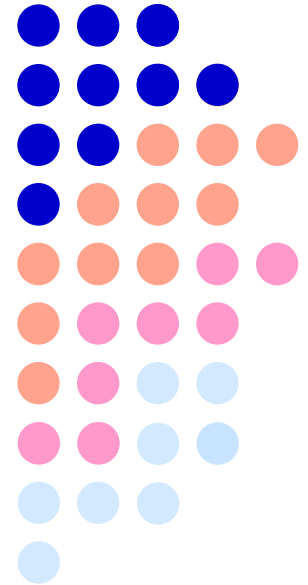
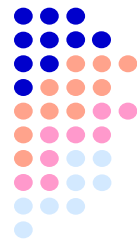


History of major advances in medicine, social medicine and hygiene

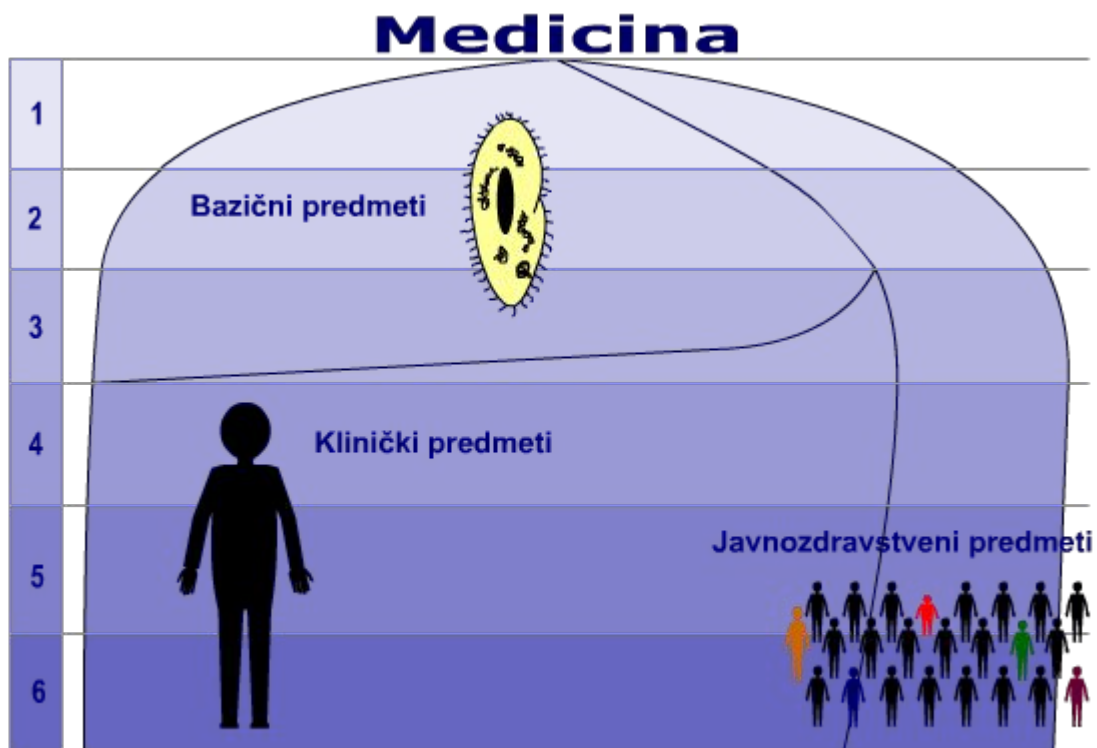
Ivana Kolčić, MD, PhD

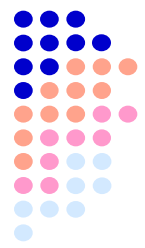


Medicine



Social medicine

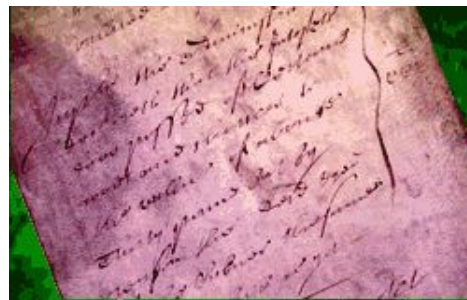




History of medicine - highlights

Social medicine

- epidemics – well known through all of the human history



- Until 16th century every disease in epidemic proportion = "*pestis*" or "*pestilentia*"



