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PEDIATRIC NEWS

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CHIEF'S CORNER

Pediatric Dental Clinic

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The Pediatric Dental Clinic may very well be the smallest element within the Dental Directorate and Wilford Hall Medical Center, but it is perhaps one of the busiest and most sought after centers of care. Our staff consists of one board certified pediatric dentist and one dental technician.

Family members and retirees should plan to get most (or all) of their dental care from civilian dentists using the TRICARE Dental Program, private insurance or at their own expense:

TRICARE Dental Program (Active Duty Dependents/Reservists) 1-888-622-2256
TRICARE Retiree Program (Retirees and their dependents) 1-888-838-8737

Children covered by the TRICARE Dental Program cannot be treated at the Pediatric Dental Clinic for treatment covered by their insurance plan! This policy is strictly spelled out in Title 10. Exceptions may include “true” dental emergencies and extensive treatment in the operating room.

Limited care to support resident training requirements is provided to a small percentage of pediatric patients on a “first-come, first served” basis. Their needs must coincide with training requirements. The Pediatric Dental Clinic supports “in-house” training for all dental specialties, including the Advanced Education Program in General Dentistry (AEGD). Medical training programs for Pediatrics and Anesthesiology are supported, as well.

The Pediatric Dental Clinic provides examination, diagnosis, prevention, and treatment of diseases and abnormalities of the teeth and associated tissues. This includes care of the medically, mentally, and physically handicapped child, in either an outpatient setting or as inpatients in the operating room. The Pediatric Dental Clinic supports the WHMC Craniofacial Anomalies Board (CFAB) and provides consultation, treatment, and direction for long-term care patients.

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Editor's Note:

*Included with this issue of **Pediatric News** is the most up-to-date version of the **San Antonio Military Pediatric Center Directory**. As usual telephone numbers and pagers are a dynamic entity. Any 'long-term' changes to these numbers will be noted in future issues of the **Pediatric News**. Eventually, the SAMPC webpage will be updated by the WebMaster and the **Directory** and the **Pediatric News** will be available as PDF files capable of being downloaded.*

Management of Parapneumonic Effusions

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The management of pleural effusions secondary to a bacterial pneumonia has traditionally been both a confusing and controversial subject, primarily due to a paucity of outcomes data for both adults and children. It is important to have an evidence based approach to managing parapneumonic effusions because they may progress to empyema, which is a source of significant morbidity, including systemic toxicity and prolonged hospitalization stays. The primary problem lies in identifying those children who are at risk of having an effusion develop into an empyema.

Background

Over half of all children hospitalized with an acute bacterial pneumonia will develop a parapneumonic effusion. The natural history of these effusions is to begin in an initial exudative phase with serous fluid from the lung, progressing to a fibrinopurulent stage where fibrinous material coats the pleura, forming loculations that impede chest tube drainage. Finally, in the organizing stage, a fibrinous peel, or cortex, forms around the lung, causing restriction.

Multiple decision points exist when evaluating and treating a

parapneumonic effusion. Should a thoracentesis be performed, and if so, what labs should be performed? What radiographic studies should be performed to evaluate a parapneumonic effusion? Is drainage necessary, and if so, what drainage technique should be used? What antibiotic regimen will be the most effective? Although pediatric data is scarce, several adult studies have allowed the American College of Chest Physicians to release new clinical practice guidelines for evaluating and managing parapneumonic effusions (Table 1)[1]. These guidelines allow for an effusion to be placed in a risk category (very low, low, moderate, and high risk) and for a decision on drainage based on the categorization.

Recognition

On a lateral chest x-ray, if you can't see the diaphragms clearly, suspect an effusion. Lateral decubitus chest x-rays are helpful in determining whether the effusion is free flowing by layering out to gravity. An effusion less than 10mm and layers out is considered minimal, and requires no further intervention. For larger effusions, and for those that do not layer out, ultrasound has been shown to be more sensitive than CT scan in pediatric patients at showing fibrinous strands and loculations, and can also be helpful in guiding needle thoracentesis[2, 3].

Thoracentesis

If the effusion is 10mm or larger, the ACCP recommends that thoracentesis be performed to help categorize the risk of the effusion developing into an empyema. Unless the effusion is larger than half of the hemithorax, the thoracentesis need not be therapeutic, and only enough fluid to perform the necessary labs should be drawn. The current recommended labs to be sent are gram stain and culture as well as a pH level sent in a heparinized syringe and performed on a blood gas analyzer. If the effusion is frankly purulent, do not send it for a pH, as it will damage the machine.

