Schistosomiasis, also known as bilharzia, is caused by parasitic worms called schistosomes. This disease is not found in the US, but 200 million people are infected worldwide; 85% of those affected live in Africa, primarily in Sudan, Kenya, and Ethiopia. Wading, swimming, bathing, or washing in contaminated water can lead to infection. For more information on schistosomiasis see the Disease of the Quarter beginning on page 2 of this edition of the QER.

In summary, 460+ Lost Boys and Girls were surveyed and tested during their reunion in Phoenix. Of those tested, 44% were positive for schistosomiasis and over 90% received treatment on-site during the conference. Epidemiology staff and volunteers from various divisions within MCDPH, ADHS and the community administered questionnaires, drew blood and provided treatment to all of the willing participants. It was a great collaborative effort and was much appreciated by the CDC. Work is ongoing to finalize the results of the survey and to disseminate the results. These results will be available in future issues of the QER.

Lost Boys and Girls links:

Arizona Lost Boys and Girls Center: <http://www.azlostboyscenter.com>

Other articles on the Lost Boys: <http://www.sudanlostboys.com/>

CDC fact sheet on schistosomiasis:

http://www.cdc.gov/ncidod/dpd/parasites/schistosomiasis/factsht_schistosomiasis.htm

Maricopa County Health Status Report 1998-2002 Highlights

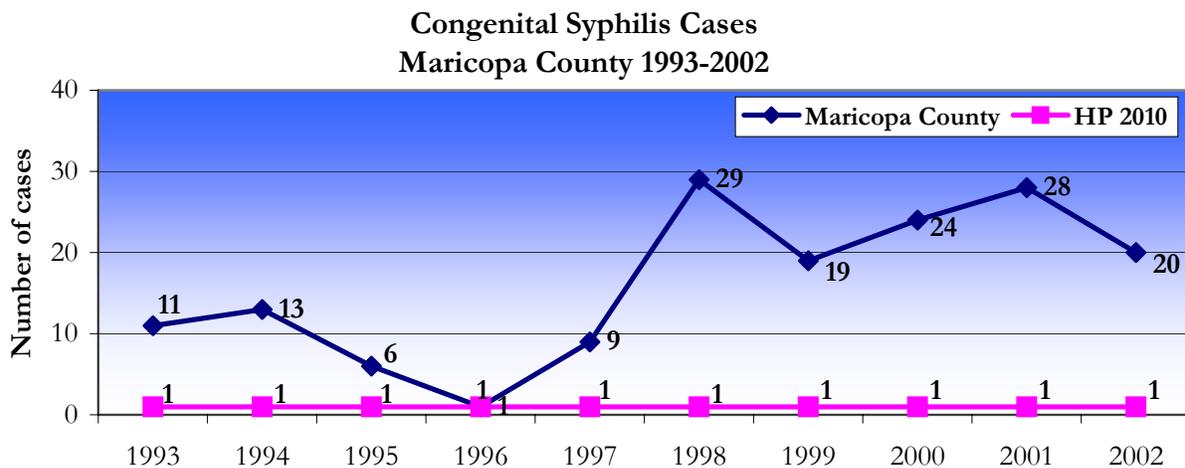
Excerpt from the Introduction of the HSR

The Maricopa County Health Status Report (HSR) 1998-2002 describes the health status of the community in the five-year period leading up to 2002. Topics included in this HSR include data on death, disease and births in the county. Breakdowns by gender, race/ethnicity and age as well as comparisons to national and state data are also included.

A few key findings include:

- Syphilis rates among both adults and children were high compared to other geographic areas and the nation.
- Tuberculosis case rates were highest among Asian and American Indian residents.
- Both the homicide death rate and suicide death rates were higher than the US rates.
- Infant mortality decreased between 1998 and 2002.
- While deaths from AIDS decreased over the five-year period, new cases of HIV were added consistently each year.

The HSR is intended to provide the community with the tools necessary to improve the health status of the county. While there were many positive aspects over the five-year period, there is still room for improvement. Maricopa County was far from achieving many of the Healthy People 2010 goals set by the Centers for Disease Control and Prevention (CDC). An example of what you will find in the HSR 1998-2002 is below.



For a complete look at the MC HSR 1998-2002 go to:

http://www.maricopa.gov/public_health/epi/docs/hsr/HSR-1998-2002.pdf

For the all of the figures and reference tables, go to:

http://www.maricopa.gov/public_health/epi/docs/hsr/HSR-1998-2002-tables.pdf

Maricopa County Communicable Disease Summary
Confirmed and probable cases reported in 2004 (as of September 30)