History of medicine - highlights

Social medicine

- **Bernard de Gordon** in 14th c. in "*Lilium medicinae*" describes communicable diseases like: leprosy, anthrax, trachoma, acute fever, scabies, epilepsy, but does not mention **plague**, which was a pandemic known as "**black death**"



History of medicine - highlights

Social medicine



- Plague pandemic started in 1332 in India, spread through China and Russia to Constantinople and Italy
- In the middle of 14th c.- whole Asia, Europe and north Africa
- ...wasteland, extinct cities, corps lying around, with no one to bury them





History of medicine - highlights

Social medicine

- “black death” most prominent in Dalmatia (Split, Zadar, Dubrovnik)
- In **Dubrovnik in 1377** – **first quarantine in the world** – 40 days of isolation and observation prior to unloading the cargo and people



History of medicine - highlights

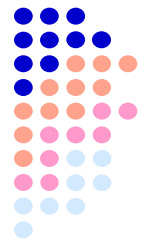
Social medicine



- During 14th and 15th century – other epidemics: variola, dysentery, scurvy, leprosy...



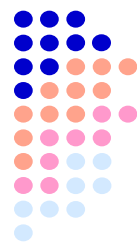
History of medicine - highlights



Social medicine



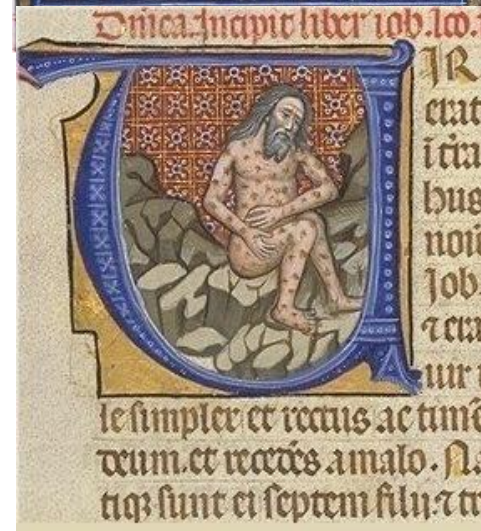
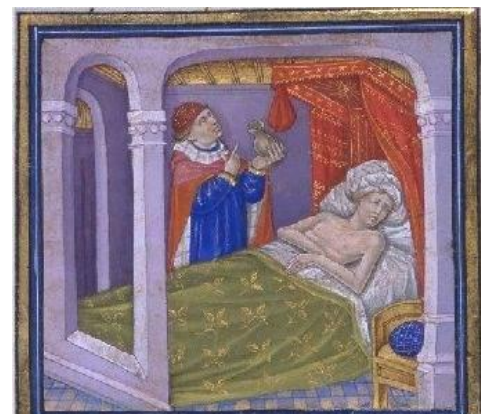
- **Girolamo Fracastoro** – theory about **invisible germs** that spread and cause diseases
- Through direct contact, via objects, ability to spread far from the source
- Refutes Galen's "miasm theory" (poisonous air and fumes)



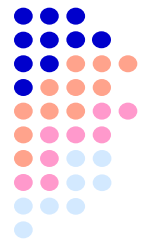
Girolamo Fracastoro

Social medicine

- "*De contagione et contagiosis morbis*" in **1543** – claims that germs multiply, are poisonous, could be destroyed by fire
- **Recommends regular body hygiene, clean environment, water and food sanitation, disinfection**

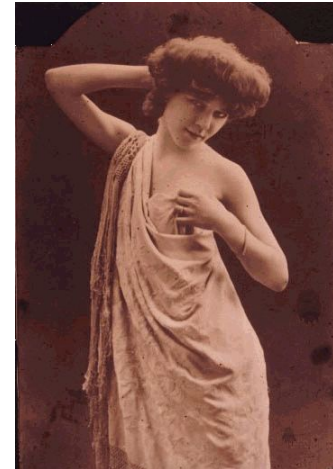


History of medicine - highlights



Social medicine

- at the end of 15th century and in 16th c. – new epidemic in Europe – syphi

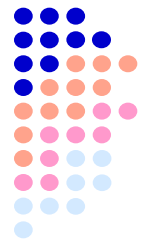


- In Italy, Spain...

