

Immigrant Physicians Their Influence on American Medicine

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Discovery of New World

- “New World” Europeans
- Immigrants to colonies

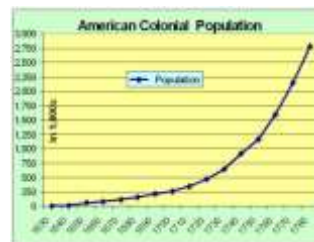


- Industrial Revolution
- Cities towns villages
- Nation's Infrastructure



America's Population

- Young country population expanded
 - 1700 = 260,000
 - 1800 = 5 million
- } Settlers
- NYC, Philadelphia, Baltimore, Boston



Overcrowding Poor Conditions

- Urbanization → overcrowding → Sanitation → Hygiene
- NYC 1800
 - streets = sewage trash waste



Health Challenges

- NYC 1880
 - 150,000 horses
 - 100,000 tons manure, 10 million gallons urine / Year
 - “The great horse manure crisis”
 - Decomposed horses, rats, flies ➡ waves disease epidemics – cholera killed 10%



Physicians Shortage

- Shortage of Physicians
- Lack of medical knowledge
- Overwhelmed war injuries / disease epidemics
- Immigrant physicians overseas information / blessing to a new country



History of Medicine

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Medicine: Neolithic Age - Ancient Egypt

- Mesopotamia (4500 BCE)
 - Babylonian clay tablets in cuneiform - medical
- Ancient Egypt (3100 BCE)
 - Alexandria medical school 300 BCE - 1st



> 500,000

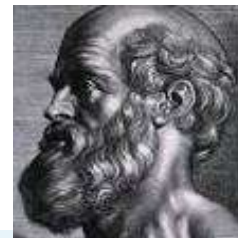


Library of Alexandria



Medicine: Ancient Asia - Greece

- Indus & Chinese (2500 BCE)
 - Indian medicinal herbs / Yoga
 - Chinese traditional medicine / acupuncture
- Ancient Greece (800 BCE)
 - Hippocratic teaching / oath
 - Caduceus staff



Father of Medicine



Medicine : Rome - Middle Ages

- Ancient Rome (625 BCE)
 - Roman medicine disseminated by Greeks
- Middle Ages (450 CE – 1450)
 - Early: “Dark Ages” church influence: sick are sinners, disease God punishment
 - Late: Golden age of Islamic medicine



Dark Ages



Golden Age

Europe Medicine: Renaissance - Enlightenment

- Renaissance (1500 -1600)
 - Anatomy permitted
 - Vesalius advanced

 - Enlightenment (1650 – 1850)
 - Germ theory
 - Vaccines
 - Hygiene
 - Public Health
- } Epidemics control



De Humani Corporis Fabrica
Andreas Vesalius 1543



Modern Medicine

- Western (European – American) scientific medicine (1850 - 1950)
 - Exponential expansion of medical science
 - New technologies



Laser



Robotic



Microsurgery



- American modern medicine
 - Immigrant physicians rivaled European Medicine



Early Medical Practices

- Trepanation
- Limb amputation
- Circumcision
- Bloodletting
- Acupuncture
- Leeches
- Maggots therapy



Disease Epidemics

- Bubonic plague
- Malaria
- Cholera
- Typhoid fever
- Yellow fever
- Poliomyelitis

Bacteria

Virus

Bubonic Plague Black Death
25 million deaths in Europe



1347-1352

Medical Breakthroughs

- X-Ray (1895) W Rontgen
- Anesthesia (1846) W Morton
- Antiseptics (1870) J Lister
- Antibiotics (1928) A Fleming



Alexander Fleming

- 1949 OKC
- Opening Oklahoma Medical Research Foundation (OMRF)



Gov Roy Turner Sir Alexander Fleming

Anatomical Science and Anatomists

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Anatomists of Alexandria School of Medicine

- Egyptian priests
- Greek anatomists
 - Herophilus (335–280 BCE)
 - Erasistratus (304–250 BCE)
 - Galen (129 CE–216 CE)



