SIERRA SACRAMENTO VALLEY MEDICAL SOCIETY MUSEUM OF MEDICAL HISTORY

> 5380 ELVAS AVENUE SACAMENTO CA 95819

> > **Free Admission**

Open Tuesday-Friday, 10 AM - 4 PM Closed Mondays/Weekends/Holidays

www.MuseumOfMedicalHistory.org

If possible, watching the virtual museum tour linked on our Medical Museum website might be helpful.

WELCOME TO THE SSVMS MUSEUM OF MEDICAL HISTORY

Sadie will welcome you. She has been at the SSVMS much longer than the museum Medical Museum Educational Student Virtual "Scavenger Hunt"

QUESTION 1



One of the few Iron Lungs on public exhibit

A) What disease led to the use of the iron lung?

B) How does it work?

C) What can be used today instead of an Iron Lung



One form of this diseases caused paralysis (often called infantile paralysis)

A) What disease led to the use of the iron lung?

Polio (Poliomyelitis) also called Infantile Paralysis

Caused by a virus, two varieties, one affects mainly skeletal muscles (walking etc.), the other, bulbar, affects the brain stem and prevents the ability to breathe.

B) How does it work?

When the diaphragm at the foot end of the iron lung pulls out it pulls air into the patient's lungs (as the patient is totally "sealed" in the iron lung) a negative pressure ventilator.

C) What can be used today instead of an Iron Lung?

There are a variety of modern ventilators, except they usually require a tube down the throat or a hole in the neck (windpipe). At times "Positive Pressure Ventilation" can be used with a face mask to allow oxygen to be forced into the lungs.

There are also more compact versions of the iron lung that fit around the chest, rather than the patient's needing to be inside the ventilator

QUESTION 2

For what purpose are leeches used?



Clue 1

HIPPOCRATES The Father of Modern Medicine 2400 Years Ago !!!

Four Humors

Blood, Phlegm, Yellow Bile and Black Bile He believed that diseases could be caused by an imbalance of these humors.

If the patient's disease was thought to be caused by too much blood, the treatment was to remove blood.

For what purpose are leeches used?

A century and more ago...

TO REMOVE BLOOD !!!!

Besides leeches, there were various mechanical devices that could be used.



FLEAMS and SPRING LANCET used for bleeding.

The Scarificator was a spring operated instrument. It would make multiple incisions in the skin, in this case 12 incisions made by the round blades visible below.



Bleeding has been used for at least 3000 years.

There are even references to its use after 1900, and later in the century for conditions such as those causing an increase in the red blood cells.

So for what purpose are leeches used TODAY

STILL...TO REMOVE BLOOD...but they are used by plastic surgeons to prevent the loss of a re-attached area or a surgical flap. After applying their own anesthetic and anticoagulant (to keep the blood from clotting), leeches remove 1-2 teaspoons of blood.



QUESTION 3

What instrument is used to look at germs and blood cells?



https://pixnio.com

Clostridium perfingens (bacteria)_ (Food Poisoning)

Red blood cells with Plasmodium vivax (Malaria)



https://pixnio.com

CLUE

Blood cells and bacteria are very small objects that need to be made visible...

Definition of MICRO: extremely small or minute in scope or capability



The Microscope





A Dutch father-son team named Hans and Zacharias Janssen invented the first so-called compound microscope in the late 16th century .

By the late 1600s, improvements to the lenses increased the quality of the image and the magnifying power to up to 270x, paving the way for major discoveries

In 1676, Dutch cloth merchant-turned-scientist Antony van Leeuwenhoek further improved the microscope with the intent of looking at the cloth that he sold, but inadvertently made the groundbreaking discovery that bacteria exist

> https://www.smithsonianmag.com/science-nature/whatwe-owe-to-the-invention-microscope-180962725/



One use of the microscope was its use with...

the hemocytometer, used to examine and count blood cells. Blood is "sucked up" into the glass tube and then put into the glass chamber which is put under a microscope. Such a technique was not unusual even in the mid **1900's**

QUESTION 4

1) Certain instruments let doctors look inside body cavities. What is this technique called?