Laboratory Analysis

The bacteriology results and the pH have been demonstrated as the two most predictive labs in determining the risk for an effusion to develop into an empyema. A recent meta-analysis demonstrated that a pH less than 7.2 has the highest predictive value of poor outcomes out of all available chemistries for pleural fluid. Therefore, decisions based on pleural fluid glucose, LDH, or protein are not warranted given their comparatively much lower predictive value. Additionally, the presence of a positive gram stain or culture, regardless of antibiotic status, is predictive of increased morbidity[4].

| Risk Category | Pleural Anatomy | Bacteriology | Chemistry |
|---------------|--|---------------------------------|--------------------|
| Very Low | minimal and free flowing effusion (<10mm) | N/A | N/A |
| Low | small to moderate free flowing effusion (≤10mm, <1/3 hemithorax) | negative gram stain and culture | pH ≥ 7.2 |
| Moderate | large or loculated, or thickened parietal pleura | positive gram stain or culture | pH < 7.2 |
| High | loculated and > 1/3 of hemithorax | frank pus present | do not send for pH |

Surgical Drainage

Therapeutic thoracentesis and simple tube thoracostomy have each been shown to have the highest rates of requiring a second, more definitive drainage procedure and are not recommended[1]. Other drainage procedures include Video Assisted Thoracoscopic Surgery (VATS), tube thoracostomy with administration of fibrinolytics, and open thoracotomy. Currently, the ACCP views all of these as acceptable procedures. Surgical drainage is recommended for any effusion that shows evidence of loculation or a thickened parietal pleura, has a positive gram stain or culture, or has a pH less than 7.2 [TABLE 1]. In comparing the efficacy of the different techniques, although fibrinolytics have been described as successfully treating empyema in children, a randomized controlled clinical trial in adults did not demonstrate any reduction in length of hospitalization when comparing tube thoracostomy using fibrinolytics versus tube thoracostomy alone[5, 6]. Additionally, several case series in children have associated VATS with a significantly decreased length of hospitalization as compared to both open thoracotomy and to tube thoracotomy alone[7, 8]. If the surgeon at the treating facility is comfortable performing VATS, the early implementation of this procedure once a moderate or high risk effusion has been identified is associated with decreased morbidity and length of hospitalization.

Antibiotic Therapy

Empiric treatment of pneumonia with effusion should be directed at the most likely pathogens while definitive (hopefully) diagnostic tests, like cultures, are pursued. In all pediatric age groups viral and atypical respiratory pathogens, Mycoplasma, Chlamydia are the

most common pathogens associated with lower respiratory tract disease. Pneumonia caused by these agents is frequently associated with small, non-purulent effusions, but are rarely associated with complicated clinically significant effusions or empyema [9]. Clinically significant effusions are generally caused by bacterial and fungal pathogens.

The clinical scenario is most useful in predicting the likely bacterial pathogens. For immunocompetent children less than 2 years old (or those un-immunized), *Streptococcus pneumoniae* (Strep pneumo), *Staphylococcus aureus* (Staph aureus), *Streptococcus pyogenes* (Group A Strep) and *Haemophilus influenzae* type B (HIB) are the most common pathogens. Pneumonia caused by Staph aureus is the most likely to produce an effusion (80% of Staph aureus cases)[10]. In contrast, effusion is seen in approximately 40% of pneumonia's caused by Strep pneumo; however, because lower respiratory tract infection with Strep pneumo is much more common, most pneumonia with effusion you will encounter will be caused by this organism[11]. The recent introduction of the Prevnar vaccine certainly has the potential to alter the epidemiology of pneumonia and effusion over the next few years.

In a setting where an aspiration event is suspected to have preceded the development of the pneumonia

and effusion (binge drinking teenager, neurologically compromised child with poor airway protective mechanisms), mixed oral flora to include anaerobes must be covered. In immunocompromised hosts or those with a significant environmental exposure, Mycobacterium tuberculosis and/or endemic fungi need to be considered and appropriate diagnostic tests aggressively pursued. It should be remembered that South Texas remains an area with significant incidence of both Tuberculosis and Coccidioidomycosis.

