timeline of events in the history of medicine

see also:

- historic perspectives of medicine
- a brief history of medicine in Melbourne and Victoria

21st century

- research based on genome analysis

2010's:

- hospitals gradually adding WiFi capabilities
- metamphetamine epidemic
- STI epidemic

2000's

- decade of HPV vaccination, angioplasty and stenting for AMI in preference to thrombolysis, controversial thrombolysis for acute stroke, BiPaP/CPAP for APO and other respiratory conditions, ED bedside ultrasound, increasing substance abuse issues, increasing hospital overcrowding in Western countries due in part to the aging population, formation of ED observation units and fast track streaming
- ED bedside ultrasound becomes common place for trauma and early pregnancy patients in particular
- Gardasil HPV wart virus vaccination for teenage girls dramatically reduces incidence of cervical dysplasia and cervical cancer
- VRE and clostridium difficile infections become increasing issues in hospitals
- SARS outbreak
- aging population with increasing healthcare expectations and demands, with decreasing social supports with the further decentralisation of the family unit contributed to hospital overcrowding and increasing bed access block in Western societies
- post-911 global psyche ramifications spurs a return in living for the day, taking risks and new level of sexual promiscuity and prevalence of sexually transmitted infections (STDs/STIs) after the 1990's era of relative risk averse behaviour following the fears of AIDS

20th century

1990's:

- decade dominated by fears of the AIDS epidemic offset by important strides forwards with HiB vaccination, MRI scanners introduced, CT scanners and ultrasound machines much improved and more readily available, the internet, mapping of the human
genome, de-institutionalisation of mental health care

- 1998: leukotriene receptor antagonists marketed for Rx of asthma
- 1995: 1st HIV protease antiretroviral agent hits the market - a HIV protease inhibitor, saquinavir, 1st discovered in 1987
- 1995: meta-analysis suggested that primary angioplasty had better outcomes than iv thrombolysis for AMI leading to a push for emergent 24×7 “hot” angio facilities
- 1992-95: several studies confirmed that ACEI's reduced mortality and morbidity when started after AMI, joining the roles of aspirin, betablockers and statins, however, long term antiarrhythmic agents increased mortality in general.
- 1993: GUSTO trial of thrombolytics in AMI showed that accelerated dose tPA PLUS heparin improved survival compared with streptokinase, and the LATE study showed there was benefit even if given after 6-12hrs after onset
- 1993: Haemophilus influenza B (HiB) vaccination rapidly eradicates invasive Hib infections such as epiglottitis, Hib meningitis and periorbital cellulitis
- 1992: Richards: genetics of Fragile X syndrome and elucidation of a new genetic mechanism
- 1991: Histoacryl tissue adhesive (n-butyl cyanoacrylate) starts to be used in Australian EDs for superficial wound closure in children
- 1991: Australian court ruling on involuntary passive smoking starts the process of banning smoking indoors at work, public buildings and then in cars
- 1991: budesonide showed to suppress growth in children
- 1991: home nebulisers and peak flow meters for asthma Rx
- 1991: epigenetics: relationship of maternal starvation to diabetes in their offspring
- 1990: AIDS prevention advertising campaigns combined with economic recession leads to more risk averse sexual behaviours until 911 changed the Western world
- 1990: neurofibromatosis gene disc.
- 1990: subcutaneous progesterone only implants (Norplant) introduced in USA
- 1990: Goto: disc. of endogenous digitalis-like factor
- 1990: working party conclude that Helicobacter pylori is indeed the major factor in peptic ulcer disease
- 1990: salmeterol for nocturnal asthma and recognition of growth suppression in children Rx with oral prednisolone for mild asthma
- 1990: patient asthma Mx plans - peak flow vs symptom only

1980's:

- decade of the CT scanner and diagnostic ultrasound machine, personal computer, AIDS, Helicobacter as cause of peptic ulcer disease, thrombolysis for AMI, IVF, new viruses discovered including HIV and hep C, 1st antivirals for herpes, and the development of emergency medicine as a specialty. Major campaigns to reduce road trauma - speeding, alcohol, safer cars in particular.
- 1989: biosynthetic pathway of nitric oxide discovered
- 1989: MRC approves funding for Human Genome Mapping Project
- 1988: ISIS-2 trial of streptokinase and/or aspirin for AMI
- 1988: RU486 (mifepristone) licensed for use in France to assit with terminations
- 1988: Choo et al: Hep C virus discovered
- 1988: Histoacryl tissue adhesive (n-butyl cyanoacrylate) widely used in UK for superficial wound closure
1970's:

- decade of the pocket calculator, road trauma prevention programs, cephalosporins, IUCD, permanent pacemaker, invasive ICU monitoring, increasing antibiotic resistance, cardiac arrest protocols
- 1979: 3rd generation cephalosporins studied - cefotaxime
- 1978: 1st Epson dot matrix printer
- 1978: bretylium approved in USA as antiarrhythmic and was included in the cardiac arrest protocol for some years
- 1978: disopyramide approved in USA for RX of some ventricular arrhythmias
- 1978: clavulonic acid studied
- 1978: Ganong: theory of conversion of angiotensin I to angiotensin II by ACE in the pulmonary circulation
- 1977: 1st successful intubation techniques by paramedics
- 1977: 1st Commodore microcomputer
- 1977: Jick et al: disc. that smokers have 2yrs earlier menopause on average
- 1977: Yuzpe: morning after pill introduced
- 1977: Kaposi's sarcoma reported in 2 homosexual men
- 1977: Lord: endogenous opioid peptides discovered
- 1977: clinical psychology recognised as an independent profession
- 1976: slow release progesterone introduced: Progestasert
- 1976: non-A non-B hepatitis coined
- 1976: ECMO 1st used for neonatal respiratory distress
- 1975: endogenous opioid peptides discovered
- 1975: voluntary abortion legalised in France
- 1975: Lord: endogenous opioid peptides discovered
- 1975: 2nd generation cephalosporins studied - cefoxitin
- 1974: Glasgow Coma Score
- 1974: Morson: recognition that colon cancers arise from adenoma rather than de novo
- 1974: Copper 7 IUCD introduced
- 1974: Multiload IUCD introduced
- 1974: Dalkon shield withdrawn as risk of mid-trimester abortions and PID
- 1974: 1st English report of Kawasaki disease
- 1974: carbamazepine approved as anticonvulsant in USA
- 1974: sodium nitroprusside approved in USA
- 1973: opioid drug receptor discovered in CNS
- 1973: Brazeau et al: somatostain isolated
- 1973: rotavirus disc. by electron microscopy
- 1973: Kakkar et al: clinical trials of low dose s/c heparin
- 1973: Multicentre Trial Group: use of penicillamine in rheumatoid arthritis
- 1972: 1st widely available pulse oximeter (weighed 17kg)
- 1972: 1st daisywheel printers for computers
- 1972: Charnley: satisfactory plastic replacement for hip joint produced
- 1972: Kapikian et al: Norwalk virus disc. by immune electron microscopy
- 1972: Copper T IUCD introduced
- 1972: Said: vasoactive intestinal peptide discovered
- 1972: Kawaguchi: amikacin discovered
- 1972: clindamycin derived from lincomycin
- 1972: spectinomycin studied
- 1972: minocycline introduced and became favored for Rx of acne
- 1972: 1st H2 antihistamines (used for peptic ulcers and reflux)
- 1972: praziquantel shown to have antihelminthic properties
- 1972: CT scanner (CAT scanner)
- 1972: Hill: ECMO 1st used for ARDS
- 1972: mebendazole for Rx of round worms
- 1971: growth hormone synthesized
- 1971: mebendazole introduced to Rx roundworms
- 1971: Royal Medico-Psychological Association renamed Royal College of Psychiatrists (Australia)
- 1970: nuclear powered cardiac pacemaker
- 1970: Swan/Ganz: 1st easy to use balloon catheter to measure pulmonary artery and left atrium
pressures
- 1970: thyrotropin releasing hormone identified chemically
- 1970: 1st gene synthesized

1960's:

- the decade of intensive care units, MICA ambulances, mainframe computers, hormonal and IUCD contraception, and elucidation of chromosomal defects
- 1969: rubella vaccine (introduced in Australia in 1970 for school girls)
- 1969: 1st microchip for computers
- 1969: 1st coronary artery bypass graft surgery
- 1969: Lubs: 1st desc. Fragile X syndrome
- 1969: food additives linked to cancer
- 1969: cephalaxin studied
- 1969: pyrantel introduced as anti-helminthic in humans
- 1968: Lemoine: fetal alcohol syndrome
- 1968: Meadow: possible teratogenicity of phenytoin
- 1968: oesophageal obturator airway device
- 1968: Inman: 1st reports of DVT associated with OCP
- 1968: Bshaskar: Histoacryl tissue adhesive (n-butyl cyanoacrylate) used in dental applications
- 1968: rifampicin discovered
- 1968: Bakhele: studied on bradykinin potentiating factors from snake venom
- 1967: multiple opiate receptors postulated
- 1967: Barnard: 1st heart transplants on humans
- 1967: DNA synthesized
- 1967: tobramycin studied
- 1967: Altounyan: sodium chromoglycate shown to inhibit autacoid (eg. histamine) release
- 1967: Fleckenstein: suggested that verapamil acts via calcium antagonism which he coined
- 1967: cryosurgery used for Parkinson's disease
- 1967: Kawasaki: 1st desc. of Kawasaki's disease
- 1966: Pantridge: 1st mobile intensive care unit ambulances (MICA) with defibrillators, pacing and anti-arythmic capabilities
- 1966: 1st hand held calculator
- 1966: male sex determination found to be on short arm Y chromosome
- 1966: valproic acid and doxycycline introduced
- 1966: Ash: histamine H1 receptors postulated
- 1965: 1st minicomputer
- 1965: Watson: methyl cyanoacrylate 1st used to repair tympanic membrane
- 1965: Van Itallie: cholestyramine, initially used for pruritis in cholestasis, was shown to lower lipids
- 1965: Rosenberg: cisplatinum discovered
- 1965: Saf-T coil IUCD introduced
- 1964: pancuronium synthesized
- 1964: Davies: amantadine discovered
- 1963: Carson: 1st desc of homocystinuria
- 1963: Carson: 1st desc of homocystinuria
- 1963: Stalder: 1st desc of trisomy 8
- 1963: Lejeune: 1st desc of cri du chat syndrome (5P syndrome)
- 1963: indomethacin introduced to Rx rheumatoid arthritis
- 1963: methotrexate is the 1st drug to cure choriocarcinoma
- 1963: Laurell: alpha 1 antitryptsin deficiency discovered
1961: introduction of cricoid pressure during anaesthesia
1961: calcitonin disc.
1961: Carr: 1st desc. of XXXX syndrome
1961: Jordan: increased risk of pulmonary embolism on OCP leads to dose reduction
1961: rubella virus successfully cultured
1961: ethambutol studied
1961: methacycline introduced
1961: leucotomies performed for insanity (hence the book One flew over the cuckoo's nest)
1960: 1st rapid, practical CO2 analyser developed for Mx of the polio epidemic which started in 1952
1960: chlorophyll synthesized
1960: optical microwave laser invented
1960: radio-reflector satellite launched leading to 1st weather satellite
1960: Edwards: 1st recognition of trisomy 18 as a specific entity
1960: Patau: trisomic aetiology discovered
1960: methicillin developed
1960: idoxuridine studied
1960: pituitary hormone discovered
1960: widespread use of the combined OCP - ethinyloestradiol 15mcg plus norethisterone 10mg

1950's:

- the rise of effective pharmaceuticals - discovery of phenothiazines, benzodiazepines, MAOIs, beta blockers, aldosterone, ADH, angiotensin, ACE, halothane, warfarin, OCP's, metronidazole, oxytocin, heart-lung machine in surgery, Sabin polio vaccine, double helix, smoking linked to cancer
- 1959: sex determination due to Y chromosome
- 1959: Link: clinical safety of warfarin shown in trials
- 1959: Cosar, Julou: metronidazole introduced to Rx trichomonas, etc
- 1958: Noble: vinca extracts shown to cause bone marrow depression in rats
- 1958: Powell: 1st beta blocker discovered - dichloroisoproterenol (DCI)
- 1958: Janssen: antipsychotic properties of haloperidol
- 1958: Kuhn: antidepressant effects of imipramine
- 1957: giberellin isolated
- 1957: accidental contamination of progestagens with oestrogens in OCP trials showed synergism - 1st combined OCP
- 1957: Rock et al: showed that ovulation could be abolished by progestational agents
- 1957: Lindenmann: disc. interferon
- 1957: Bumpus: angiotensin II synthesized
- 1957: Umezawa: kanamycin discovered
- 1957: Brodie: serotonin discovered in brain tissue
- 1957: Sternbach: chlorodiazepoxide discovered - the 1st benzodiazepine - marketed in 1961
1957: **MAOIs** introduced for Rx of depression
1957: Kirklin: use of **cardiopulmonary bypass** in cardiac surgery
1956: anaesthesia revolutionised with introduction of **halothane**
1956: neutrino
1956: Prader et al: 1st official report of **Prader-Willi syndrome**
1956: large scale trials of birth control pills
1956: Harris: 1st case of pyridoxine-responsive anaemia described
1956: Sabin: **Sabin polio vaccine**
1956: Bertler: reserpine found to deplete tissues of noradrenaline
1956: Freedman: chloquine used to Rx **rheumatoid arthritis**
1956: Baker: chelating properties of penicillamine discovered leading to use in Rx of Wilson's disease
1956: Vandeputte: amphotericin B discovered
1956: McCormick: vancomycin discovered
1956: 1st successful **kidney transplant**
1955: Sarnoff: concepts of ventricular function curves established
1955: UHF waves produced
1955: Low: invented the Papain test
1955: structure of insulin revealed
1955: **vitamin B12** used to Rx pernicious anaemia
1955: Altschul: nicotinic acid discovered to lower blood lipids
1955: Peart: recognition of 2 angiotensins and angiotensinogen converting enzyme (ACE)
1955: Hodgkin: crystal structure of B12 determined by Xray diffraction
1955: bretylium introduced as antihypertensive
1954: Simpson et al: coined **aldosterone** for the substance from urine in patients with oedema
1954: Duvigneaud: structure and synthesis of oxytocin
1954: Salk: Salk polio vaccine
1954: Dutcher: **nystatin** discovered
1954: Berger: 1st pharmacologic report of meprobamate
1953: Duvigneaud: structure and synthesis of ADH
1953: Gibbon: use of heart-lung machine in cardiac surgery
1953: Rahn: 1st use of a pulmonary artery balloon pump (in animals)
1953: oil of Ulan marketed for skin care
1953: Watson: **double helix structure of DNA** established
1953: De Shambu Nath: showed toxin from Vibrio cholera is an exotoxin rather than an endotoxin as thought
1953: smoking linked to lung cancer
1953: penicillamine 1st isolated (from urine of patient with liver disease Rx with penicillin)
1953: Yonkman: coined term **tranquilliser** to characterise the psychic effect of reserpine
1953: new classes of **progesterones synthesised with oral activity**
1952: hesperidon sulfate used as a oral contraceptive
1952: McGuire: **erythromycin** discovered
1952: Deniker: **chlorpromazine introduced - the 1st of the phenothiazine major tranquillisers**
1952: tetracycline produced from chlortetraacycline
1952: Vorhees: 1st use of vascular prosthetic grafts
1952: Zeller: iproniazid which had been introduced for Rx of TB was shown to elevate mood and was in fact a MAOI
1952: Smith: vitamin B12 isolated and crystallized
1951: nalorphine used as antidote to morphine poisoning
1951: Allen et al: disc. the Kidd blood group system
1951: isoniazid and serotonin synthesized
1951: Mark: procainamide discovered
1951: Asher: classical description of Munchausen's disease
1951: Beyer: probenecid discovered after search for something to decrease excretion of penicillin
1951: De Bakey: 1st use of vascular homografts
1950: Mollison: disc. the Duffy blood group system
1950: neomycin and oxytetracycline developed
1950: reports of serious blood dyscrasias due to chloramphenicol
1950: Harris: phenytoin reported to be effective in VT
1950: antihistamines in common use

1940's:

discovery of penicillin as antibiotic, chemotherapy, cortisone, Pap smear, lignocaine, suxamethonium, methadone, chloroquine, dacron, adrenal steroids, and the electron microscope
1949: curariform action of succinylcholine discovered
1949: gallamine synthesized
1949: Ardis: cyanoacrylates 1st synthesized
1949: Cade: 1st report of lithium for use in Rx of mania
1949: Stocken: dimercapral (British AntiLewisite Agent or BAL) developed as antidote to Lewisite used in WWII
1949: neomycin discovered
1949: Gross: 1st surgery of the aorta
1949: Hench: dramatic effects of cortisone and ACTH in Rx of rheumatoid arthritis
1949: Hench: cortisone (compound E) discovered and uses adrenal steroids to Rx rheumatoid arthritis
1949: phenylbutazone (BTZ) introduced to Rx rheumatoid arthritis
1949: popularity of paracetamol grew as an analgesic when it was recognised to be a metabolite of phenacetin
1949: Pauling: molecular basis of sickle cell anaemia
1948: lidocaine / lignocaine and chlortetracycline introduced
1948: Rapport: serotonin isolated (formerly vasotonin and enteramine)
1948: Chaikoff: acute inhibition of synthesis of iodotyrosine and iodothyronine by iodine
1948: methotrexate is the 1st drug to produce striking remissions in leukaemia
c1948: Hafliger: imipramine (tricyclic antidepressant) synthesized
c1948: polymixins, aureomycin and chloromycetin developed
1946: 1st programmable computer Eniac
1946: Coombs: disc. the Kell antibody using his Coomb's test
1946: Euler: definitive evidence that noradrenaline was the sympathetic neurotransmitter
1945: Coombs: invented the indirect antiglobulin test
1945: methadone synthesized
1945: carbon-13
1945: xerography (photocopier)
1945: Chlorine: nicotinamide found to be active against TB resulting in studies on isoniazid
1945: Astwood: suggests phenylthiourea inhibits hormone production resulting in compensatory goitre
1944: Ayre: developed the wooden spatula for use with Pap smears
1944: Ikawa et al(Wisconsin Alumni Research Foundation): 1st prepares racemic Warfarin - an acronym
1943: Sayers: ACTH isolated
1943: Shoppee: 28 steroids from adrenal cortex now isolated and characterised
1943: chloroquine introduced to replace quinacrine in Rx of malaria; dapsone 1st trialled in Rx of malaria
1943: bacitracin and streptomycin discovered
1943: Hofmann: LSD ingested experimentally to experience its psychic effects
1943: quinine synthesized
1942: curare 1st used as a muscle relaxant in anaesthesia
1942: Clisby: phenylthiourea shown to produce goitre in rats
1942: Klinefelter: Klinefelter's syndrome
1942: magnetic recording tape invented
1942: Goodman: clinical studies on nitrogen mustards initiates modern cancer chemotherapy
1942: clinical psychology emerged as a profession during WWII
1941: 1st oximeters and capnometers
1941: dacron, plutonium
1941: Bywaters: crush injuries can cause acute renal damage (rhabdomyolysis)
1941: Mackenzies: sulphaguanidine shown to cause goitre in rats
1941: Ingram: 1st molecular disease described - chemical difference between normal Hb and sickle cell Hb
1941: Papanicolaou: demonstrated malignated change could be detected in a cervical smear - the Pap smear
1941: Mitchell et al: folic acid coined
1941: Levine: erythroblastosis fetalis due to Rh incompatibility between mother and fetus
1941: Gregg: disc. that maternal rubella causes fetal blindness, etc
1940: research on curare accelerates
1940: emergence of theory of 2 types of adrenal steroids - mineralocorticosteroids and glucocorticosteroids
1940: Braun-Menendez: reported renin was enzyme that produced angiotensin
1940: Landsteiner: Rh antigen discovered
1940: electron microscope invented
1940: Florey: penicillin developed as an antibiotic
1940: the 1st H1 antihistamines

1930's:

discovery of the main vitamins, sulphonamides, thiopentone, heparin, polyethylene, nylon, prolactin, improved viral culture techniques, and re-learnt iron is useful for anaemia
1939: meperidine introduced as analgesic
1939: DDT insecticide
1939: USA introduces flour supplemented with nicotinic acid
1939: FM radio invented
1939: griseofulvin discovered
1939: Woolley: chick antidermatitis factor found to be pantothenic acid
1939: Link: haemorrhagic agent in sweet clover identified as dicoumarol
1939: **polyethylene**
1939: Faber et al: 19th century lessons regarding use of iron for anaemia re-learned and bringing it back into use again
1939: Gross: cardiac surgery to repair congenital defects
1938: Cairns: associated Meniere's disease with dilated membranous labyrinth
1938: Turner: 1st expanded desc. of Turner's syndrome
1938: Butt: combination of vitamin K and bile salts found to be effective in Rx of bleeding in jaundice
1938: clinical trials of **heparin** after its improved purification
1938: Merritt: **anticonvulsant activity of phenytoin** discovered without the use of sedation
1937: 1st artificial heart invented
1937: Plotner: quantitative measurements of iron in plasma and discussed its transport in blood
1937: **nylon**
1937: found that nicotinamide could treat black tongue in dogs (eq. of pellagra)
1937: Elvehjem: vitamin A and vitamin K concentrates manufactured
1937: electroconvulsive therapy (ECT) introduced in psychiatry
1936: Evans: vitamin E isolated
1936: Gyorgy: determined the factor which caused rat dermatitis and called it vitamin B6
1936: Williams: structure of vitamin B1 determined
1935: Castle: defined intrinsic factor and extrinsic factor in pernicious anaemia
1935: **thiopentone** / thiopental used as iv anaesthetic; structure of d-tubocurarine established;
1935: Warburg: nicotinamide obtained from a coenzyme in horse RBCs
1934: vitamin B2 discovered
1934: androsterone isolated
1934: Walker: physostigmine introduced and used to Rx myasthenia gravis
1934: pentylenetrazol used to induce convulsions in psychiatric Rx
1933: neutron, positron
1933: Fox: accidentally discovers some can taste phenylthiocarbamide while others cannot leading to a method of testing genetics and it even became robust enough to be used as a paternity test. Later, a single receptor gene was found to control the ability to taste both phenylthiocarbamide and propylthiouracil, or, PROP. Tasters vs non-tasters.
1933: Britton: hypoglycaemia could be corrected with adrenocortical extracts
1933: cyclotron invented
1933: Karrer et al: structural formula of retinol established; **vitamin A** isolated;
• 1931: Bose: **Rauwolfia alkaloids** used in India for hyperetension and insanity
• 1931: Gaddum: substance P 1st detected
• 1931: Goodpasture: **viral culture technique** devised
• 1930: Hartman: prepared adrenal gland extracts with reasonable degree of activity
• 1930: Lehrs: disc. that there were secretors and non-secretors of blood group antigens in saliva
• 1930: Goldberger: showed certain diets caused the equivalent of pellagra in dogs (black tongue)

1920's:

• 1929: anaesthetic properties of **cyclopropane** accidentally discovered leading to widespead usage
• 1929: Chesney: studies commence on cause of goitre; shows rabbits fed on cabbage develop goitre
• 1929: Allen: disc. the hormonal function of the corpus luteum
• 1929: Dam: chickens fed inadequate diet developed bleeding disorder; vitamin K discovered
• 1929: oestrone isolated
• 1929: electroencephalogram (EEG) invented
• 1929: Moore: purified carotene found to be a potent source of vitamin A
• 1929: **sodium nitroprusside** shown to lower BP
• 1929: quartz clock invented
• 1929: yellow fever vaccine
• 1929: Forestier: **gold** found to be effective in Rx of rheumatoid arthritis stimulates interest in gold Rx
• 1929: 1st intravenous method to visualise urologic tract on X-rays (IVP)
• 1928: Zondek: reports excretion of large amounts of oestrogen in urine of pregnant women
• 1928: disc. of prolactin
• 1928: **myelogram** invented
• 1928: isolated a reducing substance in cabbage and adrenal glands (vitamin C)
• 1928: Babes: 1st cervical sampler for diagnosis of cervical cancer
• 1928: Fleming: penicillin accidentally discovered and its antiseptic activity noted
• 1928: Mackay: 1st soundly based investigation of iron deficiency anaemia in infants
• 1928: Rosenthal: hydroxyurea found to have bone marrow effects in rabbits
• 1928: Minot: effectiveness of eating liver to Rx pernicious anaemia
• 1927: Cori: adrenal gland insufficiency caused depletion of carbohydrate stores
• 1927: Levine: disc. M,N, and P blood groups
• 1927: iron lung invented for polio victims
• 1927: **histamine** shown to be an endogenous substance in tissues hence histamine
• 1927: Moniz: X-rays used to visualise blood vessels (angiography)
• 1926: dermatitis in rats produced by diet deficient in vitamin B2 (see Gyorgy 1936)
• 1926: successful Rx of pernicious anaemia with diet of raw liver
• 1926: Loewe: disc. female sex hormone in urine of women and the concentration varied with their menstrual cycle
• 1926: Foster: disc. that hypophysectomy caused adrenal gland atrophy
• 1926: Jansen: vitamin B1 isolated in crystalline form
• 1926: Navratil: proved that the vagus nerve neurotransmitter is acetylcholine
• 1926: Baker Institute founded
• 1925: Frank et al: detected an active sex principle in the blood of sows in oestrus
1925: Loewe: 1st report of a female sex hormone in the blood of animals
• c1925: Mackay: 1st woman accepted into the Royal College of Physicians (Australia)
• 1924: **insecticides** invented
• 1924: Berman: 1st obtained active parathyroid gland extracts
• 1924: Schofield: 1st report of haemorrhagic disorder in cattle from eating spoile sweet clover (precursor to disc. of coumarin/warfarin)
• 1924: ephedrine introduced to Western medicine
• 1923: **acid-base theory**
• 1923: Murlin et al: disc. of **glucagon**
• 1923: Allen: quantitative bioassay of ovarian extracts
• 1923: **ultracentrifuge** invented
• 1923: Dochez: scarlet fever linked to Streptococcus
• 1923: Cutler: cardiac valvotomy
• 1922: Bishop: vitamin E discovered
• 1922: water-soluble mucopolysaccharide discovered and named **heparin**
• 1922: Laterjet: vagotomy proposed for relief of abdominal pain in tabetic crises
• c1922: WBCs discovered
• 1922: Rossle: assoc. between small stature and defective ovarian development 1st noted
• 1921: theory of chromosomes
• 1921: Fahraeus: demonstrated suspension ability of blood (ie. ESR)
• 1921: **BCG vaccine**
• 1921: Banting: **insulin** isolated
• 1921: Loewi: 1st proof of chemical mediation of nerve impulses (neurotransmitters)
• 1921: X-rays used to Rx cancer
• 1920: Cannon: 1st use of barium in radiology diagnostic studies
• 1920: Murray: 1st to successfully Rx myxoedema with thyroid extract