Alexandria

Herophilus

Erasistratus

Galen

Medieval Islamic Physician-Anatomists

10th -11th Century

- Avicenna (980-1037)
- Al-Razi (864-925 CE)
- Ibn al-Nafis (1213-1288)
- Al Kahhal (940-1010)
- Al-Hazen (965-1040)
- Al-Zahrawi (936-1013)



Avicenna



Al-Razi



Al-Hzen



Al-Nafis

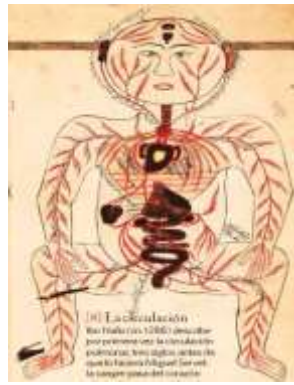


Al-Kahhal



Al-Zahrawi





European Physician-Anatomists

16th -18th Century

- Andreas Vesalius (1514-1564)
- William Harvey (1578-1657)
- William Hunter (1718-1783)
- John Hunter (1728-1793)
- Astley Cooper (1768-1841)
- Henry Gray (1827-1861)



Vesalius



Harvey



J Hunter



W Hunter



Cooper



Gray





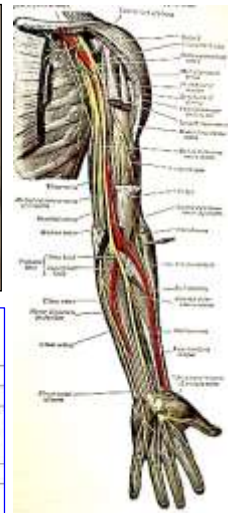
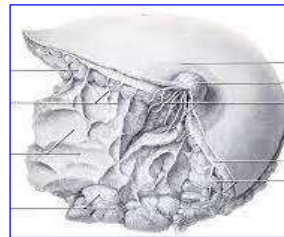
Vesalius



Hunter



Cooper



Grays Anatomy



Anatomy Mania

- 1800 = 4
 - 1900 = 160
- } Medical colleges in US



- Demand ↑ Supply ↓
- 1820s anatomy mania
- Practice of body snatching
- Grave robbers sold bodies to Med schools
- Physician anatomists were condemned and deplored



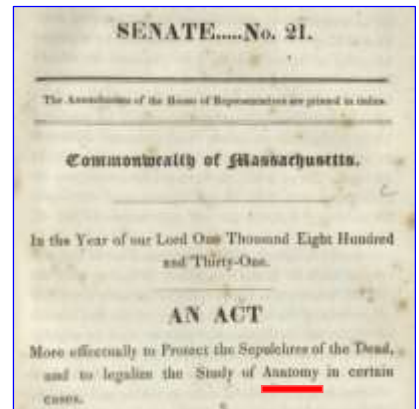
Anatomy Riots

- Society / religious people outraged
- Dissecting human body non-Christian / immoral
- 1800s = 20 major anatomy riots
- Med Schools ransacked mob violence



Struggle for Soul of Anatomy

- Legislations against “resurrectionist” snatching
- Anatomy Acts: 1st Massachusetts 1831 allowed —→
 - dissection unclaimed bodies, homeless, insane, criminals
- Practice body snatching ceased
- Anatomy professionalized



Medical Education

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Formal American Medical Education

- Pre-Revolution = nonexistent = apprenticeship
- Medical colleges:
 - Poor training
- 4 colleges formal education
 - Philadelphia (1765) 1st →
 - NYC, Boston, Baltimore



Surgeons Hall U Pennsylvania



Revamping American Medical Education

- Events reshaped American medical education

1) AMA (1847)



2) JH Circle ~1900 (W Osler, W Welch, R Gates, A Flexner)



- Surveyed all medical schools
- Flexner Report (1910) indictment almost all schools
- Recommendations: admissions, curricula, staff
- Of 131 schools only 76 continued to operate
- Created today's modern American medical educational system



Abraham Flexner

Immigrant Physicians Book

- 120 immigrant physicians
- Captivating stories
- Diagnostic tests
- Treatments
- Surgeries
- Medical innovations



Colonial Physicians

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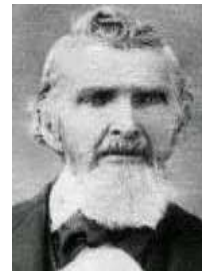
Medicine in Colonial Times

