Quest Diagnostics

# Infectious Disease Update Medical News

**Volume 18 , Number 1**
**January 2011**
**Pages 1 - 12**

## In This Issue!

Cholera - An Overview..... 1
Oseltamivir for H5N1 avian influenza..... 5
Hepatitis E vaccine developed in China gives complete protection..... 5
Rapid RSV test approved..... 6
Incidence of oral cancer increases..... 6
Aspirin and *Clostridium difficile* infections..... 6
Septicemias among the most expensive hospitalizations..... 7
Airport scanners can be used to detect travelers with fevers..... 7
Frogs and *Salmonella*..... 7
A new strain of H1N1 influenza virus emerges..... 7
Effect of a probiotic on common winter illnesses in children..... 7
Curry may fight *Clostridium difficile*!..... 7
CDC recommends changes to the immunization schedules for 2011..... 8
A new cephalosporin approved that is effective against MRSA..... 8
Body art (*i.e.* tattooing) increase the risk of hepatitis C..... 8
New antibiotic reduces relapse rate of *Clostridium difficile*..... 9
Malaria vaccine shown to be safe and effective for infants..... 9
Vincent's angina..... 9
Infections caused by E*nterococcus avium*..... 9
New Test from Quest Diagnostics
Herpes simplex virus 1/2 (IgG) type-specific antibodies (CF)..... 10

Quest Diagnostics

## We'd Like to Hear from You!

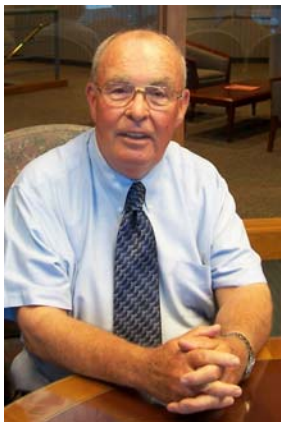
The vast majority of feature articles that appear in Quest Diagnostics *Infectious Disease Update* come about because somebody asked for them!

Often at meetings or during informal conversations, somebody will say: "Why don't you write something about this particular subject?" Invariably, if it's important enough for one person to be interested in it, then there's an excellent chance that additional readers would like to hear about that subject also.

Additionally, you might come across an article in a journal that you feel should be brought to the attention of other professionals. Just let us know the name of the journal, the volume, the month, and the page and we'll try to include it in a forthcoming issue.

To contact the Editor, just click **here!**

William F. Vincent, Ph.D.
Editor



## Cholera - An Overview

### Historical

The word "cholera" is derived from the Greek words meaning a "flow of bile". The disease is caused by *Vibrio cholerae*, a small, gram-negative curved rod.

Just the mention of cholera has been known to strike incredible fear into the hearts of people. At one time, this was one of the most dreaded diseases on the planet.

In modern history, there have been seven pandemics (i.e. worldwide epidemics that have been caused by cholera. The first was in 1805 in India and the last in 1905 which started in the Celebes Islands, Indonesia. Since that time, there have been numerous local outbreaks of cholera including the recent outbreak in Haiti.

The history of the elucidation of the epidemiology is quite a story. Dr. John Snow, a London physician, noted through careful study of death certificates that the cases of cholera in London in 1854 centered around a water pump on Broad Street. At Dr. Snow's insistence, the pump was sealed and put out of commission. With that action, the outbreak stopped quickly! This event is looked on today as a giant milestone in the development of the science of epidemiology. On the site of the Broad Street pump, today stands the John Snow Pub where thirst patrons

## All About This Publication

*Infectious Disease Update* is on the Quest Diagnostics website and can be accessed directly by clicking **here**.

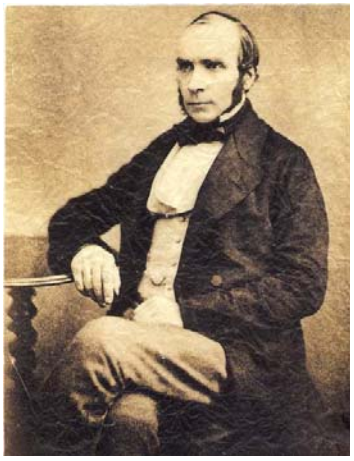
In addition to back issues of *Infectious Disease Update*, other publications of Quest Diagnostics, such as *Physicians Update*, are also available on our website. To visit that publication, just click **here.**

If you are not yet receiving your own copy of *Infectious Disease Update* each month, you can click **here** to subscribe. Please type the word "subscribe" in the subject line and your name, address and e-mail address in the body of the e-mail. We would like to point out at this time, that there is absolutely ***no*** "sharing" of our e-mail list. You will ***never*** receive any unwanted e-mails as a result of being a recipient of this publication.

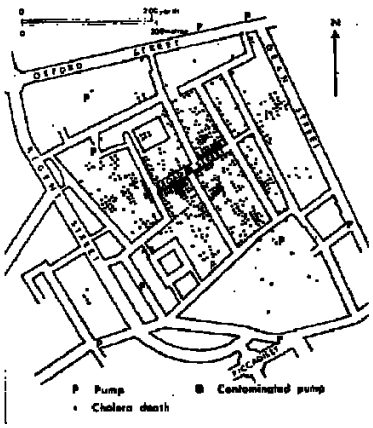
If you no longer wish to receive this monthly notification for this publication, please click **here**. Type "***UNSUBSCRIBE***" in the subject line.