For the general practitioner, most cases of pneumonia with effusion will be caused by the common bacterial respiratory pathogens of childhood, and thus initial therapy must be primarily directed at them. The second generation cephalosporin Cefuroxime has been the workhorse drug for community acquired pneumonia with or without effusion in Pediatrics because of its ability to cover both the gram positive bacteria (including Staph) and gram negatives like Haemophilus. However empiric coverage of pneumonia has been made more complicated in recent years by the emergence of penicillin resistant *Streptococcus pneumoniae*. Currently at WHMC 50% of clinical respiratory isolates of *Streptococcus pneumoniae* are resistant to penicillin and nearly 20% to second and third generation

TABLE 2. EMPIRIC ANTIBIOTICS

| Clinical Characteristics | Pathogens to consider | Antibiotics to consider |
|-------------------------------------|--|--|
| Community acquired < 2 yo | S pneum, Staph aureus, Strep pyogenes HIB | Cefuroxime (+ Vanc if severely ill) |
| > 2yo(immunized) | S pneum, Staph aureus, Strep pyogenes | Cefuroxime or Nafcillin (+ Vanc if severely ill) |
| Suspected aspiration | Mixed oral flora | Clindamycin or Cefoxitin |
| Pneumatoceles | Staph aureus (occ S pneumo) | Nafcillin |
| High risk for TB or immunocomp host | MTb Fungal | Cefuroxime aggressively pursue diagnostic cultures |

cephalosporins. Children most at risk for carriage of resistant organisms are those with frequent prior exposure to antibiotics or those attending large group daycares (more than 6 children per room). A number of clinical studies have demonstrated that most cases of pneumonia caused by resistant Strep pneumo will still be adequately treated with a drug like Cefuroxime [12]. However, because of concern for possible clinical failure, children who are significantly ill with pneumonia and complicated effusion (admitted to an ICU), or are failing to improve should likely have Vancomycin added to their treatment regimen pending definitive cultures and drug sensitivity.

Uncomplicated effusions (very low to low risk) will generally resolve with standard 14 day course of antibiotic therapy directed at the pneumonia. Complicated effusions/empyema (moderate and high risk) are often very slow to clinically resolve and 4 or more weeks of therapy are indicated. Because of the higher serum and pleural drug levels that can be achieved, parenteral antibiotics should be provided until fever resolves and supportive therapies (chest tube, oxygen) are no longer necessary. Patients can be transitioned to oral antibiotics to complete their course.

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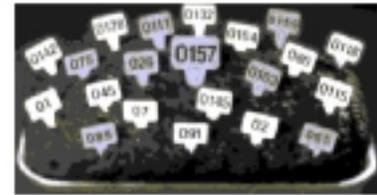
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Escherichia coli Enteric Infections: Part 2



Enterohemorrhagic *E. coli* (EHEC)

In 1982, two outbreaks of hemorrhagic colitis occurred in Oregon and Michigan.

The disease was characterized by diarrhea, progressing to bloody diarrhea, and abdominal pain without fever. Investigation by local public health investigators and the CDC identified an *E. coli* as the etiologic agent. This *E. coli* had a serotype, 0157:H7, which had not been previously known to cause disease in humans. The source was traced to a lot of hamburger from a fast-food chain. (1)

E. coli 0157:H7 is now recognized as an important cause of bloody diarrhea. It is usually a self-limited disease but in a small percentage it leads to hemolytic uremic syndrome (HUS). It must be considered as a possible cause of bloody diarrhea anywhere in the U.S. but especially in the Northwest.

Microbiology

E. coli 0157:H7 has the basic characteristics of the normal *E. coli* of the fecal flora. On lactose MacKonkey Agar it will produce lactose fermenting non-mucoid colonies. However, unlike most other *E. coli*, it does not ferment

sorbitol. When grown on sorbitol MacKonkey Agar it produces clear, sorbitol-nonfermenting, colonies. This is useful in diagnosis. (2)

E. coli O157:H7 has very similar characteristics to another type of pathogenic *E. coli* – EPEC. It produces the same attaching an effacing lesion and has the same 60Mda virulence plasmid. The difference that defines O157:H7, and certain other serotypes, as EHEC, is the production of cytotoxins known as Shiga toxins. (Stx) It is likely that EHEC were once EPEC that acquired Stx through bacteriophage infection. (3) EHEC may produce one or both of two Stx – Stx1 or Stx 2. Stx1 is identical to the toxin produced by *Shigella dysenteriae* 1.

Epidemiology

Incidence

Sporadic cases appear to more common in Canada than the U.S. and more common in Western than Eastern Canada. 9 Of 19 U.S. outbreaks have been in states that border on Canada. (2) Few population-based studies have been done to determine the true incidence of *E. coli* O157:H7. One such study in a Seattle HMO found an incidence of 8 infections per 100,000 persons per year. (4) Studies from Washington and Minnesota have reported *E. coli* O157:H7 being isolated more frequently than *Shigella*. One multi-center U.S. study found that when visible blood was present, *E. coli* O157:H7 was the most common bacterial pathogen isolated. (5)

Transmission

E. coli O157:H7 is most often transmitted through consumption of contaminated food and water. The single most common identified source has been undercooked ground beef. The infective dose is probably <100 organisms and person-to-person spread is also

possible.