2) Give an example of what you can look at using one of these instruments. Name three organs or areas that can be examined this way?

CLUE



1) Certain instruments let doctors look inside body cavities.

What is this technique called?

"Endoscopy"

Laparoscopy refers to looking into the abdomen with an instruments inserted through a small incision. Cystoscopy is the examination of the bladder through an instrument passed through the urethra.

Older instruments were "optical" meaning there was a rigid tube with a light and eyepiece. Modern improved instruments are smaller, flexible, and use a miniature camera so they are less invasive and more versatile. 2) Give an example of what you can look at using one of these instruments. Name three organs or areas that can be examined this way?

The organs in the abdomen such as the spleen and liver or the inside of organs such as the urinary bladder (cystoscopy), stomach (gastroscopy) or colon (colonoscopy). Also joints such as the knee.

More recently surgery can be performed with scopes, such as removal of part of the stomach (gastrectomy) or part of the colon (colectomy). And even more recently such surgery can be done by a "robot" with the surgeon sitting at a computer console distant from the patient.



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https://www.intuitive.com

The surgeon at a computer console controls the robotic arms with attached small instruments. This allows precise movements in confined spaces and in long operations prevents tremors that normally occur in our muscles with prolonged stressful procedures.



https://www.intuitive.com

QUESTION 5

1) What is quackery?

2) Is quackery still around?

3) Can you give an example?



QUACK definition:

The word Quacksalver had its origin in 1579 and referred to one <u>pretending</u> to have skills or knowledge, especially in medicine

1) What is quackery?

Quackery is the recommendation or use of instruments, drugs, and other items that claim to cure or remedy a condition but have no beneficial effect and may even be harmful.

2) Is quackery still around? YES!!! It can be found advertised in magazines, newspapers and television

3) Can you give an example?





The Patent Magneto Electrical Unit and the Violet Ray were two common quackery items from the early 20th century.

QUESTION 6





















































Do you know what these are???

 When was the first artificial heart valve inserted?
Which cardiovascular surgeon in Sacramento developed artificial heart valves?


1) When was the first artificial heart valve inserted? **Dr. Hufnagle implanted the first artificial** heart valve in 1952. 1960 was the first valve replacement using "open heart" surgery but various other types of valve replacements were done before that time

https://cardiovascmed.ch/article/doi/cvm.2017.00532

2) What cardiovascular surgeon in Sacramento developed artificial heart valves?

Dr. Ed Smeloff, in the 1950's, in conjunction with **Sacramento State Bioengineering Dept. and** the Sutter Research Institute





What does an electrocardiogram (EKG) measure?



The EKG (also known as ECG) measures the electrical impulses of the heart.

It can detect abnormal heartbeats (rhythms) and provide evidence of a heart attack.

QUESTION 8 Bacteria cause many diseases like pneumonia, tonsillitis, and tuberculosis.

What types of drugs are used to treat these diseases?



Against Life = Anti - Bio

(This word, however, was first used in 1860 and described an opposition to the belief in life beyond earth) Antibiotics such as penicillin, erythromycin, tetracycline, and numerous more recently discovered and potent drugs.

Antibiotic - a medicine that inhibits the growth of or destroys microorganisms



What was the first "true" antibiotic

Antibiotics are compounds produced by bacteria and fungi which are capable of killing or inhibiting competing microbial species.

CLUE











Penicillin was the first true antibiotic.



When and how was it discovered?

Penicillin was discovered in 1928 by Alexander Fleming at St. Mary's Hospital in London, England. He had left the cover off a Petri Dish and discovered that where a mold (Penicillium) had grown the bacteria that had been inoculated on the plate would not grow.

It was not until 1938 however, when technology had improved, that Howard Flory was able to isolate Penicillin for medical use. He, along with Ernst Chain and Alexander Fleming ,shared the Nobel Prize in 1945 for creating the first mass-produced antibiotic. It was first used in the 1942 and played an important role in World War II.

Viruses cause many diseases like measles, mumps, chicken pox, polio and the flu.

What can prevent these diseases?
Do antibiotics work against viruses?
Can you explain why?





CLUE

they all got vaccine except dad...