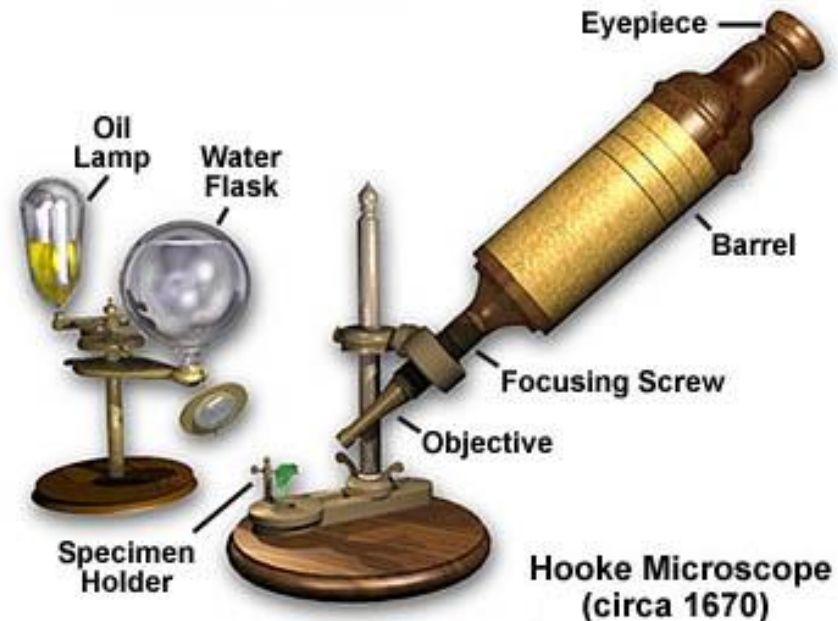


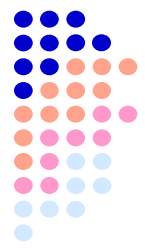
History of medicine - highlights

Social medicine



- Microscope discovery
- **Antony van Leeuwenhoek** in 1670

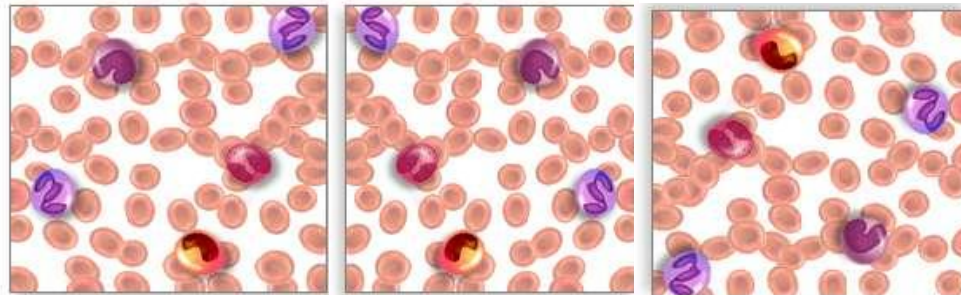


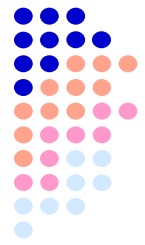


Antony van Leeuwenhoek

Social medicine

- Leeuwenhoek analyzed blood, saliva, bones, muscles, human eye lens, ect.
- Achieved magnification up to 40-160 times, later up to 270 times





History of medicine - highlights

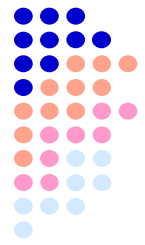
Social medicine

- In 18th c. doctor from Slovenia **Marko Anton Plenčič** supports the theory about **small living creatures** which cause communicable diseases
- He hypothesized that different creature causes different, specific disease
- **Described human immunity, susceptibility, incubation, disease carriers, some diseases (scarlet fever, variola)**



History of medicine - highlights

Social medicine



- At the end of 18th c. British doctor **Edward Jenner** noticed that women who milk cows often get cow pox (much more benign than smallpox) and never get smallpox, as a consequence



Edward Jenner



Social medicine

- After 20 years of observation – **experiment** on 8yrs old boy James Phipps
- Jenner took the pus from the hand of a women with cow pox and applied it to the boy – after 6 weeks the boy was exposed to smallpox – didn't get smallpox
- Published a book about **vaccination** in 1798 (vacca=cow)