Approx 1% of healthy cattle may have the organism in their intestine. (5) The beef becomes contaminated during the slaughter process. Most ground beef is produced by large processors that receive beef from many locations. There, the grinding process transfers bacteria to the interior. It is then distributed to many retail chains. This is usually mixed with trimmings from other sources. This whole process enables *E. coli* O157:H7 organisms from a single location to be spread widely. If the contaminated beef is not cooked thoroughly, at least 160°F, the organisms may survive and cause disease.

E. coli O157:H7 has been found in many other sources including raw milk, unpasteurized cider, and ranch dressing. An outbreak in Japan that affected >6000 children was traced to radish sprouts. (6)

Geographic and seasonal factors

E. coli O157:H7 has been reported from at least 30 countries on 6 continents but is most frequent in the US, Canada, and the UK. (7) It is rare in developing countries. In the U.S. it is more frequently reported in the northern states. It peaks in the warmer months with 37% of US outbreaks from 1982-1993 occurring between July and September.

Clinical Features

The incubation period is approximately 3-5 days. The earliest symptoms are usually crampy abdominal pain and non-bloody diarrhea. In many, 25-75%, it progresses no further and disease is mild. Asymptomatic infections occur but their exact incidence is unknown. In others it progresses to more severe abdominal pain and to bloody diarrhea. Fever is absent or low-grade. Vomiting may occur but is unusual. Its abrupt onset in an

otherwise healthy host is helpful in differentiating EHEC from Inflammatory Bowel Disease.

The Hemolytic-Uremic syndrome is a serious complication of *E. coli* O157:H7. It occurs approximately one week after diarrhea develops. It is characterized by the abrupt onset of microangiopathic hemolytic anemia, acute renal failure, and thrombocytopenia. It occurs in approximately 10% of persons with EHEC. Young children and the elderly are most prone to develop HUS. A very complete discussion of HUS can be found in the paper by Noel et. al. (3)

Diagnosis

Isolating *E. coli* O157:H7 requires special culture techniques. Many, but not all, microbiology laboratories now routinely screen stool cultures for EHEC. If you're not sure what your lab's policy is then ask for O157:H7 specifically. As mentioned above, O157:H7 does not ferment sorbitol. When grown on sorbitol MacKonkey agar it produces clear colonies. These are then tested for the O157 serogroup with commercially available antiserum. They must also be confirmed biochemically to be *E. coli*. Further testing to confirm the isolate has the H7 flagellar antigen is available at state health labs and the CDC but is not required for a presumptive diagnosis.

There are several problems with this approach to diagnosis of EHEC:

- (1) The organism is best cultured early in the course of the disease. If medical attention is sought late then cultures may be negative.
- (2) If the sample is not processed promptly then competing organisms may reduce the chance of isolation.
- (3) Prior antibiotic use reduces the yield of EHEC.

(4) There are non-0157:H7 EHEC that can cause colitis and HUS that are able to ferment sorbitol.

There are newer methods to detect 0157:H7 and other EHEC using PCR techniques and assays for shiga-like toxin. These methods are quite sensitive but not yet generally available. (3)

Treatment

Treatment of *E. coli* 0157:H7 is effective fluid and electrolyte management. There is no evidence that antibiotics either shorten the course of the disease or prevent complications.

On the contrary, there is a growing body of evidence that antibiotic treatment may actually increase the risk for developing HUS. A recent prospective study in 71 children with 0157:H7 infection demonstrated a relative risk of developing HUS of 14.3 in children receiving antibiotics versus those who did not. (8) The use of antimotility agents is contraindicated. They may increase the risk of HUS. At the time of diagnosis it is important to obtain a CBC, electrolytes, BUN, and creatinine. These are baseline determinations in monitoring for complications such as HUS.

Prevention

The best treatment at present for EHEC is prevention. Current meat inspection procedures are antiquated and inadequate. Irradiation of meat products is effective but public resistance has prevented this becoming widely utilized. Once contaminated meat reaches the consumer clinical disease may be prevented by thoroughly cooking it to an internal temperature of 160 F. Ground beef carries the most risk because a single hamburger may contain beef from many cattle from

many different locations. Candidate vaccines are in development.