Quest Diagnostics

can get a glass of water (or another beverage) without worrying about cholera thanks to Dr. Snow! Before this accomplishment, Dr Snow had already made a name for himself by standardizing the use of anesthesia (chloroform and ether). In fact, he personally administered chloroform to Queen Victoria during the deliveries of the last two of her nine children.



**Dr. John Snow of London**
**1813-1858**
**Picture in the public domain**



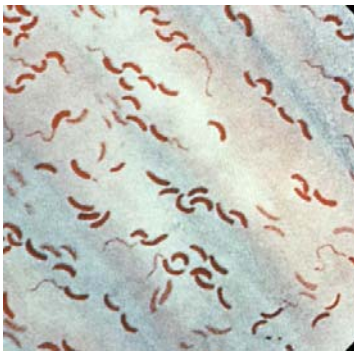

**John Snow's historic map showing the cholera cases centered around the contaminated pump**
**Public Domain**

**Courtesy of CDC**

## The Microorganism

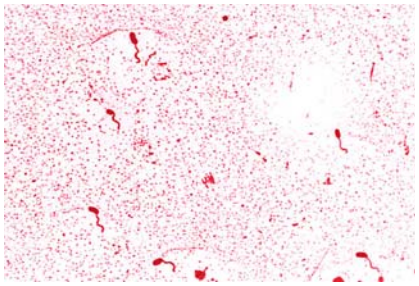
In 1854, an Italian physician, Filippo Pacini first discovered *Vibrio cholerae* when an outbreak occurred in Florence, Italy. Pacini's work, however, was basically ignored. The cholera organism was "rediscovered" in 1883 by Robert Koch (who still gets credit for the discovery in most of the literature!). The probable reason for this was that between 1854 and 1883, the "germ" theory of disease had become an accepted theory and everyone pretty much accepted Koch's findings at that time whereas Pacini's work came a little too early in history.

*V. cholerae* is a gram-negative, comma-shaped rod which usually has a slight curve to it. It has often been described as" gull-shaped".



**Gram stain of *Vibrio cholerae***
**Note the curved appearance of the rods.**
**Courtesy of CDC**

All members of this genus are motile by means of a single polar flagellum which can be seen in the microphotograph below.



**Leifson flagella stain of *Vibrio cholerae***
**Courtesy of CDC**

## *NEW FEATURE!*

### Need Assistance with Infectious Disease Issues?

Quest Diagnostics, as the world's leader in diagnostic laboratory testing, has a large and experienced staff with considerable experience in infectious diseases, infection control and clinical microbiology.

Through a new service, we are offering this experience and expertise to our readers should they need it.

If you have a question in any of these areas, please feel free to contact us.

In your e-mail, state your question as clearly as possible. Also, please furnish us with your name, position, affiliation, phone number and e-mail address. ***All*** requests will be kept confidential!

Contact us by clicking **here**!

Thank you for letting Quest Diagnostics be of assistance to you!

Members of the genus exhibit characteristics of the gram-negative, enteric rods (Enterobacteriaceae) as well as the pseudomonads. Because of their rapid growth and distinctive colonial morphology, *Vibrio* sp. can usually be isolated and identified rather quickly. However, it is critically important for the laboratory to know when the clinician suspects an infection by a member of this species as laboratories usually offer a special culture for *Vibrio* sp. so that appropriate culture media will be employed. If they do manage to grow at all on MacConkey or EMB agar, the growth is usually very sparse making these media unsatisfactory for initial isolation. Thiosulfate-citrate-bile salts-sucrose (TCBS) agar is often employed as the culture medium-of-choice.

For more information on the laboratory diagnosis and identification of *Vibrio* sp., readers are referred to that section later in this article.

At present, *V. cholerae* can be broken into more than 200 different serogroups. Only a few of these, however, carry the cholera gene. *V. cholerae* 01 can be subdivided into two major biotypes: classic and El Tor ("the bull"). At present, the El Tor biotype is the predominant pathogen in the world.

*V. cholerae* causes disease via the production of an enterotoxin that stimulates the secretion of fluid and electrolytes into the small intestine. The result of this stimulation is a watery diarrhea having an electrolyte concentration similar to that of plasma.

## Epidemiology and Transmission

Cholera is usually transmitted by drinking contaminated water and/or food. The food may be contaminated by contact with contaminated water via vectors such as flies. CDC has estimated that there are about 3 to 5 million cases annually throughout the world resulting in 100 thousand deaths. Many infections are asymptomatic or so mild that the correct diagnosis is missed. Only about 20 % of infected individuals go on to develop serious symptoms. Without treatment to prevent dehydration and shock, many of these will die within a few hours of the onset of the disease.

Most cases of cholera occur in areas of the world with little or no water treatment, poor sanitation and poor hygiene. In situations of war, famine, natural disasters such as hurricanes, typhoons, earthquakes, the disease may spread rapidly due to the breakdown of infrastructure. At present, that is precisely the case in Haiti.