This actually happened to the man in the iron lung...James Wood, 36, of Charlotte, Mich. He was the only member of his family not vaccinated against polio and the only one to come down with the disease. Wood and his wife both planned to be vaccinated. One night last April they were about to go out for their Salk shots when friends dropped in and the trip was postponed. Later, an extra-money night job kept Wood from going to a vaccine clinic with his wife. The children, of course, had been vaccinated. Robert, 13, Norman, 11, Nancy, 10, James, 6, and Sarah Jane, 3, had all three shots; Edgar, 2, had two. Baby John was born after dad was stricken. "Jim just didn't get to it," Mrs. Wood says of the ill fortune that befell her husband. "Now, the only good will be if what happened to us helps somebody else."

don't take a chance...take your polio shots!

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

301 EAST 42nd STREET, NEW YORK 17, N.Y.

CLUE



1) What can prevent these diseases? Immunizations, also known as vaccinations.



Smallpox vaccination was responsible for completely getting rid of smallpox in the world.

2) Do antibiotics work against viruses? No

3) Can you explain why? Viruses are not "living" organisms like bacteria, but depend on the cells of the patient to reproduce.

BONUS QUESTION

Who was the first person to immunize against Smallpox, and what did he use? The English Physician, Edward Jenner, used the Cowpox virus in 1796.

(And he confirmed its effectiveness by exposing the patient to Smallpox.)

1) In 1918 more than 20 million people worldwide died of what disease?

2) How was it spread?



1) In 1918 more than 20 million people worldwide died of what disease?

Influenza (Flu)

2) How was it spread?

Respiratory spread (coughing, breathing, sneezing)

In modern times, anesthesia and sterile technique have been important advances in the operating room.

In the following photo what seems to be missing?



from: Doctors of the Old West A Pictorial History of Medicine on the Frontier by Robert F. Karolevitz

Original Image from: Northwest Medicine, "100 years of Medical Education in Oregon"

In the photo, no one is wearing special clothing (sterile gowns), caps, facemasks or gloves. There are no sterile surgical instruments. The patient is not covered with sterile drapes. the operating room window is open allowing contaminants and insects into the room.

These all lead to an increased risk of infection.



1) The first surgery using general anesthesia occurred in what city in 1846?

2) What kind of anesthesia was it?



Harvard Medical Library in the Francis A. Countway Library of Medicine, Boston, Massachusetts

Surgery in Boston about 1847

1) The first surgery using general anesthesia occurred in what city in 1846? Boston (Massachusetts)

2) What kind of anesthesia was it? Ether



ETHER MASK This mask was put over the nose, and ether applied drop by drop for general anesthesia before surgery. Ether was a relatively safe anesthetic except for its flammability and explosiveness. Circa 1930



What was the best thing you learned today?

For advanced or secondary schools, or bonus work, here are additional questions

1) Who discovered X-Rays and when?

2) Name two advances in Body Imaging

William Conrad Roentgen 1845-1923

A German physicist who, in 1895, produced and detected a wavelength of electromagnetic radiation known as X-Rays or Roentgen Rays. In 1901 he earned the first Nobel Prize in Physics for that discovery.















CAT Scan and MRI

A) Wilhelm Roentgen - He received the first Nobel Prize awarded for physics in 1901

B) Computerized Axial Tomography (CAT Scan) and Magnetic Resonance Imaging (MRI) and Positron Emmission Tomography (PET) Scan

1) What important Ethnic group in 19th century Sacramento had valuable medicines to treat illness?

2) Give two examples




WU LING ZHI (Excrementum Trogopterori Seu Pteromi) Common Name: Flying Squirrel Feces

Functions: Used for menstrual pain, epigastric pain, or postpartum abdominal pain.

Note: Traditionally this herb is contraindicated in combination with Ren Shen (Radix Ginseng).



XIA KU CAO (Spica Prunellae Vulgaris)

Functions: Used for swollen glands, neck lumps or nodules, or red painful swollen eyes.

Note: Often used with Ju Hua (Flos Chrysanthemi Morifolii) for headache and redness in the ey



LU FENG FANG (Nidus Vespae) Common Name: Hornet Nest

Functions: Used topically as an ointment or wash for skin rashes, itching, scabies, ringworm, or carbuncles.