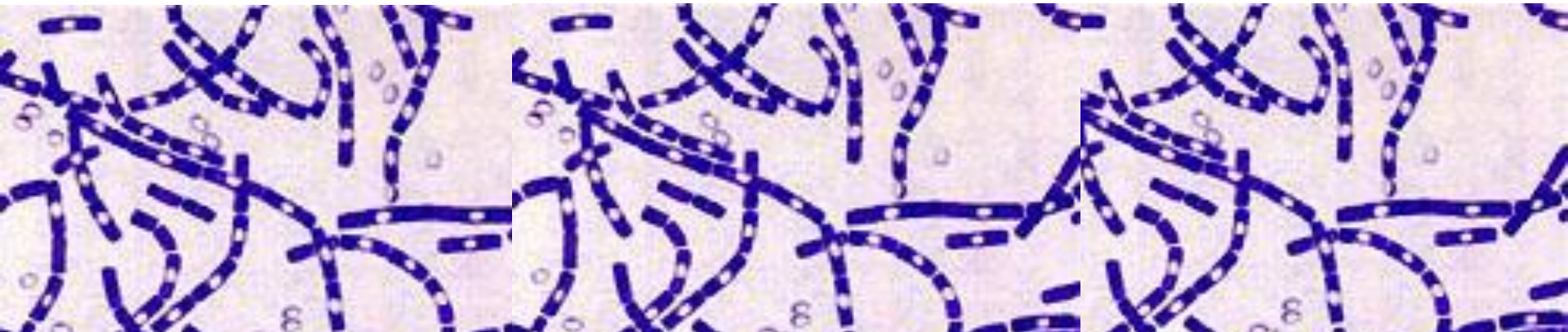


History of medicine - highlights

Social medicine



- Only in 19th century bacteria have been discovered
- **Pollender** discovered one of the largest bacteria - **anthrax** in the blood of dead animals



History of medicine - highlights

Social medicine



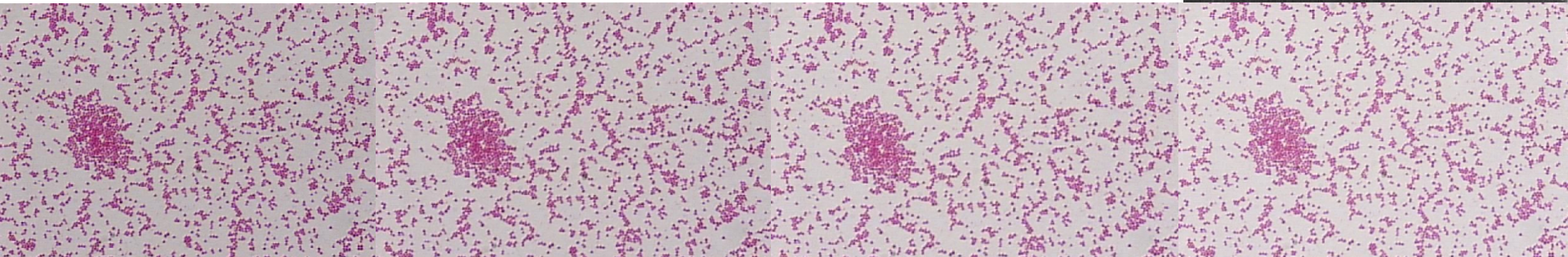
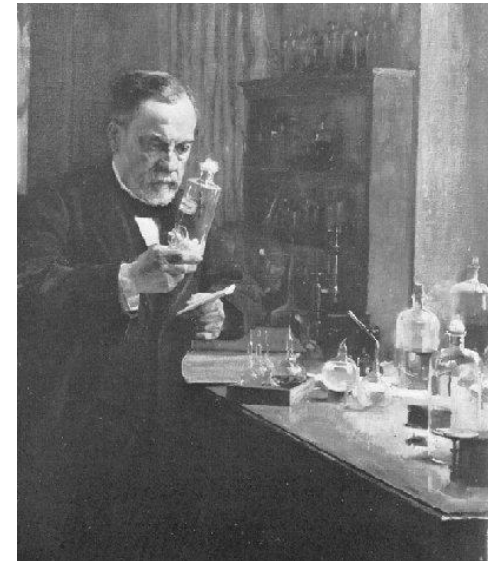
- **Louis Pasteur** – foundations for modern theory about causes of communicable diseases
 - discovered yeasts
 - introduced **pasteurization** for wine and milk



Louis Pasteur

Social medicine

- Investigated other pathogenic microorganisms
- Noticed how anthrax culture loses virulence – when applied to healthy animal it didn't cause the disease
- Created **vaccine** to immunize rams against **anthrax**
- In 1881. discovered **streptococcus and staphylococcus bacteria**