**The common house fly, *Musca domestica*, is a common vector in the transmission of cholera and many other diseases**
**Courtesy of CDC**

**A slum in Ecuador where an outbreak of cholera occurred**
**Courtesy of CDC**

## Symptoms

Cholera is basically an infection that involves the small intestines and leads to large amounts of diarrhea. The symptoms associated with cholera can vary from mild/nonexistent to very severe/life threatening. They include the following:

- Watery diarrhea that starts suddenly and has a "fishy" odor. The stool looks like water with flecks of rice in it and is often referred to as "rice water" diarrhea. This usually leads to rapid and severe dehydration and low urine output,
- Abdominal cramps,
- Vomiting,
- Nausea,
- Rapid heart rate,
- Dry skin,
- Dry mucus membranes and mouth including lack of tears,

- Excessive thirst,
- Lethargy and tiredness,
- In infants, sunken "soft spots" called fontanelles.

About 5 % of infected persons will exhibit severe symptoms, In these individuals, the rapid loss of fluids and subsequent severe dehydration can lead to death within hours if not treated adequately.

**Adult with cholera. Note the typical "washerwoman's hands" due to severe dehydration**
**Courtesy of CDC**

## Laboratory Diagnosis

Routine stool cultures do ***not*** detect the presence of members of the genus *Vibrio*. If *Vibrio cholerae* is suspected in a patient, a special *Vibrio* culture must be ordered. Below is the ordering information for such a culture from Quest Diagnostics.

### Vibrio, Culture

| | |
|---|---|
| Clinical Significanc: | *Vibrio* species are usually associated with infections when isolated. Infections caused by *Vibrio* species fall into three categories: intestinal, systemic and wound infections in persons with pre-existing conditions. |
| CPT Code: 87046 | |
| Preferred Specimen: | Stool submitted in stool culture transport medium |
| Minimum Volume: | 1.0 gram of feces |
| Transport Container: | Cary-Blair transport medium |
| Transport Temp: | Room temperature |
| Specimen Stability: | Room temperature: 2 days<br>Refrigerated: unacceptable |
| Reject Criteria: | Unpreserved; frozen; expired transport medium; specimens in diapers; parasitology transport containers |
| Methodology: | Aerobic bacterial culture with isolation and identification. Antimicrobial susceptibility testing when appropriate |
| Turn-Around Time: | Culture results may take up to 72 hours |

The CPT code provided for this assay is based on AMA guidelines and is for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions concerning coding to the payer being billed.

## Treatment

While antibiotics are indicated for severe illness to reduce fluid loss and the duration of the disease, the most important treatment centers around rehydration. Oral rehydration or intravenous rehydration, when indicated, if administered on a timely basis, can dramatically reduce the mortality rate (to less than 1 %).

Antimicrobial drugs that are used include tetracycline, doxycycline, erythromycin, furazolidone and ciprofloxacin. All of these can be administered orally.

**A cholera hospital in Zimbabwe during an outbreak**
**Courtesy of Doctors without Borders**

**This cholera patient is drinking oral rehydration solution (ORS) in order to counteract his cholera-induced dehydration**
**Courtesy of CDC**

## Immunization

Cholera immunization is no longer required for any international traveler. The chance of getting cholera when traveling to areas where cholera is endemic is relatively small (one case in one half-million travelers).

The following information is provided on the CDC website:

"Currently there are two oral cholera vaccines available, Dukoral™ (manufactured by SBL Vaccines) which is World Health Organization (WHO) prequalified and licensed in over 60 countries, and ShanCol™ (manufactured by Shantha Biotec in India), which is licensed in India and is pending WHO prequalification. Because the vaccine is a two-dose vaccine, multiple weeks can elapse before persons receiving the vaccine are protected. Therefore, vaccination should not replace standard prevention and control measures. In addition, CDC does not recommend cholera vaccines for most travelers, nor is the vaccine available in the United States. This is because the available vaccines offer incomplete protection for a relatively short period of time".

There are several parenteral vaccines available and licensing and usage depends on the country. The WC/rBS cholera vaccine is currently available in a number of countries and was licensed for use in the U.S. in 2006.

## Infection Control

When simple precautions are observed in areas where cholera is endemic or epidemic, the chances of contracting the disease are significantly reduced. All persons (visitors as well as residents) should adhere to the following recommendations from CDC:

- Drink only bottled, boiled or chemically treated water. Canned carbonated water drinks are also acceptable. If the seal on a water bottle has been broken do ***not*** drink it!,

- Wash hands frequently and thoroughly with warm, clean water and soap. If this is not possible, use an alcohol-based hand sanitizer containing at least 60 % alcohol. Hands should always be cleaned before preparing food and after using the bathroom,
- Use boiled, bottled or chemically treated water to wash dishes, brush your teeth, wash and prepare food or to make ice,
- Eat foods that that are packaged or that are freshly and thorougly cooked and served hot,
- Dispose of feces in a sanitary manner in order to prevent contamination of food and water sources.

Intensive education in all of the above areas is vitally important in controlling cholera.