Cautions and Contraindications: Poisonous, contraindicated in skin sores that have already burst open.



XING REN (Semen Pruni Armeniacae) Common Name: Almond Kernel

Functions: Relieves cough and wheezing, and moistens and moves the stool.

Cautions and Contraindications: Over dose of this herb can cause dizziness, nausea, vomiting, and headache, which can progress to coma. Cooking and removal of outer coat decreases toxicity. The bark of an apricot tree is used as an antidote.

> TIAN MEN DONG (Tuber Asparagi Cochinchinensis) Common Name: Tuber of Chinese Asparagus

Functions: Used for a dry mouth and thick or blood-streaked sputum that is difficult to expectorate.

HUANG QI (Radix Astragali)

Functions: Often used with Ren Shen (Radix Ginseng) for reduced appetite, fatigue, and spontaneous sweating.



1) Chinese Immigrants brought their traditional medicines and therapies.

2) See 2 prior slides for multiple items in the exhibit case

QUESTION 17 Who invented the stethoscope

The Diagnostic Case contains a wide variety of stethoscopes...



invented the stathassons?

Dr. Rene Laennec, a French Physician, in 1816.



What was allowed during Prohibition, but only with a Doctor's prescription?

> Prohibition: January 17, 1920 to December 5, 1933



Alcohol (ethanol) which included liquor, beer and wine.

Name three diseases caused by viruses

Clues

Name three diseases caused by viruses

CHILDHOOD DISEASES Chickenpox Measles (Rubeola) Mumps Poliomyelitis Rubella (German Measles) Smallpox

OTHER DISEASES Influenza Hepatitis

Name three diseases caused by bacteria

Clues

Name three diseases caused by bacteria

CHILDHOOD DISEASES

Diphtheria Pertussis (Whooping Cough) Scarlet Fever Tetanus OTHER DISEASES Cholera Tuberculosis Leprosy Anthrax Impetigo Strept Throat (Tonsillitis)

What are Patent Medicines

Give 4 examples











What are Patent Medicines

Non-prescription compounds sold for medical treatment (remedy or cure) that often do not work as promoted. They often contain a significant amount of alcohol. Also occasionally called nostrums.

Give 4 examples

Carter's Little Liver Pills Lydia Pinkham's Pink Pills Doan's Kidney Pills

How did people die of Diphtheria

Asphyxiation (Inability to breathe) due to a "membrane" formed over the trachea

and

by a Toxin produced by the bacteria

Before the days of immunizations and antibiotics CLUE treatments such as these were required to try to save patients, especially children, from dying (in this case from Diphtheria)





Name six diseases prevented by immunizations

Mumps Measles Rubella Rubeola Polio **Diphtheria Pertussis** Tetanus HPV

Rotavirus Chicken Pox Hepatitis A Hepatitis B Haemophilus influenza type b Pneumococcal Disease Meningococcal Disease

There are also numerous other vaccines/immunizations used less frequently. They are used to prevent diseases when traveling to other countries, such as for cholera and rabies.

QUESTION 24 How were extremity injuries often treated during the Civil War...and why?



Case of D. Jerman, F. 190 Pennsylvania.



How were extremity injuries often treated during the Civil War...and why?

Amputation

If a broken bone penetrated the skin, and before the days of antibiotics, the mortality was about 100% from infection. The mortality rate from amputation was only about 50%, so 1 in 2 survived.

Thank you for taking our virtual medical museum "scavanger hunt"

THANKS FOR YOUR ATTENTION AND INTEREST IN OUR MUSEUM.....

PLEASE VISIT US... (After our Pandemic)

5380 ELVAS AVENUE MONDAY-FRIDAY 9 AM - 4 PM CLOSED HOLIDAYS

DR. BOB LAPERRIERE, CURATOR ssvmsmus@gmail.com

You can ALWAYS visit us at our website:

www.ssvms.org/museum

or just go to www.ssvms.org

There you can chose the museum section, but also see our publications including our bi-monthly journal SSVmed.





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