Louis Pasteur

Social medicine

- In 1885 **L. Pasteur** introduced **vaccination against rabies**
- Dried spinal cord from dogs died of rabies Pasteur applied for 9yrs old boy Joseph Meister, who was bitten by a rabid dog – the boy was saved
- Thanks to Pasteur, countless lives were saved all over the world





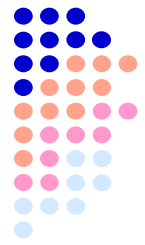
History of medicine - highlights

Social medicine

- During 19th c. in England – **great cholera epidemic**
- **John Snow** – a doctor particularly interested in this epidemics in 1854 creates hypothesis that cholera was transmitted via water



History of medicine - highlights



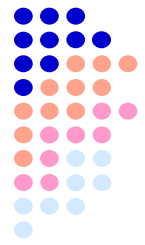
Social medicine



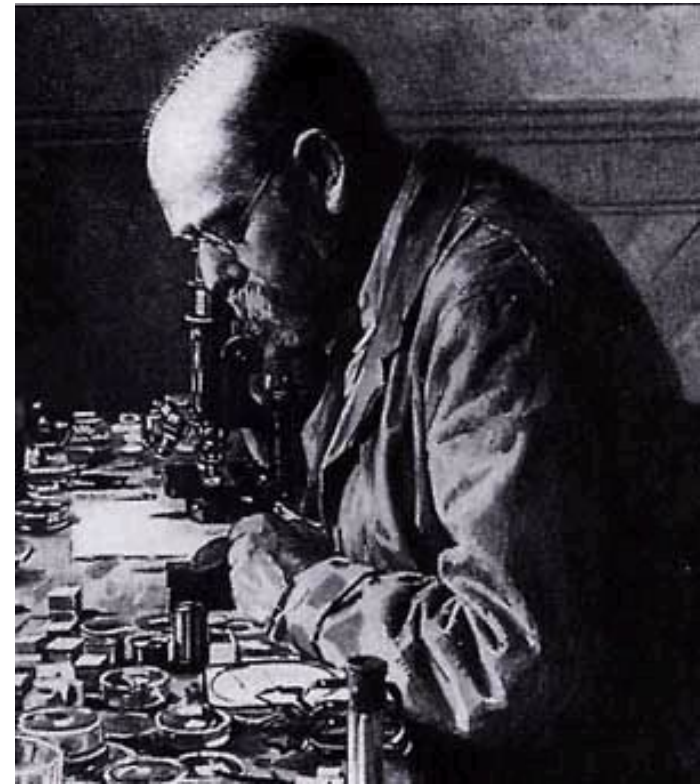
- 1882 **Robert Koch** discovered *M. tuberculosis*
 - 1890 discovered tuberculin, first considered cure, later became diagnostic tool
-
- tuberculosis was a pandemic at the end of 19th c. due to poor social and economic conditions

Robert Koch

Social medicine



- Koch also investigated other microorganisms: cholera, plague, malaria, typhus, amoebiasis