- Physicians poorly trained
- Heroic medicine: bloodletting, purging, sweating
- Balancing 4 humors
- Surgeries done in patients' homes
- Immigrant colonial physicians
 - pastors or ministers treated the body and soul



Samuel Fuller

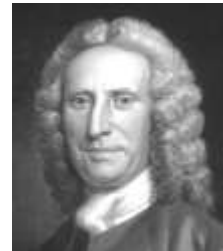
- British church deacon and physician / pilgrim
- Mayflower / 1st immigrant physician
- Cared for the sick on the ship
- Practiced medicine in Mass Bay colony
- 30 books (some medical but most religious)
- Died Plymouth Colony smallpox epidemic



1580– 1633

Cadwallader Colden

- Irish-born
- Seminary & medical schools – London
- Medical practice NY, surveyor general
- Colonial representative to Iroquois Confederacy
- Essays yellow fever epidemic
- Unhygienic → disease onset
- Improved NY sanitation
- Establishment field Public Health in US
- Governor of NY



1688–1776



Revolutionary War Physicians

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Immigrant Revolution War Physicians

- First experience with war injuries
- Shortage of Physicians & British medicines
- Immigrant from British Isles / help
- Patriots and politicians
- Founding Fathers
- Delegates Continental Congress
- Constitutional Convention
- Generals Continental Army
- Members G Washington cabinet
- State Governors



Robley Dunglison

- British-born
- 1824 President Thomas Jefferson
- Professor of medicine U Virginia
- Huntington's disease
 - Brain nerve cell degeneration
- Anatomist and educator
- *Medical Student Aids to the Study of Medicine*

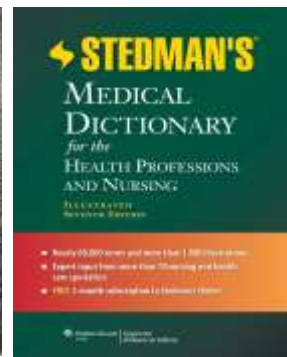
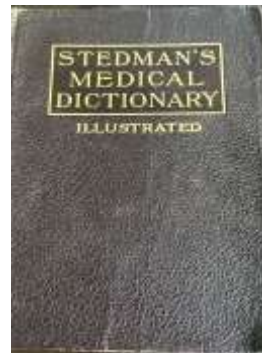


1837

1798–1869

Robley Dunglison

- 1833 *New Dictionary of Medical Science & Literature*
- Renamed *Stedman's Medical Dictionary*
- Physician Presidents
 - James Madison
 - James Monroe
 - Andrew Jackson
 - Thomas Jefferson

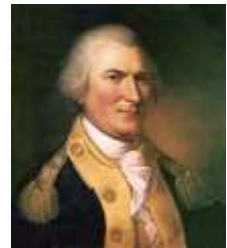


1903

7th edition 2007

Arthur St Clair

- Scottish-born / MD degree Edinburg
- Wealthy Pennsylvania landowner
- Brigadier General Con Army / with G Washington Yorktown
- Delegate and later only immigrant President Confederation Congress
- Founding Father and Governor Northwest Territory
- Lost all his fortune while in service of his country



St Clair Counties: Alabama

Illinois

Michigan

Missouri

1737 - 1818

James McHenry

- Irish-born
- MD degree from U Delaware
- Surgeon General for the C Army
- Saw action in many battles
- Once imprisoned by the British
- With Marquis La Fayette Yorktown
- Signer of the Constitution
- Maryland Senator
- The first Secretary of the War



Constitution



Fort McHenry

1753– 1816

Civil War Physicians

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Medicine in Civil War Time

- Better trained / less trained
- Germ theory / antisepsis unknown
- Physicians ill prepared
- Overwhelmed massive war casualties
- Musket bullets / gangrene and fatal sepsis
- 2/3 trauma surgery limb amputations



Medicine in Civil War Time

- Anesthesia = chloroform, whisky, refraining men
- Makeshift hospitals overcrowded, poor hygiene
- Cholera from contaminated food & water
- Every soldier died in battle, two died of disease



