

Diseases Our Ancestors Died From and How Those Diseases Changes Our World

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Introduction

- Documents regarding our ancestor's deaths can be a great source of information for family research
- Many death records indicate the cause of death as well as vital information
- Our ancestor's world had many different challenges than ours especially in the diseases they had to face
- Understanding pre-mid 20thst century diseases will help us appreciate and understand the lives of our ancestors



R Cooper 1912: Welcome Collection



Outline of Our Discussion

- History of recording why we die and where to find that information
- Discuss several important diseases our ancestors faced
- Discuss how science and medicine has or will minimize the impact of these illness
- Discuss how these illness have changed the world we live in



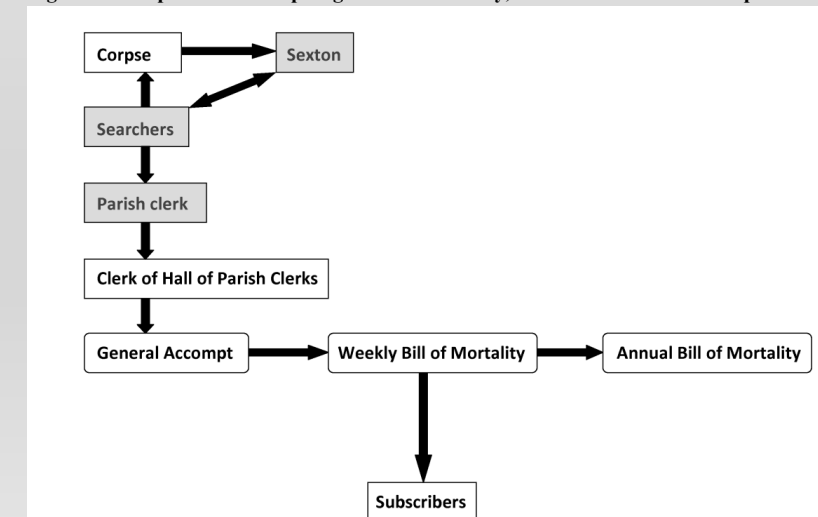
History of Recording Causes of Death



Recording of Death and It's Causes

- Records of birth, marriages, deaths, maintained by Christian churches
- Government officially got involved with recording individual death in France in 1792, England 1837, US 1850, and Italy 1865
- Earliest known documentation of causes of death were the Bills of Mortality in and around London in 1629
 - In 1532 Bills documented number of deaths by church parish
 - ***In 1629 causes of death added to Bills***
 - Published weekly with a yearly summary; individual subscriptions available!
 - Did not attach individual names to cause of death
 - Purpose: document location of cases of plague?

Figure 1: The process of compiling Bills of Mortality, based on Graunt's description



Kathryn Schultz. Final Forms. The New Yorker. April 7, 2014 Issue

Bills of mortality. Wikipedia. Wikipedia Foundation 23 April 2022. https://en.wikipedia.org/wiki/Bills_of_mortality

<https://www.campop.geog.cam.ac.uk/research/projects/epidemiologicaltransition/UrbanCausesOfDeath.pdf>

Family History Jeopardy: Name that Illness

Pre 20th Century Illness Name

- Consumption
- Ague
- Apoplexy
- Brain fever
- Childbed
- Dropsy
- Scrofula/Kings evil
- Grippe
- Phthisis

21st Century Illness Name

- Tuberculosis
- Malaria
- Stroke
- Meningitis
- Purpureal fever
- Heart failure/kidney disease
- Tuberculosis of neck lymph nodes
- Influenza
- Tuberculosis

<https://www.thornber.net/medicine/html/medgloss.html>  Great URL for old medical terms



Close up of Causes of Death for 1665 as Recorded in the BOM

- 1665 was a plague year in London
- Note the number of deaths from plague - **68,596**
- Note some of the diseases we discussed
 - Ague – 5257
 - Apoplexy – 116
 - Childbed - 625
 - Consumption and Tisick 4808
 - Dropsy – 1478
 - Rising of the light – 397
 - Teeth and worms - 2614
- *Only recorded deaths of upstanding member of the Church of England*

1665.

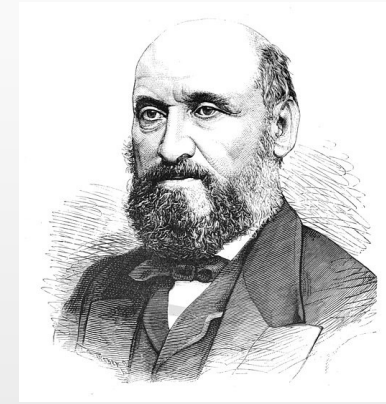
DISEASES and CASUALTIES.