History of medicine - highlights

Social medicine

- At the end of 19th c. **Koch and Pasteur** formed new discipline -

microbiology

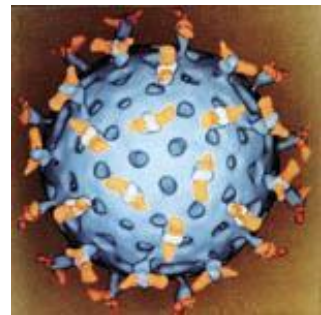
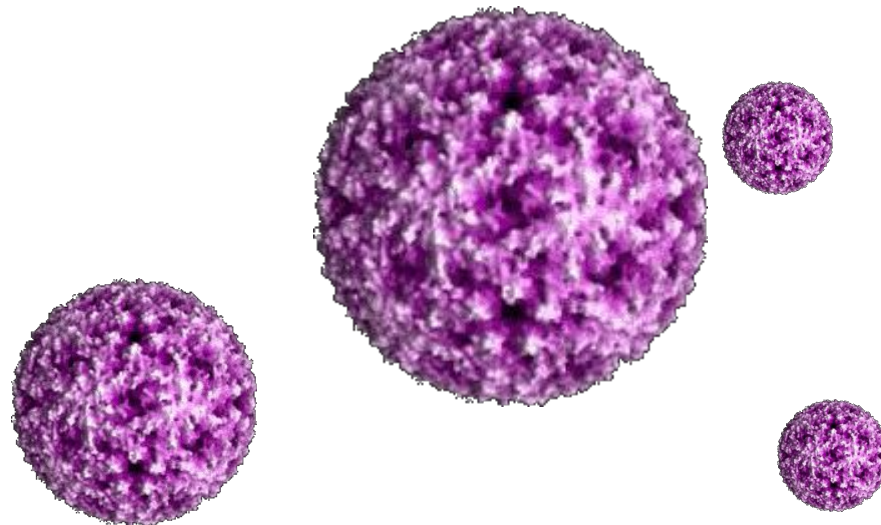
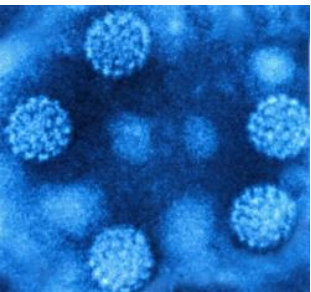
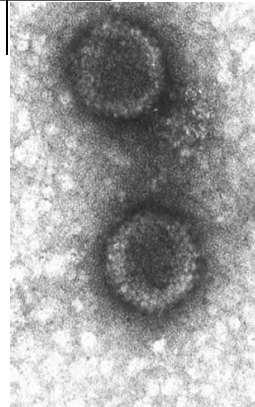




History of medicine - highlights

Social medicine

- Beginning of 20th c. – discovery of **viruses**
- 1908 - **Karl Landsteiner** - poliomyelitis virus
- 1912 - **Wilhelm Grueter** – herpes virus



History of medicine - highlights

Social medicine



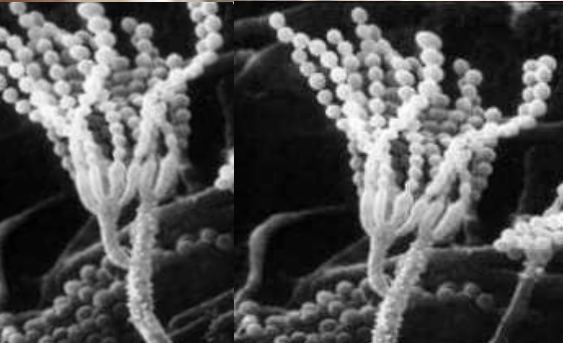
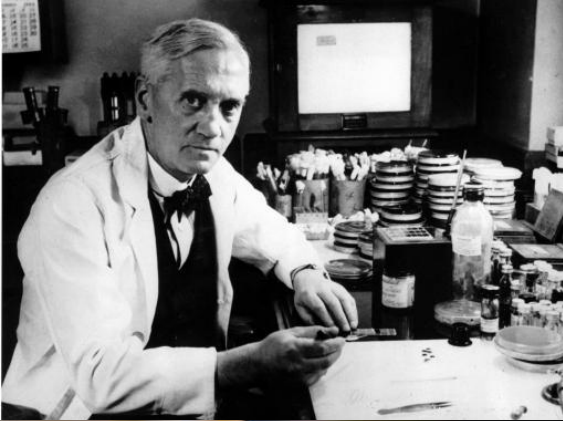
- In 1907 **Paul Erlich** introduced **chemotherapy** (chemicals that selectively destroy microorganisms, without causing damage to the host)
- 1923 – systematic prophylactic **BCG vaccine**



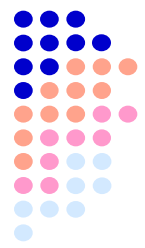


History of medicine - highlights

Social medicine



- 1928 **Alexander Fleming** accidental finding that the presence of molds blocked coccus culture growth
- *Penicillium notatum* - penicillin

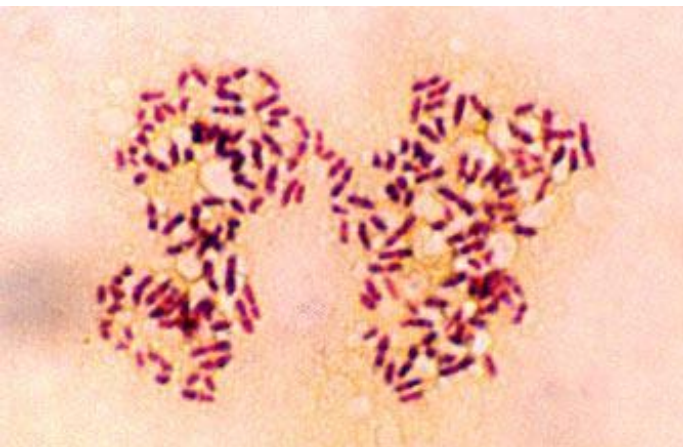


History of medicine - highlights

Social medicine



- Only from 1940s penicillin was applied during WWII against coccus bacteria, *C. diphtheriae*, anthrax, tetanus
- Over following years – discoveries of other antibiotics, most important was **streptomycin** (Selman A. Waksman – coined term antibiotic)