Civil War Soldiers

- 1/3 Union Army foreign born soldiers
- **Germany** > 200, 000 1st generation immigrants
- **Ireland** ~200,000,
- First casualty Irish, / 30,000 Irish killed
- War of immigrants
- Immigrants won war and saved Union



German Brigade



Immigrant Union Army Surgeons

- **Samuel Everett** British-born, Illinois infantry
- 1862, Shot head killed in Shiloh Battle, Tennessee
- **Hans Heg** Norwegian-born, Scandinavian regiment
- 1863, fatally shot abdomen in Chickamauga Battle, GA
- **Joseph Thoburn** Irish-born, Virginia infantry
- 1864, shot chest killed in Cedar Creek Battle, Virginia



1820-1862



1829-863

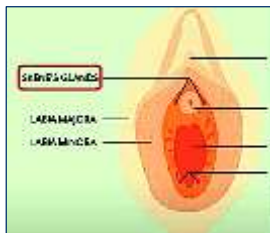


1825-864



Alexander Skene

- Scottish-born physican
- Established several Army ambulance Corps
- Discovered female genital gland 1880



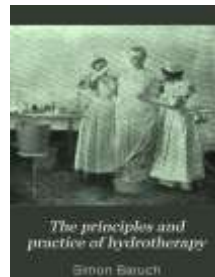
- Founded American Gynecology Society



1873 - 1900

Simon Baruch

- German-born
- Confederate war surgeon
- Introduced hydrotherapy Rx
- Published on bayonet wounds
- Cared for the poor and immigrants
- Built NY public bathhouses
- Passed state law requiring large cities establish free bathhouse facilities
- Public health advocate



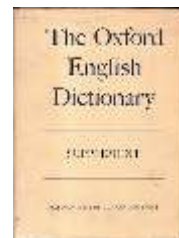
1840-1921

William Chester Minor

- Sri Lanka-born surgeon
- Traumatized by horrors Civil War injuries / bloody Battle of Wilderness VA
- Amputations without anesthesia / drove him insane
- Went to London to cure his mental illness
- Paranoia / shot and killed George Merit innocent man
- Found not guilty by reason insanity
- Committed to Broadmoor Asylum
- Two decades was major lexicographer for OED
- *Professor & the Mad Man* – adapted movie



Broadmoor



1834-1920

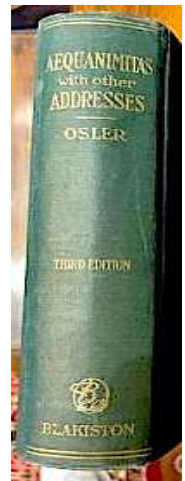


Physicians in Dawn of Modern Medicine

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William Osler

- Canadian-born
- Famous farewell address “*Aequanimitas*” Pennsylvania M college
- Book profound message professional behavior of physicians
- One of 4 JH luminaries (Osler, Halsted, Welch, Kelly)



1849-1919.

1904

William Osler

- Performed > 900 autopsies
- 1900 member JH Circle reshaped medical education
- First formal Journal Club for critiquing articles
- With W Halsted 1st formal residency-training JHH 1889



1899

William Worrall Mayo

- British-born
- Small solo practice Minnesota
- 1900 two immigrants:
 - Mother Alfred Moses & Donald Balfour MD

St. Mary's Hospital 12 beds



Mayo clinic



1819 - 1911



Georgios Papanikolaou

- Greek-born
- Pathologist Cornell
- Volunteered wife for dialy vaginal smears menstrual cycle / hormones
- 1950 Pap smear test Dx early cancer from cervical cells
- Saved lives of millions women
- Nominated to Nobel Prize twice



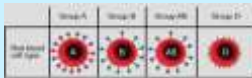
1883 - 1962

Physicians of Modern Medicine

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• James Carroll	Canada	}	Yellow fever epidemic
• Aristides Agramonte	Cuba		
• Karl Koller	Bohemia		Local anesthesia
Leonard Rowntree	Canada	}	Kidney dialysis machine
• Willem Kolff	Holland		
• Albert Sabin	Russia		Polio vaccine