**1910's:**

• 1919: mass spectrograph invented
• 1919: new neurosurgical techniques
• 1919: Krumbhaar: sulfur mustard causes bone marrow and GIT problems
• 1919: Mellanby: showed cod liver oil or sunlight could prevent or cure rickets
• 1919: Hurler: desc. of Hurler syndrome
• 1918: Frey: quinidine found to be most effective agent for AF
• 1917: Hunter: 1st desc of Hunter syndrome
• 1916: **sympathectomy** used to Rx angina
• 1916: Bateman: rats fed egg white develop “egg white injury” (later disc. to be antagonist to biotin)
• 1916: blood for blood transfusions refrigerated during transport
• 1916: McLean (a med student): a phospholipid anticoagulant discovered
• 1915: Walter and Eliza Hall founded in Melbourne and directed for the 1st 21 years by Sir Macfarlane Burnet
• 1915: Starling: **Starling's law of cardiac contractility** and cardiac fibre length
• 1915: Dominici: 1st use of x-rays for therapeutic purposes
• 1915: Twort: disc. **bacteriophage**
• 1915: Keilland: Keilland obstetric forcep invented
• 1915: dysentery bacillus isolated
• 1914: Wenckebach: reports of quinine alkaloids on certain arrhythmias
1914: Dale: proposed existence of an acetylcholinesterase and coined term *parasympathomimetic* to characterise effects of acetylcholine

1914: Funk: postulated pellagra was due to a dietary deficiency

1914: successful heart surgery on a dog

1914: *thyroxine* purified

1913: composition of chlorophyll ascertained

1913: *isotope* coined

1913: Bohr: atomic theory

1913: Geiger counter invented

1913: Schick: invented *Schick test for diphtheria*

1913: vitamin A isolated

1913: Dale: 1st description of the *nicotine paralyzing* action of tetraethylammonium (TEA) on ganglia

1912: *vitamine* coined

1912: Herrick: studies helped clarify the syndrome of coronary occlusion

1912: cellophane; *Nivea* skin care cream;

1912: Vedder: emetine used as a systemic amoebicide

1912: Wright: disc. opsonins, and developed new killed typhoid vaccine

1912: acriflavine manufactured and *phenobarbitol (barbiturate)* introduced

1911: Noon: use of *desensitisation for allergic disorders*

1911: Taveau: methacholine 1st studied

1911: Funk: highly concentrated form of active anti-beriberi factor in rice husks led to coin the term *vitamines*

1910: Moritz: 1st clinical measurement of CVP

1910: Rutherford: atomic theory of matter

1910: Von Dungen: proved that *blood groups were inherited*

1910: Barger: pharmacologic studies of a large number of *sympathomimetic amines*

1910: Moss: discovered blood group antigens in saliva but thought they were auto-antibodies

1910: Ehrlich: *Salvarsan* and *Neosalvarsan* to Rx syphilis

1910: Laidlaw: intensive studies on histamine

### 1900's

• 1909: MacCallum: 1st to note that parathyroidectomy affected calcium concentration

• 1909: Nicolle: showed that *typhus was transmitted by body louse*

• 1908: *iv local anaesthesia* method developed

• 1908: *helium* liquefied

• 1908: ammonia, bakelite synthesized

• 1908: Epstein: suggested blood groups were inherited

• 1908: *phenytoin* synthesized

• 1907: disc. that rabbits can get scurvy leads to *use of animals in medical research*

• 1907: *tissue culture technique* invented

• 1907: Dixon: postulated that vagus nerve liberates a muscarine-like substance as transmitter

• 1907: conditioned reflexes

• 1906: Rickett: Rocky Mtn Spotted Fever transmitted by wood tick

• 1906: Wasserman: invented *Wasserman complement fixation test for syphilis*

• 1906: Bordet: disc. whooping cough bacillus *Bordetella pertussis*

• 1906: Dale: discovered *ergot alkaoids and 1st adrenergic blockers*

• 1905: tracheal intubation via laryngoscopy; *procaine Novocaine* synthesized;

• 1905: *allergy* coined
1905: disc. typhoid carrier status
1905: Elliott: postulated that sympathetic nerve impulses releases adrenaline-like substances
1905: enzyme catalysis discovered
1904: silicones disc
1904: UV lamp invented
1903: Einthoven: ECG invented
1903: ultramicroscope invented
1903: Fraenkel: showed destruction of corpus luteum in pregnant rabbits caused abortion
1903: barbitol (barbiturate) introduced
1902: veronal synthesized and used as a safer iv anaesthetic; routine BP measurements during anaesthesia
1902: secretin discovered
1902: Richet: studied and coined term anaphylaxis
1902: Vamossey: laxative effect of phenolphthalein discovered
1901: adrenaline isolated
1901: motorcycle invented
1901: Ehlers: clarification of Ehlers-Danlos syndrome
1901: Landsteiner: disc. of A,B, O blood groups
1901: Shiga: killed dysentery vaccine
1900: radon disc.
1900: quantum theory of matter
1900: Halban: ovarian transplants in animals assured sexual development and function
1900: Knauer: ovarian transplants prevented symptoms of gonadectomy ⇒ ovarian control of gynaecologic function
1900: Opie: demonstrated hyaline degeneration of islands of Langerhans
1900: Landsteiner: observed agglutination of RBCs by human serum
1900: Sudeck: desc. Sudeck's atrophy
1900: Carrell: 1st arterial anastomosis surgery

19th century

1890's:

- discovery of sympathomimetics, plague and dysentery organisms, tuberculin, immunisation, and the marketing of aspirin
- 1899: magnetic recording invented
- 1899: Dresser: aspirin 1st marketed - named derived from the plant spiraea
- 1899: Abel: pressor agent in suprarenal extract named epinephrine (adrenaline)
- 1898: krypton, neon, polonium, radium, xenon, alpha and beta rays disc
- 1898: Langley: similarity of effects between adrenal gland extracts and sympathetic nerve stimulation
- 1898: Loeffler: disc. virus in foot and mouth disease
- 1898: cocaine 1st drug to be injected into spinal canal to produce spinal anaesthesia
- 1898: Tiegerstedt: discovery of pressor agent in kidney extract coined renin
- 1897: Beard: postulated corpus luteum serves a necessary function in pregnancy
- 1897: Bang: Brucella abortus linked with infectious abortion of cattle
- 1897: Kruse: dysentery bacillus disc.
- 1897: Lustig: killed plague vaccine
- 1897: Eijkman: showed rice husks added to diet of polished rice prevented and cured beri beri
• 1896: Dock: case of coronary occlusion discovered during life and confirmed at PM
• 1896: **cathode rays** and **radioactivity** disc.
• 1896: **electron** and helium discovered
• 1896: Marfan: desc **Marfan's syndrome**
• 1896: Pfeiffer: killed typhoid vaccine
• 1896: Mikulicz: **surgical masks in surgery** to reduce infection
• 1896: Widal: invented Widal typhoid agglutination test
• 1895: Rontgen: 1st use of x-rays for diagnostic purposes
• 1895: Magnus-Levy: disc. effect of thyroid on metabolic rate
• 1895: Schafer: pressor effects of suprarenal extracts demonstrated
• 1895: radio telegraphy and safety razor invented
• c1894: chloroform noted to have 5x mortality compared with ether for anaesthesia
• 1894: Yeo: asthma Rx: pneumatic chamber (inpiration of compressed air), s/c morphine, chloroform, amyl nitrite, chloral hydrate, tobacco, nitre paper, stramonium, caffeine, emetics, iodide, arsenic, although inhaled oxygen not found useful for severe attack!
• 1894: Yeo: pneumonia Rx: leeches, laudanum, Dover's powder, s/c morphine, quinine, inhaled turpentine, digitalis, phenacetin, blood letting, s/c strychnine, oxygen
• 1894: Yersin: disc. plague bacillus *Yersinia pestis*
• 1893: argon disc.
• 1893: Von-Mering: paracetamol (acetaminophen) 1st used in medicine, but not widely used until 1949!
• 1893: The John Hopkins University School of Medicine: new medical school established emphasising more bedside training of students
• 1892: Ivanobski: disc. viral cause of tobacco mosaic disease
• 1892: Nuttall: disc. Clostridium welchii *Bacillus aerogenes capsularis*
• 1891: viscose
• 1891: Murray: 1st to Rx a case of hypothyroidism by injecting thyroid gland extract
• 1891: Gley: studied parathyroids and allowed functional differentiation from the thyroids
• 1891: wireless telegraphy invented
• 1891: Bergman: **aseptic technique in surgery**
• 1890: Bunge et al: dose of iron reduced leading to ineffectiveness and it being discredited until the 1930's!
• 1890: Koch: disc. tuberculin
• 1890: Von Behring: 1st antitoxins developed, concept of passive immunisation
• 1890: Fraser: stropanthus introduced as medicinal as digitalis-like actions discovered
• 1890: Holzinger: iminodibenzyl synthesized (the precursor to later tricyclic antidepressants)
• 1890: Koch: gold found to inhibit TB organism and thus led to trials in Rx of arthritis and SLE
• c1890: Bilroth: 1st successful extensive operations of pharynx, larynx and stomach
• c1890: Halsted: cocaine injected into nerve trunks to block sensation (regional anaesthesia)