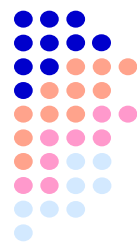


History of medicine - highlights

Social medicine



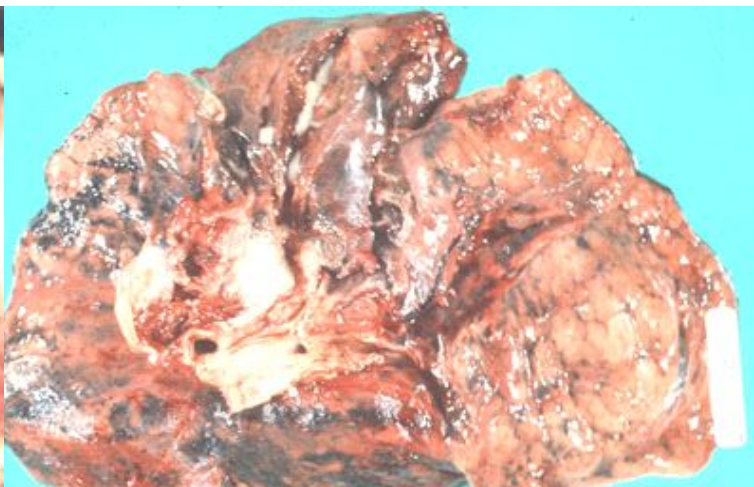
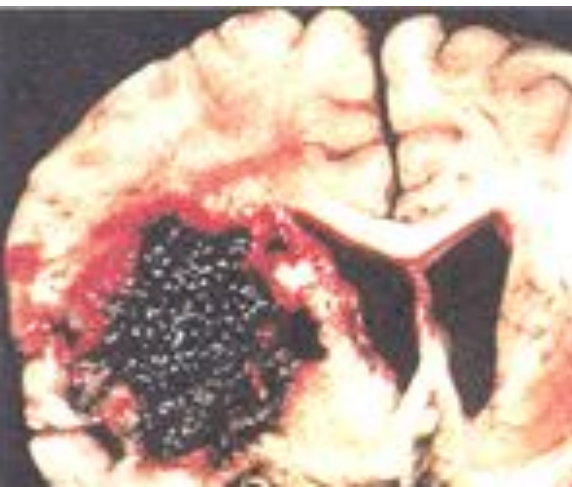
- Discovery of microorganisms, antibiotics and vaccines – led to disappearance of fatal epidemics of the past
- Further progress in medicine, social sciences, technology and economy - led to increased life expectancy in wealthy populations, and change in morbidity and mortality patterns



History of medicine - highlights

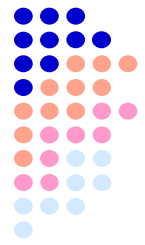
Social medicine

- During middle of 20th c. – increase in **cardiovascular diseases** morbidity and mortality in developed countries
- Leading causes of death, accompanied with cancers and accidents (traffic)

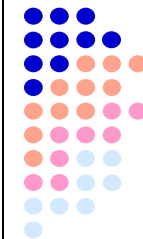


Framingham study

Social medicine



- started in 1948 in USA – most famous and longest cohort study of cardiovascular diseases risk factors



Smoking effects in 1940s?

Social medicine

• The papers printed have been checked and certified by the Federal Food and Drug Administration, Accidents and Robbery.

20,679* Physicians
say **"LUCKIES**
are ***less irritating***"
"It's toasted"
Your Throat Protection against irritation against cough

According to repeated nationwide surveys,

More Doctors Smoke **CAMELS** than any other cigarette!

Doctors in every branch of medicine were asked, "What cigarette do you smoke?" The brand named most was Camel!