William F. Vincent, PhD,
*Clinical Microbiology Consultant*
*Quest Diagnostics*
*Wallingford, CT*

## Selected References

Centers for Disease Control and Prevention. 2010. Cholera - general information. Click **here** to go to website.

Centers for Disease Control and Prevention. 2010. Cholera - Epidemiology and risk factors. Click **here** to go to website.

Centers for Disease Control and Prevention. 2010. Cholera - the disease. Click **here** to go to website.

Centers for Disease Control and Prevention. 2010. Cholera - diagnosis and testing. Click **here** to go to website.

Centers for Disease Control and Prevention and World Health Organization. 1999. Laboratory Methods for The Diagnosis of Epidemic Dysentery and Cholera. Click **here** to go to website.

Centers for Disease Control and Prevention. 2010. Cholera- treatment. Click **here** to go to website.

Centers for Disease Control and Prevention. 2010. Cholera - Prevention and control. Click **here** to go to website.

Centers for Disease Control and Prevention. 2010. Cholera - resources for health professionals. Click **here** to go to website.

World Health Organization (WHO). 2010. Cholera. Click **here** to go to website.

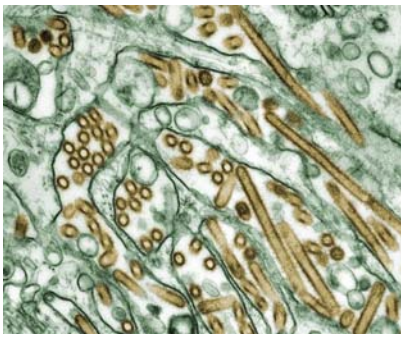
# Other Infectious Disease News

## Oseltamivir for H5N1 Avian Influenza

Remember "Avian Influenza"? That was the influenza that everybody was worried about until H1N1 (swine influenza) came along last April and eclipsed it. It's still there, however, along the Pacific rim and could become the causative agent of a pandemic at the blink of an eye and at any time as we well learned from H1N1 pandemic. The biggest difference between H1N1 and H5N1 is mortality. In the case of H1N1, the mortality rate wasn't/isn't too different from that associated with seasonal influenza. In the cases of H5N1 influenza reported thus far (in the last 6 years), the fatality rate was around 50 %! That's a scary number! Needless to say, one should ***never*** attempt to extrapolate what happened with H1N1 to what could happen with H5N1!

Investigators from the U.S. recently studied a global patient registry in order to examine the use of oseltamivir (Tamiflu®) for the treatment of H5N1 avian influenza for 308 patients in 12 countries (mostly Asia). This was the first, widespread investigation into the use of this drug.

When oseltamivir was given within 2 days of the onset of symptoms, the survival rate was 83 %. In the case of treatment that wasn't started until the 3rd to eighth day, the survival dropped down to 50 % which is close to the control group that was not treated with the drug.



**Colorized transmission electron micrograph of Avian influenza A H5N1 viruses (seen in gold) grown in MDCK cells (seen in green) Courtesy of CDC**

Adisasmito, W. *et al.* 2010. Effectiveness of antiviral treatment in human influenza A (H5N1)infection: Analysis of a global patient registry. *Journal of Infectious Diseases* **202**: 1154-1160 **[go to abstract]**.

Couch, R.B. and B.R. Davis. 2010. Editorial commentary: Has oseltamivir been shown to be effective for the treatment of H1N1 influenza A? *Journal of Infectious Diseases* **202**: 1149-1151 **[go to complete article]**.

## Hepatitis E Vaccine developed in China gives Complete Protection

We don't hear much about Hepatitis E in this country, but it is widespread throughout the world especially in those areas with poor sanitation and no water treatment. It has been estimated that up to one-third of the world's population may be infected. This virus is capable of causing serious disease and death.

Researchers in China recently completed a study of a vaccine that was used in over 100,000 patients. When patients received the full three doses of the vaccine (called HEV-239 or "Hecolin"), ***none*** of them developed hepatitis E infection!

**A good example of water collection in Uganda during an actual Hepatitis E outbreak**
**Courtesy of Doctors without Borders**


Zhu, F.-C. et al. 2010. Efficacy and safety of a recombinant hepatitis E vaccine in healthy adults: a large-scale, randomized, double-blind placebo-controlled, phase 3 trial. *Lancet* **376**: 395-902 **[go to abstract]**.

Holmberg, S.D. 2010. Hepatitis E vaccine: not a moment too soon. *Lancet* **376**: 849-851.(no abstract available).


## Rapid RSV Test Approved

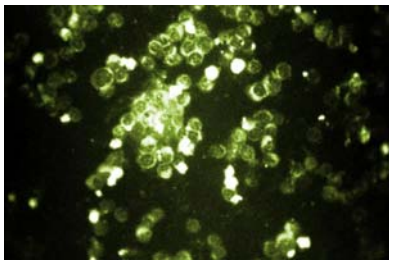
Respiratory syncytial virus (RSV) results are often needed quickly especially with infants presenting in the Emergency Room. RSV infections often have symptoms similar to other respiratory infections

FDA recently approved a rapid RSV dipstick test called *QuickVue RSV 10*™ which is manufactured by Quidel Corporation. The FDA noted, however, that negative results should be confirmed by tissue culture. Quest Diagnostics offers a Rapid tissue culture assay for RSV.