### 1880's:

• discovery of neuron theory, diphtheria and tetanus antitoxins, rabies vaccine, malaria, TB and pneumococcus organisms, phenacetin, pancreas role in diabetes and steam sterilisation
• 1889: Brown-Sequard: believed that testicular extracts prevent aging, hence self-administered
• 1889: use of **rubber gloves in surgery**
• 1889: Minkowski: showed that extirpation of pancreas resulted in fatal diabetes mellitus
• 1889: Dickinson: **nicotine's actions shown to be at gangliaons**
• 1888: Roux: studied bactericidal properties of blood, and discovered diphtheria toxin
1887: Bruce: linked Bacillus melitensis to Malta Fever (brucellosis)
1887: phenacetin introduced as antipyretic as less toxic than acetanilid
1887: endemic night blindness reported in Roman Catholics fasting for lent (and corneal sloughing in breastfed babies)
c1887: vesicant properties of sulfur mustards 1st described
1886: Fraenkel: desc. pneumococcus
c1886: successful use of potassium bromide to prevent convulsions
1886: Fitz: nature of appendicitis typhilitis elucidated
1886: Cahn: acetanilid antifebrin introduced as antipyretic but resulted in toxicity
1885: orotracheal intubation using an introducer
1885: localisation of visual cortical centre to occipital lobes
1885: aminopyrine, germanium disc
1885: Pasteur: 1st successful rabies vaccine
c1885: Fournier: showed relationship of syphilis to tabes dorsalis and paresis
1885: steam sterilisation invented
c1885: Hoffman: acetylsalicylic acid (aspirin) 1st prepared
c1885: inositol identified in urine of diabetics
1884: topical application of cocaine for the eye, and used in dentistry
1884: Nicolaier: disc. tetanus bacillus
1883: Bizzozeri: disc. platelets
1883: preventive innoculation for anthrax developed
1883: Koch: disc. diphtheria bacillus
1883: phagocyte theory developed
1882: Von Recklinghausen: 1st desc. of neurofibromatosis
1882: Abraham Jacobi: “father of paediatrics” founded the Pediatric section of AMA
1882: Koch: disc. TB bacillus and cultured it
1881: chicken cholera vaccine developed
1881: malaria parasite discovered
1881: Freud: psychoanalysis theory
1880: 1st successful anaesthetic use of chloroform via oral tracheal tube
1880: Bourneville: 1st recognition of tuberous sclerosis
1880: Sertoli: disc. Sertoli cells
1880: Eberth: disc. typhoid bacillus
1880: Takaki: 1st indication of dietary cause to beri beri in sailors (fish, meat added to polished rice meals to prevent it)
1880: electrical stimulation of vagal nerve in the neck used to Rx asthma
c1880: evolved the filtration theory of urine formation
c1880: uricosuric effects of salicylates recognised and thus used to Rx gout
c1880: Von Behring: invented diphtheria and tetanus antitoxins
c1880: O’Dwyer: instruments to intubate to relieve suffering of diphtheria
c1880: Lieberkulin: disc. intestinal glands
c1880: Golgi: disc. Golgi cells, and 1st to use chrome silver nitrate stain
c1880: Waldeyer: disc. tonsillar ring; coined chromosomes; constructed neuron theory

1870’s:

1879: Bollinger: disc. actinomycosis as cause of fungus
1879: Neisser: disc. gonococcus
• 1879: Murrell: used sublingual nitroglycerin (GTN) to relieve angina and prevent exertional angina
• 1878: Hammer: disc. thrombotic occlusion of a coronary artery
• 1878: saccharin and scandium disc.
• 1878: Ranvier: disc. nodes of Ranvier in peripheral nerves
• 1878: Ord: coined myxoedema believing thickened tissues due to excess mucus
• 1878: Kodak box camera, pneumatic car tyre and microphone invented
• 1878: phenacetin manufactured
• c1878: iodoform used as an antiseptic in surgery
• 1878: Sims: gall bladder opened in surgery
• 1877: Lichtheim: noted that CVP changed with blood volume
• 1877: oxygen liquefied
• 1877: Koch: Koch's stain for microscopy
• 1877: Eck: 1st surgery on AV fistulae
• 1876: Vaseline: petroleum jelly as skin care product
• 1875: gallium disc
• 1875: telephone invented
• 1875: Landois: noted agglutination of blood when blood from different animal species mixed
• 1875: Hansen: disc. leprosy bacillus
• 1875: Coutinhou: pilocarpine alkaloid isolated (natives had chewed leaf to stimulate salivation)
• 1875: sodium salicylate 1st used as antipyretic to Rx rheumatic fever and other fevers
• 1874: 1st use of iv anaesthetics
• 1874: typewriter invented
• 1874: Pasteur: disc. Streptococci and Staphylococci
• 1874: Kussmaul: Kussmaul breathing; “air hunger” in diabetes;
• 1874: Gull: 1st assoc. thyroid atrophy with “hypothyroid symptoms” - “Gull's disease”
• 1873: Gull: good desc. of “cretinoid condition” in adult women
• 1873: Wagner: New York Laryngoscopic Society and Metropolitan Throat Hospital founded
• 1872: duplex telegraph and colour photographs invented
• 1872: Biermer: coined term progressive pernicious anaemia
• 1872: Koch: cultured anthrax bacillus and discovered its life cycle
• 1872: Heidenhain: demonstrated atropine blocks salivary secretion by choline
• 1872: oesophageal resection performed
• 1870: celluloid
• 1870: periodic law of elements
• 1870: malaria linked to low lying marshes, night, summer, tropics

1860's:

• 1869: Wilson: 1st descr. lichen planus
• 1869: Schmiedeberg: muscarine alkaloid 1st isolated and pharmacologic studies commenced
• 1869: Stein: hydroxyurea 1st synthesized
• 1868: Addison: 1st desc. of xanthoma diabeticorum
• 1868: Villemin: demonstrated inhaled TB sputum causes pulm. TB, but ingested, it causes intestinal TB
• 1867: 1st use of amyl nitrite for angina
• 1867: dynamite, bicycle invented
• 1867: Lister: encouraged use of phenol as antiseptic in surgery
• 1867: Baeyer: acetylcholine 1st synthesized
• 1867: Bezold: demonstrated that atropine blocks cardiac effects of vagal stimulation
• 1866: Langdon-Down: 1st desc. of Mongolism (trisomy 21) *Down's syndrome*
• c1865: Pfluger: founded experimental embryology
• 1865: Fleming: disc, achromatic and chromatic parts of the nucleus
• 1865: Davaine: anthrax bacillus discovered
• 1865: Pasteur: disc Mycetum acidi converted wine to vinegar, can prevent by heating to kill organisms; disposed of theory of spontaneous generation
• 1865: *ophthalmia Braziliana* 1st described in malnourished slaves
• 1864: benzene ring theory
• 1864: Von Graefe: disc. lid lag as a sign of thyrotoxicosis
• 1864: International Red Cross established to aid wounded soldiers
• 1863: nitrous oxide re-introduced as an anaesthetic
• 1861: photosynthesis discovered
• 1861: cesium, rubidium and thallium disc
• 1861: Hutchinson: teeth defects diagnostic of congenital syphilis; used iodides and mercurials to Rx syphilis
• 1860: Flint: 1st desc. of severe gastric atrophy and possible link with megaloblastic anaemia
• 1860: Broca: motor cortex disc.
• 1860: Kolbe: synthetic manufacture of salicylic acid from phenol
• c1860: use of electrical impulses for neurologic conditions
• c1860: use of ice or ether to anaesthetise the skin
• c1860: s/c use of morphine as analgesic
• c1860: use of calcium sulphide for boils
• c1860: Leiter: 1st practical cystoscope ⇒ impetus to develop urology specialty

1850's:

• 1859: Lind University: 1st medical school to raise entrance requirements and lengthen the course
• 1858: Wells: operative procedures developed for surgery of ovaries, Fallopian tubes and uterus
• 1858: spectrum analysis of substances invented
• 1857: Pasteur: disc. fermentation is by living organisms; disc. lactobacilli can grow in CO2 only hence *aerobes, anaerobes*
• 1857: Brunton: inhaled amyl nitrate used to relieve angina
• 1856: cocaine purified
• 1856: observed sperm entering ovum
• 1856: Brown-Sequard: concluded adrenals are essential to life
• 1855: Addison: clinical syndrome from destruction of adrenal glands
• 1856: aniline dye made
• 1856: Neanderthal man discovered
• c1855: Brunton: phlebotomy found to help relieve severe anginal pain
• 1854: laryngoscope invented
• 1854: electric light globe invented
• 1854: rayon and tungsten steel invented
• 1854: sulphur mustard synthesised
• 1853: quinidine 1st prepared
• c1853: bromide is 1st agent introduced specifically as a sedative/hypnotic
• 1852: plaster bandages invented
• 1852: hypodermic syringe invented for subcutaneous injections
• 1851: Corti: disc. structure of the retina, Corti's organ of the internal ear
• 1851: ophthalmoscope invented ⇒ impetus to develop ophthalmology specialty
• 1850: chloroform preferred over ether as anaesthetic until 1920's.
• 1850: kinetic theory of gases
• 1850: Curling: 1st to link myxoedema with absent thyroid glands
• 1850: gas burner invented
• 1850: Davaine: 1st studies on the pathogenic nature of bacteria - anthrax
• 1850: Amici: invented oil immersion microscope objective
• 1850: speed of nerve impulse estimated
• c1850: glycogenic function of liver discovered
• c1850: lithium used to Rx gout as lithium urate found to be soluble
• c1850: new technology cigarettes produced milder smoke and enabled greater inhalation
• c1850: beri beri becomes widespread in east Asia due to rice mills removing husks
• c1850: Pasteur: rabies vaccine
• c1850: Henle: disc. endothelium, vascular smooth muscle, renal tubules, structure and development of teh larynx
• c1850: Sims: invented his *Sims speculum* and founded the 1st hospital dedicated to women - *Women's Hospital of State of New York*

1840's:

• 1849: Bertler et al: disc. testis is a gland of internal secretion
• 1848: papaverine isolated
• 1848: Van-Heyningen: quinidine 1st described
• 1848: Basedow: recommended iron, calomel, iodine, aloes, and rhubarb to Rx thyrotoxicosis
• 1848: safety match invented
• 1847: evaporated milk and meat extract invented
• 1847: chloroform used as an anaesthetic
• 1847: Hyrtl: German anatomy text
• 1847: Virchow: associated emboli with endocarditis
• 1847: Semmelweis: associated child bed fever with puerperal infection
• 1847: Smith: desc. Smith fracture distal radius
• 1847: Hering: sublingual dosage of nitroglycerin (GTN)
• 1847: American Medical Association (AMA) founded to unite the profession and set standards
• 1846: term *anaesthesia* coined; 1st successful public demonstration of surgery without pain (using ether)
• 1846: Sobrero: nitroglycerine manufactured and found to cause headache when placed on tongue
• 1846: sewing machine invented
• 1846: protoplasm discovered
• 1845: acetic acid synthesized
• 1845: Moreau: proposed that hashish intoxication be used as a psychosis model for studying the insane
• 1843: term *hypnotism* coined
• 1843: Orfila: 1st pharmacologic studies of nicotine
• 1842: surgical cases using sulfuric ether as anaesthetic
• 1841: Bouillard: coined terms *endocardium* and *endocarditis*
• 1841: Hitch: 1st college of psychiatrists - *Royal College of Psychiatrists*
• 1841: Politzer: head mirror invented which aided visualisation of the ear canal ⇒ impetus to develop ENT specialty
• 1840: nitrous oxide's analgesic properties and suggested use for surgery
1840: Basedow: desc. exophthalmic goitres
1840: tincture Hamamelis virginia topically for bleeding haemorrhoids
1840: Purkinje: produced artificial nystagmus and gave a thesis on vision
1840: Purkinje: 1st to use the microtome, and disc. Purkinje cells of cerebellum and Purkinje fibres in the heart
1840: Panizza: studied lymphatics, 9th cranial nerve
1840: Charles Dickens: possibly the 1st desc. of Prader-Willi syndrome
1840: Dujardin: classified bacteria as bacterium, vibrio and spirillum

1830's:

- 1839: Hope: associated aortic incompetence with diastolic murmur in aortic area
- 1839: electric clock invented
- 1839: tincture of iodine 1st used as an antiseptic in surgery
- 1839: Baltimore College of Dental Surgery: 1st dental school founded
- 1838: Remak: disc. non-medullated nerve fibres
- 1838: Schwann: firmly established cell theory
- 1838: Barton: desc. Barton fracture of distal radius
- 1838: Ricord: showed gonococcal pus did not cause syphilis resolving the confusion resulting from double inoculation of the two conditions
- 1836: pepsin discovered
- 1836: Valentin: disc. of cell nucleolus
- 1835: Graves: also described goitre with thyrotoxicosis (after 1st link by Parry in 1825)
- 1835: Pacini: disc. of sensory corpuscles
- 1834: phenol disc
- 1832: codeine isolated
- 1832: Brown: disc. of cell nucleus
- 1832: Corrigan: associated aortic incompetence with characteristic Corrigan's pulse
- 1832: Blaud: recognised that Rx failure of chlorosis anaemia with iron was due to inadequate iron doses
- 1832: Warburton: legalised the sale of bodies for anatomic dissection to end the ressurectionists
- 1831: chloroform discovered;
- 1831: Mein: purified atropine isolated
- 1830: paraffin disc.
- 1830: quinine used to Rx malaria
- c1830: Muller: coined terms bacillus and spirillum and created a class infusoria consisting of membranacea and crassiuscula

1820's:

- 1829: electromagnetic motor invented
- 1829: Braille writing developed
- 1829: Leroux: salicin isolated from willow bark (1st step in development of aspirin)
- 1828: urea synthesized
- 1828: ultraviolet light disc.
- 1828: era of the railroad commences
- 1828: Posselt: nicotine isolated from tobacco leaves
- 1827: Hodgkin: associated aortic incompetence with dilated ventricles, hepatised lung, ascites
and pericardial effusion
• 1827: Von Baer: mammalian ovum
• 1827: Bright: *Bright's disease* described (nephritis)
• 1827: Amici: improved achromatic microscope lens
• 1827: Ohm: electrical current disc.
• 1826: aniline disc.
• 1825: benzene isolated
• 1825: Parry: 1st to describe goitre with symptoms of thyrotoxicosis
• 1824-25: Addison: 1st desc. of probable megaloblastic anaemia
• 1824: Dutrochet: disc. cellular osmosis *endosmosis*
• 1824: suspended animation by inhaling CO2 to reduce pain from surgery
• 1824: Dutrochet: universal cellular structure of tissues; growth by new formation of cells
• 1824: Hosack: stillbirth rate increased with use of ergot
• 1823: Mitre-Edwards: disc. tissues are composed of spherical corpuscles 1/300th mm in diameter (cells)
• 1823: Bell: observed trigeminal nerve is both motor and sensory
• 1823: chlorine liquefied
• 1823: the Lancet founded
• 1822: Mendel: founds genetics
• 1821: Bell: disc. exterior respiratory nerve and desc. facial nerve palsy
• 1820: Pelletier: quinine and cinchonine isolated from cinchona
• 1820: *mesmerism* used to reduce pain from surgery
• 1820: galvanometer invented
• 1820: Rolando: studies of brain and spinal cord
• 1820: Pelletier: colchicine isolated from colchicum

**1810's:**

• 1819: isomorphism
• 1819: electromagnetism
• 1817-18: Berzelius: lithium, selenium and cadmium disc.
• 1817: Parkinson: 1st desc. of Parkinson's disease *paralysis agitans*
• 1816: Laennec: invented stethoscope
• 1814: Colle: desc. of fractured distal radius in elderly women
• 1812: NEJM medical journal 1st published as NEJM&S
• 1812: Baer: 1st professor of ophthalmology
• 1811: Avogadro: molecular composition of gases theory
• 1811: Bell: disc. anterior spinal roots are motor, and posterior are sensory
• 1810: canning of foods invented

**1800's**

• 1809: McDowell: 1st successful ovarian cystectomy (~20lbs) without GA
• 1805: morphine isolated; curare investigated;
• 1803: Berzelius: cerium disc.
• 1803: Portal: published anatomy text in 5 volumes
• 1803: Napoleon: decreed the categories of those who practice medicine
• 1802: Dalton: atomic theory developed
• 1802: 1st children's hospital - L'Hospital des Enfants Malades in Paris
• 1800: Bichat: founded system based on normal and pathologic structure based on tissues rather than organs
• 1800: Desgranges: 1st physician to use ergot (had been used by midwives in past)
• 1800: Herschel: infrared rays disc.
• c1800: cautery used for liver absceses and splenic disease;

18th century

1790's:

• 1799: 1st national pharmacopoeia published (Prussia)
• 1799: Ferriar: 1st desc. of cardiac actions of digitalis
• 1798: Jenner: attenuated smallpox vaccine
• 1797: chromium discovered
• 1797: Blane: after 180yrs, Navy finally accepts evidence of lime to prevent scurvy on ships
• 1796: Jenner: 1st vaccine (cowpox)
• 1796: Lowitz: pure ethanol manufactured
• 1794: Beddoes, Wat, Davy: inhalational oxygen Rx

1780's:

• 1786: Klaproth: uranium disc.
• 1785: Berthollet: chemical bleaching invented
• 1780: Fontana: water gas disc.
• 1780: Franklin: bifocal lens invented

1770's:

• 1779: Spallanzani: semen is necessary for fertilisation
• 1778: Gleichen: use of indigo and carmine stains in microscopy
• 1777: Lavoisier: air is mainly nitrogen and oxygen
• 1776: Hunter: noted PM changes in myocardium associated with angina
• 1776: Dobson: proved that sweet tasting urine of diabetics is due to sugar
• 1775: Priestley: hydrochloric acid and sulphuric acid disc.
• 1775: Withering: use of digitalis as diuretic for dropsy (CCF)
• 1774: manganese, baryta and chlorine disc.
• 1774: Mesmer: hypnotism used for health purposes
• 1772: Priestley: nitrogen and nitrous oxide discovered
• 1771: Galvani: electrical nature of the nervous system

1760's:

• 1769: Morgagni: associated aortic incompetence with SOB, pleural effusions and palpitations, and noted association between endocarditis and gonorrhoea
• 1768: Heberden: this account of angina pectoris led to it being accepted as a distinct disease entity
• 1767: Hunter: accidentally inoculated himself with both syphilis and gonococcus causing confusion!
• 1766: Cavendish: hydrogen less dense than air
• 1765: Spallanzani: hermetic sealing of food
• 1763: Von-storck: colchicum introduced as Rx of gout
• 1762: Plenciz: concept of contagion due to a *semiale verminosum* - a different “seed” for each disease

1750's:

• 1754: Black: carbonic acid gas disc.
• 1750: obstetric forceps refined by adding a pelvic curve, 1st recorded use of forceps to rotate the head before delivery, and 1st recorded use of forceps to deliver the after-coming head in breech deliveries
• c1750: opium smoking popular in the Orient
• c1750: Stone: willow bark had effect on agues (fever)

1740's:

• 1749: De-senac: cinchona used to Rx AF
• 1748: Fothergill: desc. of diphtheria
• 1747: Lind: pioneering trial of oranges and lemons to prevent scurvy on ships

1730's:

• 1736: Aymand: 1st successful appendicectomy (appendectomy)
• 1733: Butter: 1st public demonstration of use of obstetric forceps
• 1730: Reaumur: alcohol thermometer invented

1720's:

• 1726: Hales: 1st to measure human BP
• 1724: Boerhaave: 1st to describe rupture of the oesophagus *Boerhaave's syndrome*
• 1723: Riverius: 1st desc. in literature of clinical picture of bacterial endocarditis
• 1720: Hales: 1st to measure CVP and BP (in dog and horse)

1710's:

• 1717: Montagu: smallpox innoculation introduced in England
• 1715: Vieussens: clinical features of pulmonary valve incompetence
• 1714: Fahrenheit: mercury thermometer invented
• 1714: Anel: fine pointed syringe for syrgery
• 1713: Lemery: demonstrated iron was present in blood
1700's

- 1708: Boerhaave: theory of inflammation put forth
- 1707: Floyer: introduced counting pulse beats
- 1706: Cowper: ossifications of aortic valves and noted aortic incompetence
- 1704: Valsalva: subdivided ear into external, middle and inner
- 1704: Valsalva: 1st to treat the insane with humane methods
- 1700: Baglivi: disc. of smooth and striped muscle types
- 1700: Toumefort: ammonium chloride disc.
- 1700: Portal: disc. placenta praevia

17th century

1690's:

- 1696: Wiseman: classicall account of scrofula
- 1695: Grew: magnesium sulphate isolated
- 1694: Dekkers: disc. albumin in urine
- 1694: Morton: proved that lung tubercles produced one of the most widespread forms of consumption
- 1691: Havers: disc. of Haversian canals in bone

1680's:

- 1689: Morton: tubercles in TB
- 1687: Brunner: disc. of duodenal glands
- 1687: Cestoni: disc. *ascaris as cause of scabies*
- 1685: Nuck: disc. salivary ducts
- 1685: De Vieussens: 1st adequate description of left ventricle and coronary vessels
- 1683: Leeuwenhoek: explanation of accommodation of the eye
- 1683: Leeuwenhoek: disc. of RBC's, *spermatozoa, protazoa, and bacteria*; desc. anatomic structure of teeth;
- 1682: Van Meekeren: 1st desc. of Ehlers-Danlos syndrome
- 1681: Sydenham: identified iron as a Rx for *chlorosis* of adolescent women (anaemia)
- 1680: Sylvius: note role of lung tubercles in phthisis

1670's:

- 1679: Willis: noted diabetics have sweet tasting urine
- 1679: Bonetus: desc. *miliary TB*
- 1679: Vesalius: binary number system developed
- 1677: Peyer: disc. of Peyer's patches in small intestine
- 1675: Leeuwenhoek: microorganisms observed
- 1673: Malpighi: 1st to demonstrate *development of the ovum*
- 1672: De Graaf: disc. of ovarian follicles
- 1672: introduced *ipecauanha* from Brazil to Rx dysentery
- 1671: Leibniz: integral calculus developed
1671: Leibniz: nature and existence of ether
1670: 1st minute hands on watches

1660's:

- 1669: phosphorus 1st prepared
- 1668: Leibniz: 1st desc. of RBCs
- 1666: Meibom: disc. of conjunctival glands
- 1665: Newton: differential calculus developed
- 1664: Willis: disc. of cerebral blood vessels **circle of Willis**
- 1663: Newton: Binomial theorem developed
- 1662: Bellini: disc. of renal tubules (not chords as had been proposed)
- 1662: Sylvius: disc. parotid and lachrymal ducts
- 1661: Malpighi: one of the 1st to use microscope on tissues; 1st demonstrate vesicular structure and capillaries in the lungs; disc. splenic corpuscles and renal glomeruli;
- 1661: Huygens: manometer for gases invented
- 1660: Earl of Clarendon: one of the earliest accounts of angina pectoris

1650's:

- 1659: Willis: 1st desc. of typhoid fever
- 1658: Wepfer: apoplexy (stroke) caused by cerebral haemorrhage
- 1657: Bartholin: desc. what we now call trisomy 13
- 1657: Calmette: described encephalitis epidemic in Denmark
- 1656: Wharton: disc. of submandibular gland duct
- 1654: Pascal: theory of probability developed
- 1650: Calmette: described intestinal lymphatics & drainage via thoracic duct into venous system
- c1650: Riviere: used antimony to Rx many fevers
- c1650: potato, tea, coffee, cocoa, digitalis leaves introduced to Europe

1640's:

- 1647: Chamberlen: use of obstetric forceps
- 1642: Wirsung: disc. of pancreatic duct
- c1641: arsenic 1st used in medicine since the Dark Ages?

1630's:

- 1633: Calancha: 1st written record of use of cinchona to Rx fever and tertians (malaria)

1620's:

- 1628: Colle: 1st definite desc. of blood transfusion but later banned by government
- 1628: Harvey: proved beyond doubt the physics of the general circulation of blood using mathematical proofs
- 1627: Aselli Gaspare: disc. of lymphatics
• 1626: Santorio: 1st use of thermometer to record human temperature
• 1625: Glauber: disc. sodium sulphate
• 1620: Oughtred: invented sliderule

1610's:

• 1617: Landois: advocated lemon juice to cure scurvy on ships but not accepted by the navy!
• 1614: Napier: invented logarithms

1600's

• 1603: Paracelsus: diabetes due to salt in urine? Linked cretinism to endemic goitre
• 1602: Cascarido: barium sulfide disc.
• 1602: Platter: accurate desc. of cretinism and associated it with goitre

16th century

1590's:

• 1596: Galileo: thermometer invented
• 1595: Mercurio: 1st to maintain that a protracted pelvis is an indication for Caesarian section
• 1590: Janssen: 1st compound microscope
• c1590: tobacco smoking 1st observed in Europeans

1580's:

• 1582: Lonicer: ergot used as proven method of producing pains in the womb; used by midwives;
• 1580: Tagliocozzi: rhinoplasty via skin flap from arm
• 1580: Raleigh: native curare preparations brought to Europe and studied

1570's:

• c1570: Variolo: desc. of pons, crura cerebri, optic commissures

1560's:

• 1560: Pare: 1st to practice podalic version in labour
• c1560: Ingrassia: disc. of seminal vesicles and stapes
• c1560: Eustachio: discovery of Eustachian tube
• c1560: Aranzio: anatomy of the fetus; discovered ductus arteriosis & ductus venosus;
• c1560: Coiter Volcher: studied bone development in the fetus
• c1560: D'Acquapendente Gerolama Fabricio: studied anatomy and physiology of the fetus, generation and childbirth; venous valves
• c1560: Carcano Giambattista: 1st desc. foramen ovale & ductus arteriosis, 1st accurate desc. of
ocular muscles and lachrymal gland

- 1560: Cesalpino: 1st to use the term *circulation* and discover the general circulation
- 1560: Pare: abolished cautery and boiling oil onto wounds; ligated arteries at haemorrhaging wounds
- c1560: Ingrassia: 1st to distinguish chicken pox and sciarlatina from measles

**1550's:**

- 1550: Vesalius:
  - 1st description of corpus luteum and corrected Galen's errors on the uterus; course of the veins; careful description of the heart anatomy;
  - 1st to show *artificial respiration* could keep an animal alive even after it's thorax is opened
- 1550: Colombo: 1st to state that the arteria venosa carried blood not air from lungs to heart
- 1550: Cannano: 1st description of valves within the veins
- 1550: Fallopio: 1st description of the chorda tympani and semicircular canals, clitoris, Fallopian tubes, arteria profunda of penis
- 1550: Fuchsius: foxglove desc. botanically and named *Digitalis purpurea*

**1540's:**

- 1535: Brunfels: 1st adequate pharmacopoeia
- 1535: Cartier: learnt from Canadian Indians that spruce leaves cured scurvy
- 1530: Gallicus Sive Morbus: 1st to clearly attribute spread of disease by living organisms
- c1530: Fabricius of Acquapendente: ligation of arteries, techniques for tracheotomy, thoracentesis, urethral surgery, apparatus for wry neck, spinal curvatures,

**1520's:**

- 1527: De Bethencourt: coined term *venereal disease* and recognised it could be transmitted to offspring
- 1520: Fracastoro: recognised 3 forms of contagion: simple contact, fomites and transmission by distance
- 1520: Paracelsus:
  - reformed the materia medica, introduced arsenic, mercury, lead, created *laudanum* (an opium tincture) and coined the term *zink* for the metal *zinc*
  - re-popularised use of opium as therapeutic in Europe
  - “All things are poison, and nothing is without poison; only the dose permits something not to be poisonous.”
  - discarded the *4 humours doctrine* of that illness was caused by imbalance of the Hippocratic 4 humours - blood, phlegm, black bile and yellow bile, and believed that *illness was caused by external factors* and that sickness and health relied on harmony between man and nature, and thus astrology was a significant part of his medicine.
1510's:

1500's

- 1514: De Vigo: excellent desc. of syphilis, used mercury plaster and cautery of lesion
- 1502: Almenar: recognised importance of sexual contact for transmission of syphilis but believed clergy caught it some other way
- 1500: Da Carpi: 1st careful examination of tympanic membrane, pineal gland, lateral ventricle of the brain and valves of the heart
- c1500: Da Carpi: mercury used to Rx syphilis for centuries
- c1500: Chinese used dried skin of toads (contains glycosides)
- c1500: psilocin-containing mushrooms used by SW American natives

15th century

- 1497: Leoniceno: 1st description of syphilis in Europe (brought from America by Columbus' sailors)
- 1495: Zerbi: 1st studies of infantile anatomy
- 1490: Achillini discovers 4th cranial nerve and function of 1st pair of cranial nerves
- 1480: Da Vinci studies anatomy without regard for Galen's findings, including sections of brain and cranial nerves; 1st accurate description of uterus and fetal membranes;
- 1480: Savonarola: studied contracted pelves and their importance in labour
- c1480: Brunschwig: illustrated descriptions of surgical techniques
- c1480: Bagellardi: one of the earliest paediatric books
- 1471: Ferrari coins the term ovary for the female testicle
- 1463: printing invented
- 1460: Benivieni: post mortem studies to find cause of disease - the “father of pathologic anatomy”
- 1450: Krebs: advocated use of the water clock to time respiratory and heart rates

14th century

- 1350: John of Ardenne: 1st English surgeon
- 1340: Guy de Chauliac: used Theodoric's narcotic or soporific inhalant as an anaesthetic
- c1300: Arabian traders introduce opium to the orient
- c1300: Guy de Chauliac: noted cinchona bark had been used for centuries by Sth American natives to Rx malaria

13th century

- 1250: Welsh physicians use foxglove (digitalis)
12th century

11th century

- 1010: Avicenna: attempted to codify all medical knowledge
  - his *Canon of Medicine* was used in universities until 1650

10th century

dark ages

- 890: Rhazes/Rasis (Persian): 1st documented authentic account of measles and smallpox
- c635: Paul of Aegina:
  - aware of different types of parasites: taenia, ascaris and oxyuris
  - desc. catheterisation with subsequent injection of drugs
  - Rx of anal fistulae, haemorrhoids, varices, anal condylomata
  - extirpation rather than cautery for breast cancer
  - inguinal hernia surgery; lithotomy for bladder stones;
- 550: colchicum used to Rx joint pain

ancient Hindu

- c100BC: Rauwolfia alkaloids used for bites, insanity

ancient Chinese

- c100BC: ephedrine containing plants used

ancient Roman

- c200AD: Aretaeus:
  - diabetes is the melting down of flesh into urine, Rx by quenching thirst
  - hemiplegia due to a lesion on the opposite side of the brain
- c100AD: “squill” used as diuretic, heart tonic, emetic, and rat poison

ancient Greek

- c150AD: Galen (120-200AD):
  - perpetuated Hippocratic medicine, moving both forward and backward
  - desc. of cholera and hydrophobia
laudable pus essential for healing
desc. malingers and nerve lesions
used rib resection to Rx empyema
noted cervical dilatation in labour

- c200BC: Dioscorides: poisonous action of colchicum
- c350BC: recognised pustules on grain can cause abortion
- c400BC: Hippocrates (c460-370BC):
  - founder of the Hippocratic School of Medicine and regarded as the father of western medicine
  - credited with greatly advancing the systematic study of clinical medicine, and the Hippocratic Oath
  - separated the discipline of medicine from religion, believing and arguing that disease was not a punishment inflicted by the gods but rather the product of environmental factors, diet, and living habits.
  - focus on patient care and prognosis rather than diagnosis which was the prime goal of the Knidian school of medicine
  - made careful, regular note of many symptoms including complexion, pulse, fever, pains, movement, and excretions
  - began to categorize illnesses as acute, chronic, endemic and epidemic, and use terms such as, “exacerbation, relapse, resolution, crisis, paroxysm, peak, and convalescence”
  - Hippocrates and his followers were first to describe many diseases and medical conditions such as:
    - finger clubbing, Hippocratic face, Hippocratic succussion is the internal splashing noise of hydropneumothorax or pyopneumothorax
    - descriptions of the symptomatology, physical findings, surgical treatment and prognosis of thoracic empyema
  - vaginal pessaries used for prolapse, cancer of uterus and for sterility
  - documentation of a vaginal speculum
  - traction methods to Rx bone fractures (eg. Hippocratic bench), and divided fractures into simple and compound
  - used gold wire to bind fractured jaws
  - 1st documented chest surgeon and used of lead pipes to drain chest wall abscesses
  - rectal speculum and proctoscopy
  - haemorrhoid cautery, ligation and excision
  - reduction of dislocated shoulders by extension, traction and foot in axilla
  - obese die earlier
  - rest relieves pain
  - gout does not occur in eunuchs, women or young men
  - malaria divided into types: quotidian, tertian, and quartan
  - phthisis, TB spine with tubercles
  - cataract surgery
  - use of oak bark, sanguis draconis, grenadine, juice of scilla, celery, parsley, white hellebone, hyssop, root of thassia, belladonna, mandragora, jusquiam, opium, castor oil, coloquin, sulphur, asphalt, alum, lead, copper, arsenic
  - eat liver to cure night blindness
  - noted different ages get different conditions, eg toddlers get:
    - tonsil affections, incurvature cervical spine, asthma, roundworm, ascarides, achrochordon, struma, tubercles
  - importance of diet, massage, exercise, gymnastics, sea bathing
  - healing by secondary intention if unable to gain close wound approximation and healing by 1st intention
○ importance of pure or boiled water or wine in Mx of wounds, and to avoid greasy dressings
○ sandy sediment in urine indicates bladder calculus
○ spontaneous bloody urine represents rupture of small vein in kidney
○ believed fertilisation was due to a mix of male and female seed
○ thought that the uterus was always bicornuate and that males conceived on the right, and females on the left horn

- c450BC:
  ○ usage of animal cadavers to learn anatomy as Greece banned human dissection
  ○ arsenic used as a medicinal

### ancient Egyptian

- 1000BC: squill containing cardiac glycosides used
- 1500BC: reference to polyuria, trachoma, hookworm, filariasis, arthritis
- 1500BC: desc. of night blindness
- 5000BC: castor oil used as laxative

### stone age

- 9000BC: castration ⇒ eunuch