You'll enjoy Camels for the same reason as more doctors enjoy them. Camels have mild, moist tobacco, pink silver packs, and a flavor unmatched by any other cigarette. Make this another one of your favorites. Camels like doctors and you have world-famous press your name. You will also smile from doctor to your family member. You'll have been responsible cigarette ever!

THE DOCTORS' CHOICE IS AMERICA'S CHOICE!

"I'll Be Right Over!"

... 24 hours a day your doctor is "on duty" ... guarding health ... protecting and prolonging life ...

Physicians ... make you ... the most important and best ... have been writing about the time to smoke and the benefits of it. But in the night, when he is ... a lot of a cigarette ... and ... back to their job again.

According to a recent **Nationwide survey!** **MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE!**

TWO OF America's leading independent research organizations asked 113,197 doctors to name the cigarette they themselves preferred to smoke.

The answer came in by the thousands ... from doctors in big cities, in small towns ... from general physicians, dispensaries, surgeons, specialists, dentists in every branch of medicine! Result! More doctors smoke Camels than any other cigarette!

THE "S-2000" TEST WILL TELL YOU

"You're like part of the family, Doctor!"

A doctor, your doctor if the answer of medicine ... 113,197 doctors in all ... who smoke the best variety for their patients, who regard them themselves as part of the family ... the brand that doctors use ... Camels.

Blue and a doctor smile for goodness sake. The pleasing addition of a filter makes the smoke even more pleasant to inhale ... the U.S. All Form of Camel's specially blended tobacco always put up according to the same 85 per cent non-smoking tobacco law. Try them in your "S-2000" test!

MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE

YOUR "S-2000" WILL TELL YOU ...

CAMELS *Castles* **Tobacco**

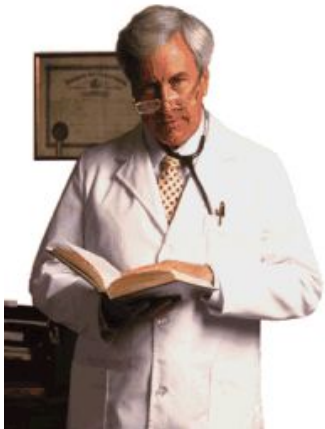
- <http://www.youtube.com>
- **More Doctors Smoke Camels Than Any Other Cigarette**

Smoking effects

Social medicine



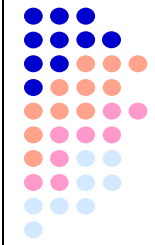
- Countless experiments and studies investigated smoking effects
- In 1951 famous study among British doctors began – smoking and lung cancer association?
(R Doll and AB Hill)



History of medicine - highlights

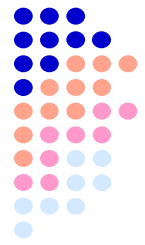
Social medicine

- Second half of 20th c. research topics:
 - Oral antidiabetic therapy
 - Ionizing radiation and leukaemia
 - Sacharin and bladder carcinoma
 - Thalidomide effects
 - Estrogen supplementation and endometrial cancer, and breast cancer
 - Passive smoking
 - HIV/AIDS
 - Risk factors for accidents
 -



Top achievements in medicine?

Social medicine



- <http://science.discovery.com/convergence/100discoveries/big100/medicine.html>
- <http://www.healthfiend.com/weeklytop/top-10-greatest-medical-discoveries-of-all-time/>

Jon Queijo: Breakthrough!: How the 10 Greatest Discoveries in Medicine Saved Millions and Changed Our View of the World



Social medicine

- Chapter 1. The World's First Physician: **Hippocrates** and the Discovery of Medicine
- Chapter 2. How **Cholera** Saved Civilization: The Discovery of Sanitation
- Chapter 3. Invisible Invaders: The Discovery of **Germs** and How They Cause Disease
- Chapter 4. For the Relief of Unbearable Pain: The Discovery of **Anesthesia**
- Chapter 5. I'm Looking Through You: The Discovery of **X-Rays**
- Chapter 6. The Scratch that Saved a Million Lives: The Discovery of **Vaccines**
- Chapter 7. From Ancient Molds to Modern Miracles: The Discovery of **Antibiotics**
- Chapter 8. Breaking God's Code: The Discovery of Heredity, Genetics, and **DNA**
- Chapter 9. Medicines for the Mind: The Discovery of **Drugs for Madness, Sadness, and Fear**
- Chapter 10. A Return to Tradition: The Rediscovery of *Alternative Medicine*