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

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 astham 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: Reyes et al: hep E virus disc.
• 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 assist 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
• 1987: 1st colour computer screens
• 1987: 1st antiretroviral agent marketed - a nucleoside reverse-transcriptase inhibitor for Rx
of HIV - zidovudine

• 1987: Palmer: nitric oxide release accounts for activity of endothelin relaxing factor
• 1986: GISSI trial of iv thrombolytic Rx (streptokinase) for AMI results in push for early iv thrombolysis in STEMI
• 1985: TIMI trial of streptokinase vs tPA for AMI
• 1985: DNA profiling techniques
• 1985: HIV virus identified as the causal agent of AIDS
• 1985: Asch et al: Gamete Intra-Fallopian Transfer (GIFT) - a new Rx for infertility
• 1985: Campbell: suggested angiotensin II could be produced in tissues rather than in circulation and following year showed presence of m-RNA for angiotensinogen in tissues
• 1984: 1st Macintosh computer
• 1984: r-tPA (Alteplase) 1st iv tpa thrombolytic to be used for AMI
• 1984: depo Provera granted limited licence as a contraceptive in the UK
• 1984: Morris et al: calcitonin gene related peptide isolated and characterised
• 1983: Steere et al: Borrelia as cause of Lyme disease
• 1983: adenovirus serotypes 40,41 associated with gastroenteritis
• 1983: Warren: rediscovery of Helicobacter and linked it to peptic ulcer disease
• 1983: Gusella et al: gene marker linked to Huntington's chorea
• 1982: Spiess et al: growth hormone releasing factor characterised
• 1982: Philibert et al: synthesis of RU486 (mifepristone) - later used to procur medical terminations
• 1982: Smith: anti-digoxin Fab antibody fragments used to Rx digoxin toxicity
• 1982: ceftriaxone studied
• 1982: Carrell: structure and function of human antitrypin
• 1982: Murdoch Institute for research into birth defects founded at RCH, Melbourne
• 1981: 1st Intel-based PC leading to computer terminals in hospitals for use by doctors (particular in the late 1980's)
• 1981: Spiess et al: ovine corticotrophin releasing factor identified
• 1981: Centre for Disease Control recognises AIDS
• 1981: verapamil approved in USA for use in angina and SVT
• 1981: ceftazidime and moxolactam studied
• 1981: International Physicians for the Prevention of Nuclear War (IPPNW) established
• 1980: imipenem discovered
• 1980: McCarthy: sulphasalazine to Rx rheumatoid arthritis
• 1980: Furchgott: showed obligatory role of endothelium in arterial smooth muscle relaxation
• c1980: acyclovir discovered

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: Kaposis sarcoma reported in 2 homosexual men
1977: last reported case of smallpox
1977: Lord: endogenous opioid peptides discovered
1977: cefaclor
1977: clinical psychology recognised as an independent profession
1976: slow release progesterone introduced: Progestasert
c1976: **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: Shaul: teratogenic effects of warfarin
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
1971: 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: cephalixin 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: Bhaskar: Histoacryl tissue adhesive (n-butyl cyanoacrylate) used in dental applications
• 1968: rifampicin discovered
• 1968: Bakhle: 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: Altonyan: 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: 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 antitrypsin deficiency discovered
• 1963: Weinstein: gentamicin discovered
• 1963: 1st generation cephalosporin - cephalothin studied
• 1963: 1st successful liver transplant
• 1962: Lippes Loop IUCD introduced
• 1962: thalidomide causes birth defects
• 1962: Hass: verapamil reported to have negative inotropic and chronotropic effects
• 1962: Waring: clofibrate synthesized and found to lower total lipids and cholesterol
• 1962: carbenoxolone used to Rx peptic ulcer disease in Europe
• 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
- c1955: Peart: recognition of 2 angiotensins and angiotensinogen converting enzyme (ACE)
- c1955: Hodgkin: crystal structure of B12 determined by X-ray diffraction
- c1955: bretylium introduced as antihypertensive
- 1954: Simpson et al: coined **aldosterone** for the substance from urine in patients with oedema
- 1954: Dutcher: **nystatin** discovered
- 1954: Berger: 1st pharmacologic report of meprobomate
- 1953: **double helix structure of DNA** established
- 1953: Watson: 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)
- c1953: Yonkman: coined term **tr tranquilliser** to characterise the psychic effect of reserpine
- c1953: new classes of **progesterones synthesised with oral activity**
- 1952: hesperidon sulfate used as a oral contraceptive
- 1952: Deniker: **chlorpromazine introduced - the 1st of the phenothiazine major tranquillisers**
- 1952: tetracycline produced from chlortetracycline
- 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
- c1952: 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 chlorotetracycline 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
1948: Hafliger: imipramine (tricyclic antidepressant) synthesized
1948: lithium chloride used as a salt substitute in CCF but found to have toxicity
1947: transistor invented
1947: Howard Florey Institute founded in Melbourne
1947: Laurell: coined transferrin
1947: 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
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
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
1936: Kogl: isolated an essential growth factor for yeast in egg yolk and called this biotin
1936: Starr: pharmacologic studies of methacholine, carbachol, and betahanechol
1935: Stanley: tobacco virus shown to be a protein?
1935: Castle: defined intrinsic factor and extrinsic factor in pernicious anaemia
1935: thiopeptone / thiopental used as iv anaesthetic; structure of d-tubocurarine established;
1935: Warburg: nicotinamide obtained from a coenzyme in horse RBCs
1935: chemical structure of reducing agent determined and called ascorbic acid / vitamin C
1935: Dam: dietary bleeding disorder could be Rx with substance he coined vitamin K
1934: Goldblatt et al: demonstrated constricting renal arteries could induce hypertension
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: Riddle et al: coined prolactin
1933: Harrop: adrenocortical insufficiency caused renal loss of sodium
1933: Roughton: carbonic anhydrase discovered in RBCs
1933: insulin shock Rx used in psychiatry
1932: Cushing: desc. syndrome of hypercorticism “Cushing's syndrome”
1932: Waugh: reducing agent in cabbage identified as the antiscorbutic agent in lemon juice
1932: sulphonamides disc. Prontosil commercially sold in 1935 as an antibiotic
1932: Warburg: described a yellow respiratory enzyme in yeast (later found to be riboflavin)
1932: Best: choline prevents fatty liver in pancreatectomized liver dogs on insulin
1931: neutron, positron
1931: Fox: accidentally discovers some can taste phenylthiocarbamide while others cannot
1931: Britton: hypoglycaemia could be corrected with adrenocortical extracts
1931: cyclotron invented
1931: Karrer et al: structural formula of retinol established; vitamin A isolated;
1931: Bose: Rauwolfia alkaloids used in India for hyperpetension and insanity
1931: Gaddum: substance P 1st detected