Enteroinvasive *E. coli* (EIEC)

EIEC is biochemically an *E. coli*. However, phenotypically, genetically and pathogenetically it more closely resembles *Shigella* spp. (9) EIEC infects colonic mucosa. It first penetrates the epithelial cell by endocytosis. The endocytosis vacuole is lysed and the EIEC multiplies intracellularly. Like *Shigella*, EIEC may move through the cytoplasm and invade adjacent cells. EIEC contains a 140 MDa plasmid that has a high degree of homology to the virulence plasmid of *Shigella*. It does not produce Shiga-like toxins but a plasmid-borne gene encodes a protein with enterotoxin-like activity *in vitro*. (10) The clinical significance of this protein is unknown.

EIEC is usually transmitted through food and water. The infective dose is higher than *Shigella* but person-to-person spread does occur. In developed countries the incidence is probably very low but does occur in outbreaks, including a large outbreak in Houston in 1985. (11)

Clinical symptoms include watery diarrhea, tenesmus, and crampy abdominal pain. Unlike *Shigella*, blood in the stool is unusual and many patients may have only watery diarrhea. However, like *Shigella*, there should be large numbers of fecal leukocytes. This is a useful clinical feature for differentiating *Shigella* and EIEC from EHEC, which cause few, if any, fecal leukocytes.

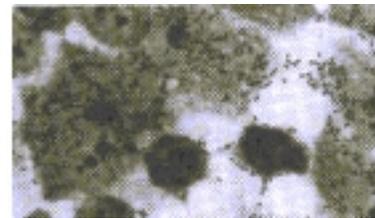
Diagnosis, in the absence of a known outbreak, is difficult. Clinical diagnosis is based on a culture-negative *Shigella*-like illness. Microbiologic diagnosis is also difficult. The biochemical profile of EIEC is variable and they don't fall into classic serotypes for which many labs have typing sera. Molecular methods such as PCR and DNA

probes are very sensitive but not yet generally available.

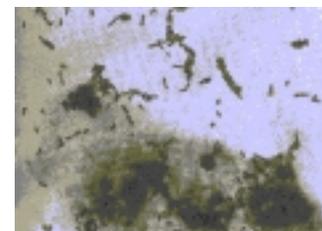
There are no clinical trials of antibiotic treatment of EIEC. Antibiotics often are not needed but probably would reduce the duration of illness as in Shigellosis. Resistance to frequently used antibiotics makes this less than certain. (12)

Enteroaggregative *E. coli* (EaggEC) and Diffusely adherent *E. coli* (DAEC)

Nataro et. al. (13) and Scaletsky et. al. (14), while looking at the adherence patterns of *E. coli* from diarrhea studies in the developing world, found that many *E. coli* from non-EPEC serogroups also adhered to Hep-2 cells. However, they adhered in distinctive patterns. EaggEC adhered in "stacked-brick" pattern to the Hep-2 cells, themselves, and the glass slides. The DAEC, as the name implies, adhered in a diffuse pattern to the cells only. Distinctive serogroups have been found to be associated with each type.



DAEC



EaggEC

There is some controversy over the pathogenicity of EaggEC. Volunteer studies initially failed to show pathogenicity. However, Nataro (15) demonstrated that 3 of 5 volunteers fed EaggEC strain 042 (044:H18) developed significant diarrhea and one other had milder symptoms. Studies in children in the developing world have supported EaggEC as a pathogen in those whose diarrhea lasted greater than 14 days. EaggEC is probably rare in the developed world but has occurred in outbreaks. (16) DAEC initially was also felt not to be a pathogen. Recent studies in a variety of developing countries have shown differently. Like EaggEC, it is found primarily in children with diarrhea of >14 days duration. Unlike EaggEC it is found in children >4 years old. DHEC may be a significant pathogen even in the developed world. Jallat et. al., found a striking amount of DAEC in hospitalized children in Clermon-Ferrand, France. (17) However, this has not been reported in other locations.

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Computers and the Internet – An Overview Part II

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(Part I of this article appeared in the August issue of *Pediatric News*.)

Many cities view the Internet as a solution to clogged highways and air pollution, as people choose to “telecommute” from home. Schools use the Internet as a vast electronic library, and doctors use it to consult with colleagues half a world away. Within 30 years, the Internet grew from a Cold War concept for controlling the remains of a post-nuclear society to the Information Superhighway. Just as the railroads of the 19th century enabled the Machine Age, and revolutionized the society of the time, the Internet takes us into the Information Age, and influences every aspect of our lives today.