### Culture, RSV, Rapid

| | |
|---|---|
| Clinical Significance: | Respiratory syncytial virus (RSV) is considered the single most important virus affecting infants and young adults causing acute lower respiratory tract illness, mainly bronchiolitis and pneumonia. Adults are subject to infection but usually experience mild respiratory tract illness. Elderly patients may experience severe lower respiratory tact symptoms. |
| CPT Code: | 87254 |
| Preferred Specimen: | 2 ml of nasopharyngeal aspirate or swab in V-C-M (Viral, *Chlamydia*, *Mycoplasma*) transport medium or equivalent |
| Instructions: | Nasopharyngeal swabs should be submitted from patient > 2 years old |
| Transport Container: | Swabs or aspirates in V-C-M transport medium (blue or red label) or equivalent, and aspirates/ washings in sterile container |
| Transport Temp: | Refrigerated (cold packs) |
| Reject Criteria: | Throat swabs from patient < 2 years of age; dry swabs; formalin or other fixatives; any specimen in nucleic acid transport systems; non-respiratory sites; whole blood; serum; plasma; frozen specimens; specimens submitted at room temperature |
| Methodology: | Centrifugation-enhanced culture using R-mix cell line |

The CPT code provided here is based on AMA guidelines and is for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.

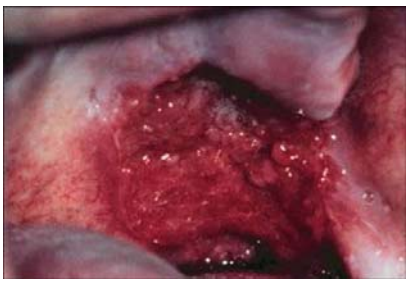


**Photomicrograph of Respiratory Syncytial Virus (RSV) stained using indirect immunofluorescent technique**
**Courtesy of CDC**

More information on this test is available on the Quidel Corporation's website which can be accessed by clicking **here**.

## Incidence of Oral Cancer Increases

According to research studies carried out by Swedish investigators, the incidence of oropharyngeal cancer (OSCC) is steadily increasing. This has been dubbed the "Slow Epidemic" and is occurring even among persons who do not smoke or drink.



**Carcinoma of the soft palate and tonsillar area**
**Courtesy of the University of Iowa Dentistry School**

In Sweden, between 1970 and 2002, there was a 2.8-fold increase in tonsillar cancer which is the most common form of OSCC. Of these cases, 93 % were positive for human papilloma virus (HPV). The most common type isolated was type 16 which has been found in 45 to 90 % of the studies carried out.

The reasons offered for this increase include multiple sex partners, sexual activity at an earlier age and oral sex.


Ramqvist, T. and T. Dalianis. *2010.* Oropharyngeal cancer epidemic and human papilloma virus. *Emerging Infectious Diseases* 16: 1671-1677 **[go to complete article]**.


## Aspirin and *Clostridium difficile* Infections

In a study of 30,000 hospitalized patients, it was found that in the case of those taking aspirin, there was a 40 % ***reduction*** in the number of cases of *C. difficile*-associated diarrhea (CDAD). In the case of those patients taking a 325 mg tablet rather than the 81 mg child's capsule commonly recommended for cardiac protection, the risk reduction was increased to 52 %.

One theory to explain this reduction is that aspirin reduces the inflammatory cascade that occurs in the gut and that is very important for *C. difficile* infection.


Rahmani, R. *et al*. 2010. Aspirin prevents the development of *C. difficile*-associated diarrhea in hospitalized patients. American College of Gastroenterology Annual Meeting, 2100, San Antonio, TX. Abstract 401.

## Septicemias among The Most Expensive Hospitalizations

A recent report from the U.S. Dept. of Health and Human Services reports that septicemias are among the top five most expensive reasons for hospital stays. The other four are coronary arthrosclerosis, acute myocardial infarction, device, implant or graft complications, and respiratory failure.

Friedman, B. et al. 2010. Most expensive hospitalizations - 2008. Healthcare Cost and Utilization Project Statistical Brief No. 97 **[go to complete report].**

## Airport Scanners can be used to Detect Travelers with Fevers

With today's modern air transportation system, a pandemic outbreak could literally make its way around the world in a matter of hours!

According to researchers at CDC, Some scanners now commercially available can detect passengers with a fever with 90 % accuracy. That compares very well with asking the passenger if they think they have a fever (70 % accurate). Many passengers are afraid that they will be kept from traveling if they admit they might have a fever.

Centers for Disease Control and Prevention. *Emerging Infectious Diseases*. Posted on line October 13, 2010.

## Frogs and *Salmonella*

Researchers at the Centers for Disease Control and Prevention recently studied an outbreak of *Salmonella typhimurium* that occurred in 2009 and involved 113 persons in 31 states.

They eventually tracked the outbreak to a facility in Southern California where about a million African dwarf frogs had been raised. These were being sold as pets for kids.