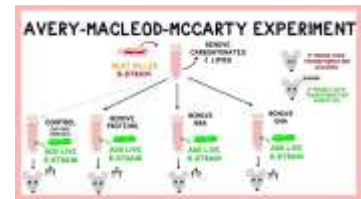


• Karl Landsteiner	Austria	ABO B group	} Blood Transfusion
• Philip Levine	Russia	Rh Factor	
• Alex Maximow	Russia	B marrow	
			
• Albert Claude	Belgium	Cell fractionation	} E Micrography of cell
• George Palade	Romania		
• Keith Porter	Canada		



Colin MacLeod

- Canadian-born
- Avery–MacLeod–McCarty research NY
- DNA = heredity material
- Set stage Watson & Crick discovery DNA structure
- President American Association of immunologists
- President OMRF OKC



1909 - 1972



Immigrant Physicians in Specialized Fields

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Medical Specialties

Founded in the US

• Abraham Jacobi	Germany	Pediatrics
• Alexander Skene	Scotland	Gynecology
• C Brown-Sequard	Mauritius	Endocrinology
• Robert Wartenberg	Lithuania	Neurology
• Franz Groedel	Germany	Cardiology



Medical Specialties

Introduced and Advanced

• Cadwllader Colden	Ireland	Public Health
• Samon Baruch	Germany	Hydrotherapy
• Wm Detmold	Germany	Orthopedic Surgery
• Josephina Magno	Philippines	Hospice
• John Wild	Britain	US mammography



Orthopedic Surgery



William Detmold

- German-born
- Civil War surgeon
- Introduced orthopedic surgery America
- Detmold knife (fork) for empty sleeve vets



1808-1894

Marius Smith-Petersen

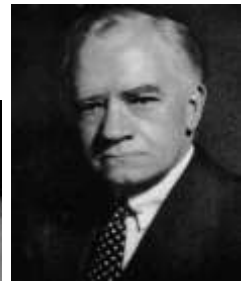
- Norwegian-born
- Mass General hospital
- Hip mold arthroplasty 1923
- 3-flanged nail hip 1925



Arthritis



Fracture



1886-1953



Arthur Steindler

- Austria-born
- Iowa University
- Paralytic children
 - Cerebral Palsy
 - Poliomyelitis
 - Scoliosis



1878–1959



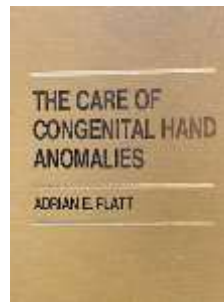


Steindler Flexorplasty



Adrian Flatt

- British-born
- Pioneer congenital hand surgeon
- Dallas Baylor Hospital
- Hand molds collection
- President ASSH

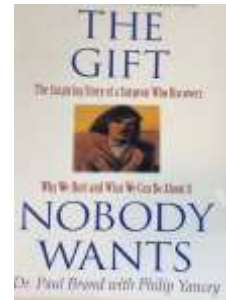


1977



Paul Brand

- India-born / British missionary parents
- Vellore Hospital India
- Investigated and treated leprosy patients
- Hanson Disease Lepresorium Carville LA
- Wrote *The Gift of Pain* / Three biographies
- Recognized by Queen Elizabeth
- Great humanitarian
- Lasker Award 1960



Cardiology



Immigrant Cardiologists

- Franz Groedel German Cardiology /ACC
- Isidore Snapper Dutch Heart disease prevention
- Samuel Levine Polish Armchair heart attack treatment
- Eliot Corday Canadian Continuous EKG
- André Cournand French Cardiac catheterization
- Andreas Grüntzig German Balloon angioplasty



Bernard Lown

- Lithuania-born
- Research sudden cardiac death
- Invented Lown Defibrillator for cardioversion restoring normal cardiac rhythm / saving millions of lives
- Used K to prevent Digitalis toxicity
- *The Lost Art of Healing* (1999)
- Nobel Peace prize social activism and founding
- “International Physicians Against Nuclear War”



1921 - 2021

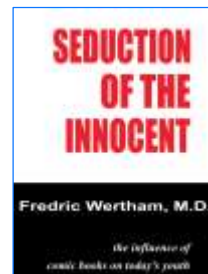


Psychiatry



Fredric Wertham

- German-born
- Studied psychological medicine JHH
- *Seduction of the Innocent*
- Comic books impact / violence / youth crime
- Comic books banned NY
- SCOTUS upheld the ban
- Advocate for ending racial segregation