TERMINOLOGY

Browser

A program used to find and look at various Internet resources. The most common examples are Microsoft Internet Explorer and Netscape Navigator.

Client

A software program that is used to contact and obtain data from a *Server* software program on another computer. Each *Client* program is designed to work with one or more specific kinds of *Server* programs, and each *Server* requires a specific kind of *Client*. A *Web Browser* is a specific kind of *Client*.

Cookie

A capsule of data about your computer that is left on a website after you visit. It makes loading that same page faster when you revisit, but allows the website owner to potentially do some nasty things with the data. For a good scare about the dangers of cookies, visit the site <http://www.cookiecentral.com>. Depending on the type of cookie used, and the Browser’s settings, the Browser may accept or not accept the cookie, and may save the cookie for either a short time or a long time. Cookies might contain information such as login or registration information, online “shopping cart” information, user preferences, etc.

When a Server receives a request from a Browser that includes a Cookie, the Server is able to use the information stored in the Cookie. For example, the Server might customize what is sent back to the user, or keep a log of particular user’s requests.

Cookies are usually set to expire after a predetermined amount of time and are usually saved in memory until the Browser software is closed down, at which time they may be saved to disk if their “expire time” has not been reached.

Cookies do not read your hard drive and send your life story to the CIA, but they can be used to gather more information about a user than would be possible without them.

Domain Name

The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots. The part on the left is the most specific, and the part on the right is the most general. A given machine may have more than one Domain Name but a given Domain Name points to only one machine. For example, the domain

names:

matisse.net
mail.matisse.net
workshop.matisse.net

may all refer to the same machine, but each domain name can refer to no more than one machine.

Usually, all of the machines on a given Network will have the same thing as the right-hand portion of their Domain Names (matisse.net in the examples above). It is also possible for a Domain Name to exist but not be connected to an actual machine. This is often done so that a group or business can have an Internet e-mail address without having to establish a real Internet site. In these cases, some real Internet machine must handle the mail on behalf of the listed Domain Name.

Fire Wall

A combination of hardware and software that separates a LAN into two or more parts for security purposes.

FTP (File Transfer Protocol)

A very common method of moving files between two Internet sites. FTP is a special way to *login* to another Internet site for the purposes of retrieving and/or sending files. There are many Internet sites that have established publicly accessible repositories of material that can be obtained using FTP, by logging in using the account name anonymous, thus these sites are called anonymous ftp servers.

GIF (Graphic Interchange Format)

A common format for image files, especially suitable for images containing large areas of the same color. GIF format files of simple images are often smaller than the

same file would be if stored in *JPEG* format, but GIF format does not store photographic images as well as JPEG.

Host

Any computer on a *network* that is a repository for services available to other computers on the *network*. It is quite common to have one host machine provide several services, such as *WWW* and *USENET*.

HTML

(HyperText Markup Language)

The coding language used to create Hypertext documents for use on the World Wide Web. HTML looks a lot like old-fashioned typesetting code, where you surround a block of text with codes that indicate how it should appear. Additionally, in HTML you can specify that a block of text, or a word, be linked to another file on the Internet. HTML files are meant to be viewed using a World Wide Web Client Program, such as Netscape or Mosaic.

HTTP

(HyperText Transfer Protocol)

The protocol for moving hypertext files across the Internet. Requires a HTTP client program on one end, and an HTTP server program on the other end. HTTP is the most important protocol used in the World Wide Web (WWW).

IP Number

(Internet Protocol Number)

Sometimes called a dotted quad. A unique number consisting of 4 parts separated by dots, e.g. 165.113.245.2

Every machine that is on the Internet has a unique IP number - if a machine does not have an IP number, it is not really on the

Internet. Most machines also have one or more *Domain Names* that are easier for people to remember.

ISP

(Internet Service Provider)

An institution that provides access to the Internet in some form, usually for a fee.

Java

Java is a network-oriented programming language invented by Sun Microsystems that is specifically designed for writing programs that can be safely downloaded to your computer through the Internet and immediately run without fear of viruses or other harm to your computer or files. Using small Java programs (called "*Applets*"), Web pages can include functions such as animations, calculators, and other fancy tricks.

We can expect to see a huge variety of features added to the Web using Java, since you can write a Java program to do almost anything a regular computer program can do, and then include that Java program in a Web page.

JPEG

(Joint Photographic Experts Group)

JPEG is most commonly mentioned as a format for image files. JPEG format is preferred to the *GIF* format for photographic images as opposed to line art or simple logo art.

Network

Any time you connect 2 or more computers together so that they can share resources, you have a computer network. Connect 2 or more networks together and you have an *Internet*.