Back in the 1970s, there were *Salmonella* outbreaks across the country that involved pet turtles. This outbreak is obviously very similar. The bottom line was and still is that when kids handle reptiles and don't wash their hands thoroughly after (which probably happens the majority of time), *Salmonella* infections are sure to follow!

Mettee, S. *et al*. 2010. A multistate outbreak of human *Salmonella typhimurium* infections associated with aquatic frogs. - United States, 2009. Infectious Disease Society of America (IDSA) Conference, Atlanta, GA.

## A New Strain of H1N1 Influenza virus Emerges

A new strain of H1N1 influenza virus ("swine flu") has emerged along the Pacific rim. It was first detected in Singapore and has spread to Australia and New Zealand. There have been some "break through" cases already. These are persons who were immunized last year with the H1N1 vaccine. At this point, authorities are not too sure whether a new vaccine will be needed or not.

## Effect of A Probiotic on Common Winter Illnesses in Children

Investigators in France test a preparation of three probiotic organisms and a "prebiotic" (fructooligosaccharide) against a placebo to determine what effect if any the preparation would have on common winter illnesses of children. The subjects were otherwise normal children who in previous years had suffered at least three episodes of GI illness, respiratory tract illnesses and/or ear, nose and throat (ENT) illness. The organisms contained in the preparation were *Lactobacillus helveticus* R0052, *Bifidobacterium infantis* R0033, and *Bifidobacterium bifidum* R0071. The preparation was administered once daily.
The number of children receiving the preparation who had at least one illness was 51.6 % as compared to 68.5 % for the placebo group. That was a significant reduction and corresponds to a relative risk reduction of 25 %. The percentage of children in the preparation group who missed at least one day of school was 25.8 % as compared to 42.5 % in the placebo group.

There were no side effects in either group.

Cazzola, M. *et al*. 2010. Efficacy of a synbiotic supplementation in the prevention of common winter diseases in children: a randomized, double-blind, placebo-controlled pilot study. *Therapeutic Advances in Respiratory Diseases* **4**: 271-278 **[go to abstract]**.

## Curry may fight *Clostridium difficile*!

People living in India and China have been using turmeric to fight intestinal diseases for up to 4,000 years!

Turmeric is found in Indian curry and imparts its distinctive color and taste to Indian foods.

**Turmeric (*Curcuma longo*) is a perennial plant and a member of the ginger family In the public domain**

Investigators at the Cedars Sinai Medical Center in Los Angeles, CA recently tested the inhibition of the growth of *Clostridium difficile* in the laboratory by turmeric. They found that it is a powerful inhibitor of growth of this organism. The inhibitory effect is probably due to the active ingredient in turmeric, curcumin, which is a hydrophobic molecule.

The investigators admit that more research needs to be done on the use of turmeric/curry to fight *Clostridium difficile*-associated disease. If you like curry soup and other Indian dishes made with curry, you might want to volunteer for future studies. If, however, you end up on a proton pump inhibitor (PPI) from eating this food, this might not be such a good idea since PPIs have recentlyhave been shown to increase the risk of patients to *C. difficile* infection.

Nobody knows exactly how turmeric works in this regard but it is thought that it may reduce levels of two inflammatory enzymes (called COX-2 and LOX). Several pages earlier in this issue, we reported on a study in which aspirin has been shown to reduce the risk of *C. difficile* infection by reducing the inflammatory response.

Patel, R. *et al*. 2010. Inhibiting hospital-associated infection of toxigenic *Clostridium difficile* using natural spice, turmeric (curcumin). American College of Gastroenterology , October 2010, Abstract 331.

## CDC Recommends Changes to The Immunization Schedules for 2011

The Advisory Committee on Immunization Practices (ACIP) of The Centers for Disease Control and Prevention (CDC) voted unanimously in October 2010 to make a number of changes to the Immunization schedules for both adults and children. These changes will be published in the January 2011 issue of *Morbidity and Mortality Weekly Report*. Listed below are the significant changes for adults and children.

**Adult Immunizations**

- Influenza immunization will be added to the list of universally recommended vaccines (i.e. influenza, varicella, HPV, herpes zoster, Td/Tdap),
- There were several changes to intervals between vaccines.

**Childhood Immunizations**

- A change in the guidance concerning hepatitis B vaccine in children who did not receive one at birth,
- Added information on the use of the 13-valent pneumococcal vaccine,
- Guidance on the administration of 1 or 2 doses of influenza vaccine based on the child's history of H1N1 influenza infection.

## A New Cephalosporin approved that is Effective against MRSA

By definition, methicillin-resistant *Staphylococcus aureus* (MRSA) is resistant to all beta-lactams including all the cephalosporins.

FDA recently approved a new cephalosporin, **Ceftaroline fosamil** (Teflaro®). It is considered to be a "fifth-generation" cephalosporin. It is administered intravenously (600 mg q 12 hours in persons with normal estimated creatinine clearance) and can be used to treat community-acquired pneumonias and skin infections including those caused by MRSA.

This drug has been evaluated in four phase III clinical trials among adults. The most commonly reported adverse reactions included diarrhea, nausea and rashes. *Clostridium difficile* infection is also a possible adverse reaction.

For more information about this drug, click **here** to go to Drugs.com.