1954



1895 - 1981

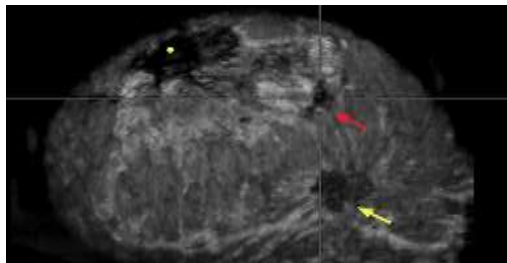


Radiology



John Wild

- British-born American / University of Minnesota
- Ultrasound body imaging / mammography
- Breast tumor diagnosis
- Father of Medical Ultrasound



1914 - 2009

Award-Winning Immigrant Physicians

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Most Prestigious Awards

- Nobel Prize Alfred Nobel Swedish
- Pulitzer Prize Joseph Pulitzer Hungarian-American
- Lasker Award Albert Lasker German-American

- 2000-2017
 - 40% of Americans won Nobel Prizes in medicine were immigrants
- 2016
 - all six American Nobel Prize winners in Medicine were foreign-born



Immigrant Women Physicians Nobel Laurites

- Gerty Cori: Prague-born
- Washington University Missouri
- Nobel Physiology and Medicine (1947)
- Cori Cycle = catalytic conversion of glycogen



- Rita Levi-Montalcini: Italian-born
- Washington University Missouri
- Nobel Physiology and Medicine (1986)
- Discovery of Nerve Growth Factor



American Healthcare

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Challenges Causes Cures

Trilogy

- High Cost
- Mediocre Quality
- Limited of access

Physicians

- ↑ Regulations
- ↑ Expenses
- ↑ Malpractice
- ↓ Reimbursement
- ↓ Personal time
- ↓ Patient trust

Responsibilities

- Society
- Government
- Payors
- Hospitals
- Patients
- Physicians



Physicians Responsibility

- Embracing code of ethics and professionalism
- Gaining patient trust
- Guard against medical malpractice law suits

- Subordinate a physician's individual interests to the interests of others.
- Adhere to high ethical and moral standards.
- Respond to societal needs in a manner that reflects a social contract with the communities served.
- Evince core humanistic values, including honesty and integrity, caring and compassion, altruism and empathy, respect for others, and trustworthiness.
- Exercise and accept accountability for themselves and for their colleagues.
- Maintain the knowledge and skills essential for good medical practice and exhibit a commitment to scholarship and advancement of clinical skills, medical knowledge, professional behavior and personal development.
- Demonstrate the interpersonal skills necessary to work cooperatively in the interest of patients and the public.
- Demonstrate a continuing commitment to excellence.
- Deal with high levels of complexity and uncertainty.

ABFM Professionalism Guidelines



Avedis Donabedian

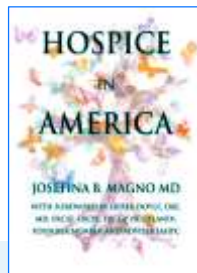
- Lebanon-born Palestinian
- University of Michigan
- Landmark article 1966 and following numerous publications
- Founder healthcare Quality & Outcomes Research
- The Donabedian Model of Healthcare Assessment
restructured Am Healthcare and changed its trajectory



1919 – 2000

Josefina Magno

- Philippine-born
- Author *Hospice in America*
- Founder Hospice in United States
- American Academy Hospice and Palliative Medicine
- Her contributions favorably influenced healthcare



1919-2003



Immigrant Women Physicians

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Immigrant Physicians and Suffragettes

• Anna Shaw

- British-born Physician
- Activist women voting right
- Founded Am Women Suffrage Association



1847-1919

• Me-Iung Ting

- 1st Chinese-born physician
- Immigrant women rights



1891-1969



James Barry

- Medical graduate of University of Edinburgh
- Army Surgeon British Empire
- Inspector General all military hospitals
- Saved lives of many injured soldiers
- First successful Cesarean section in Africa