Node

Any single computer connected to a *network*.

SSL

(Secure sockets layer)

This is a term for the level of encryption used to keep outsiders from peeking at the data you exchange with a website. Every time you enter personal information such as your phone number or address, or provide your credit or bank information to make an online purchase, without SSL, Mr. Joe Hacker could potentially see that information. You can verify if the website is using SSL by a padlock in the bottom corner of your browser window (left for Netscape, right for Explorer). SSL used mostly (but not exclusively) in communications between web *browsers* and web *servers*. *URL's* that begin with "https" indicate that an SSL connection will be used. SSL provides 3 important things: Privacy, Authentication, and Message Integrity. In an SSL connection each side of the connection must have a *Security Certificate*, which each side's software sends to the other. Each side then encrypts what it sends using information from both its own and the other side's Certificate, ensuring that only the intended recipient can de-crypt it, and that the other side can be sure the data came from the place it claims to have come from, and that the message has not been tampered with.

Server

A computer, or a software package, that provides a specific kind of service to *client* software running on other computers. The term can refer to a particular piece of software, such as a *WWW* server, or to the machine on which the software is running. For example, our mail server is down today, which

is why e-mail isn't getting out. A single server machine could have several different server software packages running on it, thus providing many different servers to *clients* on the *network*.

SMTP (Simple Mail Transfer Protocol)

The main protocol used to send electronic mail on the Internet. SMTP consists of a set of rules for how a program sending mail and a program receiving mail should interact. Almost all Internet email is sent and received by *clients* and *servers* using SMTP, thus if one wanted to set up an email server on the Internet one would look for email server software that supports SMTP.

Spam (or Spamming)

An inappropriate attempt to use a *mailing list*, or *USENET* or other networked communications facility as if it was a broadcast medium (which it is not) by sending the same message to a large number of people who didn't ask for it. The term probably comes from a famous Monty Python skit that featured the word spam repeated over and over. The term may also have come from someone's low opinion of the food product with the same name, which is generally perceived as a generic content-free waste of resources. (Spam is a registered trademark of Hormel Corporation, for its processed meat product.) An example would be "Mary spammed 50 USENET groups by posting the same message to each."

URL (Uniform Resource Locator)

The standard way to give the address of any resource on the Internet that is part of the World Wide Web (WWW). Examples of a URL are as follows:

<http://www.matisse.net/seminars.html>

<telnet://well.sf.ca.us>

<news:new.newusers.questions>

The most common way to use a URL is to enter into a WWW browser program, such as Netscape, or Lynx.



**December is
National Drunk and Drugged Driving (3D)
Prevention Month**

Continued from page 1

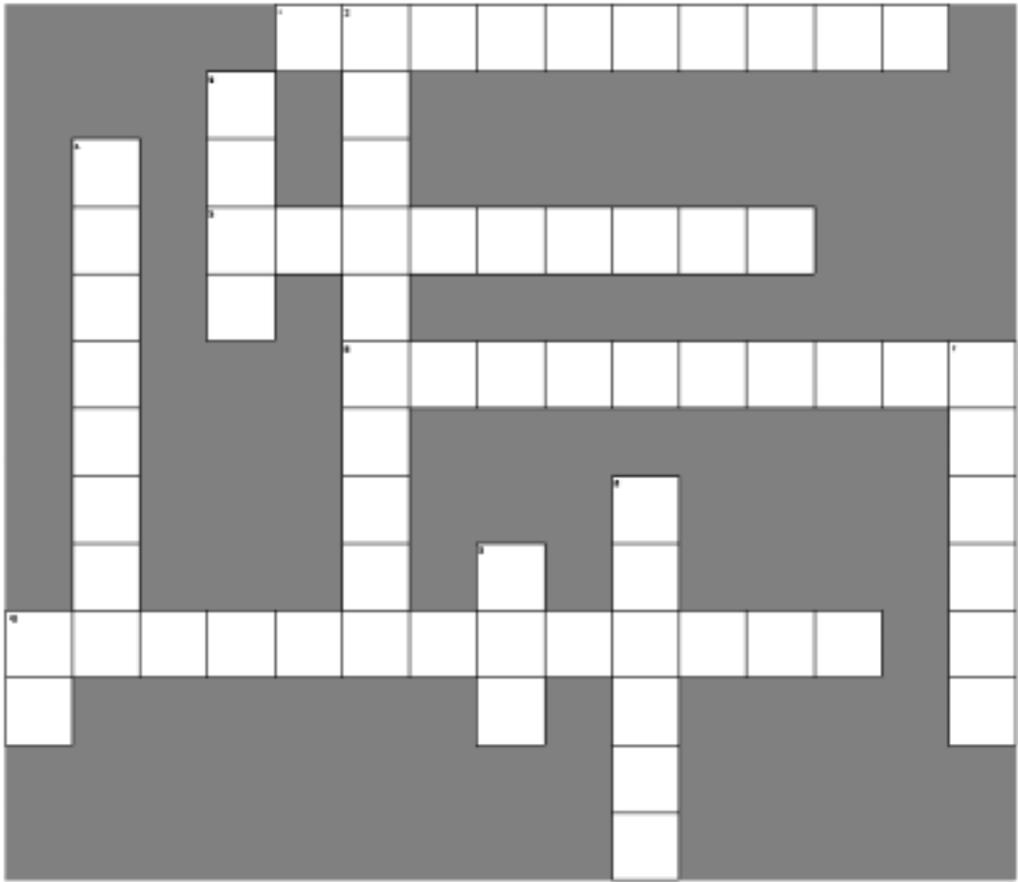
Pediatric dental screenings and well baby dental exams are provided during the Drop-in Dental Screenings scheduled one day a month from 0800-1100. Children under 14 years of age can be seen by the Pediatric Dentist at Lackland AFB, Skylark Community Center (Sky View Lounge, 1st Floor). **No appointment is necessary.** Children with a referral from their private dentist, a military dentist, a WHMC provider, or a provider from another military base should bring their written consults with them. Children receive a dental screening exam, a second opinion about the child's dental condition, and appropriate treatment recommendations and/or alternatives. On occasion, children are scheduled on an "as needed" basis by the front desk at the Dunn Dental Clinic, phone number 292-6259.