## Body Art (*i.e.* Tattooing) increase The Risk of Hepatitis C

One sees more and more tattoos among young persons under the age of 30 (both men and women). It's quite a fad nowadays even internationally. When the writer was a young lad (back in the late 1940s and early 50s), the only tattoos one ever saw were usually on sailors and consisted of pictures of anchors, ships and "I Love Mom". Not anymore. Most any subject (or any part of the body) is fair game.

**Tattoo of "praying hands" in the public domain - original source unknown**

Here are some figures that were recently published in an article in the *International Journal of Infectious Diseases*:

- Among Americans under the age of 30, about 30 % have at least one tattoo,
- In Canada, about 8 % of high school students have at least one tattoo,
- Among those high school students without a tattoo, 21 % would like to have one!

The investigators looked at 124 published studies from 30 countries to determine what effect, if any, the practice of tattooing has on the risk to hepatitis C. They found that there was on average a 2.74-fold increase in the incidence of hepatitis C among tattooed persons. They recommended caution in interpreting these results since many tattooed persons may fall into of high-risk groups such as prisoners, IV drug users, *etc*.

Jafari, S. *et al.* 2010. Tattooing and the risk of hepatitis C: a systemic review and meta-analysis. *International Journal of Infectious Diseases* E-published ahead of print on July 31, 2010 **[go to abstract]**.

## New Antibiotic reduces Relapse Rate for *Clostridium difficile*

Investigators in England at the Annual Meeting of the Infectious Disease Society of America (IDSA) that a new investigational drug is being evaluated for *Clostridium difficile* infections (CID). The drug, **Fidaxomicin**, belongs to a new class of antimicrobial drugs. When tested against vancomycin (po Vancocin®) the outcomes with Fidaxomicin were significantly better. It also appears that Fidaxomicin is less disruptive of the bowel flora than is the case with vancomycin.

40 days after treatment, there were 13 % treatment failures with Fidaxomicin as compared with 24 % with vancomycin. Adverse events were about the same for both drugs.

Approval is presently being sought in the European Union and a request for approval by FDA will be submitted shortly.


Crook, D. *et al*. 2010. Efficacy and safety of fidaxomicin (FDX) vs. vancomycin (VAN) in *Clostridium difficile* infection (CDI) in 2 randomized controlled trials (RCT) with 1,105 patients. Infectious Disease Society of America. October 23, 2010. Abstract 1417.

Drugs.com. 2010. Optimer Pharmaceuticals Announces Combined Data From Fidaxomicin Phase 3 Trials for the Treatment of *Clostridium difficile* Infection (CDI) Presented at IDSA. Click here to go to website.


## Malaria Vaccine shown to be Safe and Effective for Infants

At a recent meeting of the American Society of Tropical Medicine and Hygiene in Atlanta, GA, investigators from Ghana reported on Phase two clinical trials of a vaccine known as the RTS,S malaria vaccine. The antigenic component of this vaccine is a protein known as RTS,S/ASO1$_E$ derived from *Plasmodium falciparum* and then fused with the hepatitis B virus surface antigen.

Several three dose schedules were examined. A schedule employing immunization at 0, 1 and 7 months was found to be better at providing earlier protection. The efficacy in providing protection for up to 19 months was 57.2 % for this regimen.

Final trial testing has begun and it is hoped that the vaccine will be available for general use within 5 years.

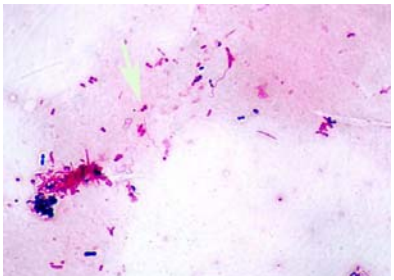

Asante, K.P. *et al*. 2010. Safety, immunogenicity and efficacy of the RTS/S/AS0I$_E$ malaria vaccine candidate integrated in EPI: extended follow-up of a randomized controlled Phage 2 infant trial in Gabon, Ghana and Tanzania. American Society of Tropical Medicine and Hygiene (ASTMH) 59th annual meeting Abstract LB-2200. Presented November 5, 2010 **[go to abstract]**


# Our Readers Ask!

## Vincent's Angina

**Question:** What is Vincent's angina and was it named for one of your ancestors?

**Answer:** First of all, it was ***not*** named for anybody in my family! It was named for Henri Vincent (1862-1950), a French physician who, I am quite sure is not related to me! Sometimes jokingly, I tell students, when lecturing on this topic, that he was my great grandfather!



**Gram stain of *Fusobacterium nucleatum* (formerly known as *Fusobacterium fusiforme*) and *Borrelia vincentii* From a gum scraping Courtesy of CDC**

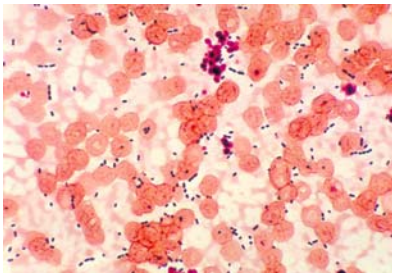
Vincent's angina is another name for trench mouth. It is an acute or chronic gingivitis characterized by redness and swelling. The etiology of this disease is still not clear but probably involves several different microorganisms in a synergistic relationship. These include *Borrelia vincentii*, *Fusobacterium nucleatum* and probably a *Treponema* species.