1789-1865



Margaret Ann Bulkley

Challenges for Women Physicians

- Prejudice
- Male dominated profession
- Difficulty enrolling Medical colleges
- Mistreatment while in medical schools / banned from classes
- Challenges licensed & practice after graduation



Elizabeth Blackwell

- British-born
- Gender rejected from every US medical school
- Ill-suited medicine, intellectually inferior, no stamina
- 1847 accepted at Geneva Medical College NY
- 1st woman to graduate from American medical school
- Built her own medical college for women in NYC 1868
- Establish 1st London School of Medicine for women
- National Women Physicians Day February 3rd her birthday



1821 - 1910

Elisabeth Kübler-Ross

- Swiss-born psychiatrist / University of Colorado
- Dismayed by Rx mentally ill & dying patients
- Published *On Death and Dying* (1969)
- Home care vs Rx in institutional setting
- Champion for Hospice movement
- "Kübler-Ross model" / 5 stages of grief



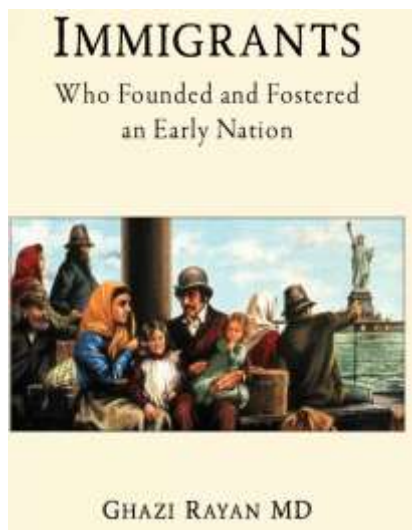
1926 - 2004

Francis Kelsey

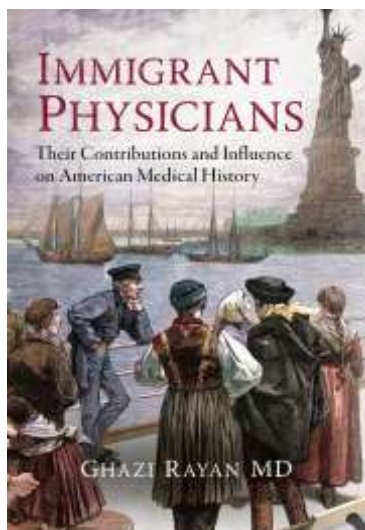
- Pharmacology Canada, MD degree University of Chicago / employed FDA
- Thalidomide approved in > 20 countries
- 1950 reviewed application by Richardson Merrell for Thalidomide
- Withheld approval repeatedly despite Pharma pressure
- 1960s, Thalidomide epidemic deaths (2000 newborn) deformities (10,000) Europe
- She averted medical catastrophe in US / hailed heroine
- 1962 Kefauver Harris Amendment act required drug efficacy/safety
- Distinguished Federal Civilian Service Award by John Kennedy



1914 - 2015



2021



2023



2024



Conclusion

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“the history of the world is but the biography of great men”
... and women



Thomas Carlyle
On Heroes 1841



“Once, I thought to write a history of the immigrants in America. Then, I discovered that the immigrants were American history”



Oscar Handlin
Pulitzer Prize
The Uprooted 1951



“Immigration policy should be generous; it should be fair; it should be flexible. With such a policy we can turn to the world, and to our own past, with clean hands and a clear conscience.”



John Kennedy

A Nation of Immigrants 1958



“if there had to be city walls the walls had doors and the doors are open to anyone with the will and the heart to get there.”



Ronald Reagan

Farwell Address to the Nation

Shinning City on the Hill 1989



“Preserving robust immigration policy is an essential ingredient for US national security and key to remaining competitive globally”



Tim Kane

The Immigrant Superpower 2021



While immigrants helped America achieve its greatness, immigrant physicians played significant but often overlooked role in founding and fostering the medical advances, innovations, and technologies that we all enjoy



Examining Immigrant-American Lives and Stories help us:

- Appreciate the true values of democracy, freedom, liberty and human rights that we enjoy today
- Understand our history
- Embrace diversity and inclusivity
- Know what it means to be Americans





Shari Moore, RN, BSN Conference Chair



Thank You

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