brining 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)
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1931: Karrer et al: structural formula of retinol established; vitamin A isolated;
1931: Bose: Rauwolfia alkaloids used in India for hyperpetension 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 widespread 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: Forrestier: **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: 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: Lewis: triple response of intradermal histamine described
• 1927: radiochemistry founded
• 1927: Best: **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: transmutation of elements
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 amoicide
• 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 alkaloids 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: Vamossy: 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 (inspiration 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 ganglions**
• 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: Nicolai: disc. tetanus bacillus
- 1883: Bizzozeri: disc. platelets
- 1883: preventive inoculation for anthrax developed
- 1883: Klebs: disc. diphtheria bacillus
- 1883: Koch: disc. cholera vibrio
- 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: Bollinger: disc. actinomycosis as cause of fungus
- 1880: Murrell: used sublingual nitroglycerin (GTN) to relieve angina and prevent exertional angina
- 1879: Neisser: disc. gonococcus
- 1879: Billo: disc. typhoid bacillus
- 1879: Eberth: disc. typhoid bacillus
- 1879: Takaki: 1st indication of dietary cause to beri beri in sailors (fish, meat added to polished rice meals to prevent it)
- 1879: electrical stimulation of vagal nerve in the neck used to Rx asthma
- 1879: evolved the filtration theory of urine formation
- 1879: uricosuric effects of salicylates recognised and thus used to Rx gout
- 1879: Von Behring: invented diphtheria and tetanus antitoxins
- 1879: O'Dwyer: instruments to intubate to relieve suffering of diphtheria
- 1878: Hammer: disc. thrombotic occlusion of a coronary artery
- 1878: 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
1878: iodoform used as an antiseptic in surgery
1878: Sims: gall bladder opened in surgery
1878: Riche: 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
1865: 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 maldnourished 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
1855: 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
1853: 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: glycolic 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: 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: Semmelweiss: 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
- c1840: tincture Hamamelis virginia topically for bleeding haemorrhoids
- c1840: Purkinje: produced artificial nystagmus and gave a thesis on vision
- c1840: Purkinje: 1st to use the microtome, and disc. Purkinje cells of cerebellum and Purkinje fibres in the heart
- c1840: Panizza: studied lymphatics, 9th cranial nerve
- c1840: Charles Dickens: possibly the 1st desc. of Prader-Willi syndrome
- c1840: 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: Valentín: 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 abscesses 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
17th century

1690's:

- 1696: Wiseman: classical 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: disc. miliary TB
- 1679: Vesaliius: 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 ipecacuanha 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
- 1650: Riviere: used antimony to Rx many fevers
- 1650: potato, tea, coffee, cocoa, digitalis leaves introduced to Europe

1640's:

- 1647: Chamberlen: use of obstetric forceps
- 1642: Wirsung: desc. 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'Acquapendante Gerolama Fabrizio: 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 scarlatina 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 its 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:

1530'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 cauterity 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 pelvis 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 hellebore, 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, achochordon, 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