## Infections caused by *Enterococcus avium*

**Question**: Recently a woman came into our facility for one-day surgery to have two cyst-like formations on her right knee drained. 10 years ago, she had a right total knee replacement. When the surgeon made the incision, copious amounts of yellow fluid drained out. When he probed the hole with his finger, he could palpate the bone and extracted large amounts of fatty tissue that had undermined the whole knee cavity. The material grew out *Enterococcus avium*. It is the first time I have seen this organism. Any thoughts?

**Answer**: There are a couple of species in the genus *Enterococcus* that are quite familiar to clinicians and infection control practitioners - namely *Enterococcus faecium* and *Enterococcus faecalis*. These are not the only members of this genus capable of causing infections in humans. There are a number of other species that are considered "opportunistic pathogens and are occasionally isolated from wounds, abscesses, urinary tract infections, *etc*. Along with *Enterococcus avium*, other species occasionally encountered include *Enterococcus raffinosus*, *Enterococcus flavus* and *Enterococcus durans*.

All of these are capable of causing infections especially in patients whose immunocompetence is diminished. Incidentally, before the genus *Enterococcus* was established a couple of decades ago, *E. avium* was part of the "Q" group *Streptococcus*. Also, don't let the name fool you. This organism is found throughout nature and is a normal inhabitant of the human GI tract.



**Gram stain of *Enterococcus* sp. in a sputum specimen from a patient with pneumonia Courtesy of CDC**

## Free CME credits

**Faces of HIV/AIDS: Diagnosis and Treatment From Planning a Regimen to Managing Your Patient.** Free CME offering presented by Johns Hopkins University School of Medicine. Click here to go to offering

**Upper Respiratory Tract Infections**. Fee CME offering presented by the Cleveland Clinic. Click **here** to go to offering.

**Hepatitis C virus: prevention, screening and interpretation of assays**. Free CME offering presented by the Cleveland Clinic. Click **here** to go to offering.

**Act Fast for Post-Pneumo-coccal deafness**. Click **here** to go to offering at MedPage Today

# New Tests Available from Quest Diagnostics

### Herpes Simplex Virus 1/2 (IgG) Type-specific Antibodies, CSF

| | |
|---|---|
| Clinical Signifi-cance: | Detection of HDV type-specific IgG in CSF may indicate central nervous system infection by that HSV type |
| CPT Code: | 85595, 86696 |
| Specimen Require-ment: | 1 ml CSF |
| Transport Temp: | Refrigerated |
| Specimen Stability: | Room temperature: unacceptable<br>Refrigerated: 14 days<br>Frozen: 30 days |
| Reference Range: | < or = 1.00 |
| Methodo-logy: | Immunoassay |
| Performing Site: | Focus Diagnostics |

The CPT codes provided for these assays are based on AMA guidelines and are for infor-mational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions concerning coding to the payer being billed

# News Credits

**William F. Vincent, PhD, Senior Editor**
**Frances A. Vincent, BSN, RN Associate Editor and Nurse Consultant**
**Marian Rector, RN, Nurse Educator**
**Mervyn Rimai, MD, Medical Consultant**
Neena Singh, MD, Medical Review
Lucy D'Angelo, Compliance Review

*Published monthly by Quest Diagnostics. All inquiries, suggestions and comments should be addressed to William F. Vincent, PhD, Quest Diagnostics, P.O. Box 420, East Granby, CT 06026-0420*
*Tel. 800-982-6810 Ext. 7158*
*Fax 860-653-3276*
*E-mail:*
***William.F.Vincent@QuestDiagnostics.com***



.

## From The Desk of The Editor

# *Fall in The Berkshires*

**In the very western end of the Commonwealth of Massachusetts lies Berkshire County or "The Berkshires". This mountainous area is actually an extension of the Green Mountains of Vermont to the North. The people who live in the Berkshires have much more in common with the neighbors to the North than they do with the people in and around Boston to the East. First of all, they often have a real problem understanding what those Bostonians are saying. As a child growing up in the Berkshires, I heard many local people talking with what could be referred to as a Vermont "Twang". Root is pronounced "Rut" and Roof is pronounced "Ruf". As a kid, I occasionally heard people speaking in a form of Elizabethan-era familiar English. If they wanted you to be quiet and listen, they would say "Hearken Ye". They often greeted people with the phrase: "How be Ye?"**

**Because of the preponderance of maples and birches, the colors of the mountains and forests of the Berkshires are magnificent in the fall. We would like to share some of this beauty in pictures we have taken over the years.**

**The Berkshire Hills in fall near Egremont, MA**

**Bish Bash Falls in the Southern Berkshires**

**The Housatonic River runs South from the center of the County into Connecticut and eventually to Long Island Sound. This picture was taken near Great Barrington in the Southern end of the county**

**Small, native brook trout on their fall spawning run in a small brook next to the Editor's house which is at the foot of the Berkshire Hills**

**A mixture of maples (red) and birch (yellow) in the fall**