The major focus of the pediatric dental screening is to identify good teaching cases for the AEGD dental residents. Generally, we recruit patients between 6-13 years that can be managed with minimal behavior management techniques, and pre-school children requiring full mouth dental rehabilitation in the operating room under general anesthesia. Patients are placed on an "active" waiting list and appointed as needed. The waiting time may be from days to months. Parents are advised to seek civilian dental care at any time that they feel their child's dental health is being compromised. For further questions, please contact SRA Courtney Miller at 292-4072 or Col Jeff Mabry at 292-3327.

Jeffrey Mabry, Col USAF DC
Director, Pediatric Dentistry



December 2001 Review



Across

Down

1. The radiographic test found to be more sensitive in pediatric patients at showing fibrinous strands and loculations
5. The initial phase of a parapneumonic effusion characterized by serous effusion from the lung.
6. Use of this therapeutic modality in the treatment of E. coli O157:H7 may increase the risk for developing HUS
10. Over one-half of all children hospitalized with an acute bacterial pneumonia will develop a _____ effusion.

2. A resultant process of the fibrinopurulent stage of parapneumonic effusions
3. Graphic format preferred for photographic images.
4. Pathogenically, EIEC resembles this species of organisms.
7. A capsule of data about your computer that is left on a website after you visit.
8. E. coli O157:H7 must be considered a possible cause of this type of diarrhea anywhere in the US
9. Serious complication of E. coli O157:H7 infection.
10. A chemistry test of pleural fluid that has the highest predictive value of poor outcome for pleural fluid.

Merry Christmas & Happy New Year



Spanish - Feliz Navidad y Próspero Año Nuevo

Hindi Shubh Naya Baras

Arabic - I'D Miilad Said ous Sana Saida

Bengali - Shuvo Baro Din - Shuvo Nabo Barsho

Russian - Pozdrevlyayu s prazdnikom Rozhdestva i s Novim Godom

Portuguese - Boas Festas e um feliz Ano Novo

Japanese - Shinnen omedeto. Kurisumasu Omedeto

German - Froehliche Weihnachten und ein glückliches Neues Jahr!

French - Joyeux Noël et Bonne Année!

Javanese - Sugeng Natal lan warsa enggal

Italian - Buon Natale e Felice Anno Nuovo



Korean Sung Tan Chuk Ha

Hawaiian - Mele Kalikimaka & Hauoli Makahiki Hou

Apache (Western) - Gozhq Keshmish

Cantonese - Seng Dan Fai Lok, Sang Nian Fai Lok

Cherokee - Danistayohiv & Aliheli'sdi Itse Udetiyvsadiv

Eskimo - Jutdlime pivdluarit ukiortame pivdluaritlo!

Greek - Kala Christougenna Kieftihismenos O Kenourios Chronos