Disease					Yearly totals		
	1 Q	2 Q	3 Q	4 Q*	2004 YTD	2003 YTD	2002 YTD
Amebiasis	4	1	2		7	31	15
Anthrax	0	0	0		0	0	0
Aseptic Meningitis: viral	91	178	180		449	1062	162
Botulism	0	0	1		1	0	2
Botulism, Infant	0	0	0		0	0	0
Brucellosis	0	0	1		1	4	4
Campylobacteriosis	74	147	85		306	361	292
Cholera	0	0	0		0	1	0
Coccidioidomycosis (valley fever)	301	268	217		786	591	725
Colorado tick fever	0	0	0		0	0	0
Congenital Rubella	0	0	0		0	0	0
Conjunctivitis: acute	0	0	0		0	1	0
Creutzfeldt-Jakob disease	0	1	0		1	0	0
Cryptosporidiosis	0	3	1		4	3	13
Dengue	0	0	1		1	1	2
Diphtheria	0	0	0		0	0	0
Ehrlichiosis	0	1	0		1	0	0
Encephalitis: viral	4	10	13		27	35	13
<i>Escherichia coli</i> O157:H7	2	5	6		13	13	19
Giardiasis	33	25	14		72	126	102
H. influenzae: Invasive	20	8	9		37	36	33
Hansen's disease (Leprosy)	0	0	0		0	0	0
Hantavirus	0	0	0		0	0	1
Hepatitis A	17	29	26		72	111	120
Hepatitis B	267	288	246		801	738	649
Hepatitis C	447	294	241		982	1433	1102
Hepatitis D	0	0	0		0	2	5
Hepatitis Non-A, Non-B	0	0	0		0	0	0
Legionellosis	2	3	3		8	9	8
Leptospirosis	0	0	0		0	0	1
Listeriosis	2	0	1		3	5	5
Lyme Disease	1	5	10		16	13	8
Malaria	1	5	2		8	10	9
Measles	0	0	0		0	4	0
Meningococcal Invasive	2	5	3		10	11	16
Mumps	1	2	1		4	2	3
Pertussis (whooping cough)	37	70	66		173	86	62
Plague	0	0	0		0	0	0
Poliomyelitis	0	0	0		0	0	0
Psittacosis	0	0	0		0	0	0
Q fever	1	0	0		1	2	0
Rabies exposure	2	2	2		6	2	0
Relapsing fever (Borreliosis)	0	0	0		0	0	0

**Maricopa County Communicable Disease Summary
Confirmed and probable cases reported in 2004 (as of September 30)**

Disease					Yearly totals		
	1 Q	2 Q	3 Q*	4 Q†	2004 YTD	2003 YTD	2002 YTD
Reye syndrome	0	0	0		0	0	0
Rocky Mountain spotted fever	1	0	1		2	4	6
Rubella	1	0	0		1	1	0
Salmonellosis	69	77	84		230	283	212
Scabies	1	3	0		4	12	4
Severe acute respiratory syndrome	0	0	0		0	0	0
Shigellosis	41	53	51		145	213	228
Streptococcus pneumoniae	114	67	36		217	274	209
Streptococcal Group A: invasive	151	57	22		230	274	138
Streptococcal Group B: invasive	82	57	32		171	59	49
Taeniasis	0	1	0		1	3	1
Tetanus	0	0	0		0	0	0
Toxic shock syndrome (TSS)	1	3	0		4	5	0
Trichinosis	0	1	0		1	0	0
Tularemia	0	0	0		0	0	0
Typhoid Fever	2	0	0		2	1	1
Typhus Fever	0	0	0		0	1	0
Varicella (chickenpox)	463	337	56		856	473	78
Vancomycin-resistant Enterococcus	250	230	145		625	471	465
Vibrio infection	0	1	4		5	5	6
West Nile virus	1	197	190		388	8	0
Yellow fever	0	0	0		0	0	0
Yersiniosis	1	2	0		3	3	5

Source: MCDPH Communicable Disease Reporting system, 9/30/04.

*Q3 counts are underestimates of the actual count due to delays in data entry.

†Q4 counts will be available in the next QER.

October is Domestic Violence Awareness Month

- ✂ An estimated 4.5 million physical assaults are committed against US women by intimate partners annually. *(Source: US Dept. of Justice, July 2000.)*
- ✂ In Arizona, every 5 minutes a law enforcement officer responds to a domestic violence call; every 39 minutes one or more children witness a domestic violence incident. *(Source: Arizona Governor's Office)*
- ✂ Husbands and boyfriends commit an estimated 13,000 acts of violence against women in the workplace each year. *(Source: US Dept. of Justice, 1994)*

There are many DV events across the Valley throughout the month of October. For a complete list visit the Arizona Coalition Against Domestic Violence at:

www.azcadv.org or call 1-800-782-6400

If something about your relationship with your partner scares you and you need to talk, call the NATIONAL DOMESTIC VIOLENCE HOTLINE at:

1-800-799-SAFE (7233) or 1-800-787-3224 (TTY)

**MCDPH Division of Epidemiology
Contact Numbers (all 602 area code)**

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Kristin Cass	Executive Assistant	372-2604
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Andrew Edmonds	Surveillance Data Analyst	372-2619
Abrium Escárzaga	BT Epidemiologist	372-2643
Natalie Fuller	Surveillance Data Analyst	372-2613
Jeanette Gibbon	Epidemiologist	372-2642
Anita Gulati	Epidemiologist	372-2614
Robert Jones	Medical Dir, Surveillance/BDPR	372-2650
Ron Klein	Disease Surveillance Sup	506-6722
Chris Mahon	Program Admin, CHN	506-6771
Karen Moffitt	Senior Epidemiologist	372-2636
Liva Nohre	Senior Epidemiologist	372-2631
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Jennifer Stewart	Epidemiologist	372-2621
Heather Wanatowicz	Administrative Supervisor	372-2605
Gary West	Statistical Programmer	372-2603

To report communicable diseases, unusual health occurrences, and public health emergencies
(all 602 area codes unless otherwise noted)

	Business hours M-F 8a-5p	After 5p
Bite reports	506-7387	506-7387
Communicable diseases	506-6767	747-7111
Death/birth certificates, funeral homes, human remains	506-6805	450-9982 or 229-9315
HIV (reports)	506-6426	Next business day
Public health emergencies	747-7111	747-7111
Rabies exposure	779-1358	747-7111
STDs (other than HIV)	506-1678	Next business day
TB	506-5065 or 372-1408	747-7111

**For change of name or address or to be removed or added to this mailing list, please e-mail
Jeanette Gibbon at: jeanettegibbon@mail.maricopa.gov or call (602) 372-2642.**