A Bortive and Stillborn 617	Executed — — — 21	Overlaid and Starved — 45
Aged — — — 1545	Flox and Small Pox — 655	Palsy — — — 30
Ague and Fever — — 5257	Found dead in the Streets, } 20	Plague — — — 68596
Apoplexy and Suddenly — 116	Fields, &c. — }	Planet — — — 6
Bedrid — — — 10	French Pox — — — 86	Plurify — — — 15
Blasted — — — 5	Frighted — — — 23	Poisoned — — — 1
Bleeding — — — 16	Gout and Sciatica — 27	Quinsy — — — 35
Bloody Flux, Scowring, } 185	Grief — — — 46	Rickets — — — 557
and Flux — — — }	Griping in the Guts — — 1288	Rising of the Lights — 397
Burnt and Scalded — — 8	Hang'd and made away } 7	Rupture — — — 34
Calenture . — — — 3	themselves — — }	Scurvy — — — 105
Cancer, Gangrene, and } 56	Headmouldshot and }	Shingles and Swine Pox — 2
Fistula — — — }	Mouldfallen — — }	Sores, Ulcers, broken } 82
Canker and Thrush — 111	Jaundies — — — 110	and bruised Limbs }
Childbed — — — 625	Impossthume — — — 227	Spleen — — — 14
Chisomes and Infants — 1258	Kill'd by several Accidents 46	Spotted Fever and Purples 1929
Cold and Cough — — 68	King's Evil — — — 86	Stopping of the Stomach 332
Colick and Wind — — 134	Leprosy — — — 2	Stone and Strangury — 98
Consumption and Tisick 4808	Lethargy — — — 14	Surfeit — — — 1251
Convulsion and Mother — 2036	Livergrown — — — 20	Teeth and Worms — — 2614
Distracted — — — 5	Meagrim and Head-ach — 13	Vomiting — — — 51
Dropsy and Tympany — 1478	Measles — — — 7	Wen — — — 1
Drowned — — — 50	Murdered and Shot — — 9	

CHRISTENED { Males — 5114
 Females 4853
 In all — 9967 } BURIED { Males — 48569
 Females 48737
 In all — 97306 } Of the Plague 68596

Increased in the Burials in the 130 Parishes and at the Pest-house this Year 79009
 Increased of the Plague in the 130 Parishes and at the Pest-house this Year 68590

England Leads the Way



William Farr

- 1837 Death certificates first issued in England and generally included the deceased's full name, sex, occupation (for adults) or a parent's name (for children), as well as the death date and place, age at death, and **cause of death**.
- In 1853 William Farr developed system to categorize 139 causes of death (including teething). He also was a driving force in the epidemiology of death and dying and how that data could shape public health
- Farr's system used by the International Statistical Institute to develop an international classification of diseases (ICD)
 - ICD-1 published in 1900:191 disease
 - ICD-11 published in 2022:17,000 diseases

STATUTORY COPY OF AN ENTRY OF DEATH
1910
K 1496 - R62

Given at the GENERAL REGISTER OFFICE,
SOMERSET HOUSE, LONDON.

Application Number P.A. 3,32571/64/9

REGISTRATION DISTRICT BRADFORD YORKSHIRE								
1866 DEATH in the Sub-district of Idle in the County of York								
(1) When and where died	(2) Name and surname	(3) Sex	(4) Age	(5) Occupation	(6) Cause of death	(7) Signature, description, and residence of informant	(8) When registered	(9) Signature of registrar
Twentysixth June 1866 Stony Lane Eccleshill	John McLelland	Male	55 Years	Groom and Gardener	Phthisis Pulmonalis 4 months Certified	x the mark of Sarah Lee Present at death Stony Lane Eccleshill	Twentyninth June 1866	Matthew Balne Registrar

CERTIFIED to be a true copy of an entry in the certified copy of a Register of Deaths in the District above mentioned.
Given at the GENERAL REGISTER OFFICE, SOMERSET HOUSE, LONDON, under the Seal of the said Office, the 19th day of October 19 64.

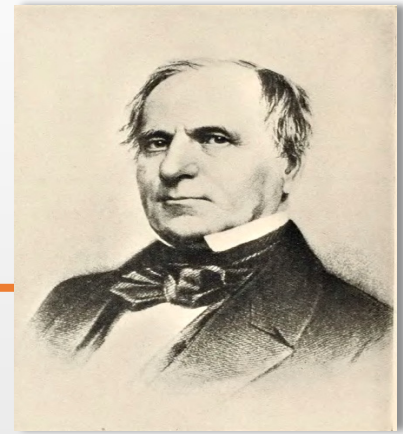
This certificate is issued in pursuance of the Births and Deaths Registration Act, 1953.
Section 34 provides that any certified copy of an entry purporting to be sealed or stamped with the seal of the General Register Office shall be received as evidence of the birth or death to which it relates without any further or other proof of the entry, and no certified copy purporting to be given in the said Office shall be of any force or effect unless it is sealed or stamped as aforesaid.

CAUTION.—Any person who (1) falsifies any of the particulars on this certificate, or (2) uses a falsified certificate as true, knowing it to be false, is liable to prosecution.

A 466892

-Musaed et al. Historical development of the statistical classification of causes of death and diseases, Cogent Medicine 2021, 8:1
-<https://www.familysearch.org/en/blog/england-death-records>

What Was Happening in the US?



Wm Shattuck

- 1841 Massachusetts first state to issue a form of death certificate
- In 1847 American Medical Association lobbied for a national effort to collect vital statistics including causes of death
 - Beginning in **1850**, **mortality schedules** collected at each 10-year US census
 - ***Deaths recorded June 1st in year before census until May 31st of census year***
 - Collected through 1900 with special census in 6 states in **1885**
 - Colorado, Florida, Nebraska, New Mexico, and the Dakotas
- Important information for family historian!
 - ***1890 mortality schedules & 1890 census data partially destroyed in a fire at Commerce Building in Washington, DC; undamaged files ordered destroyed in 1934***
 - ***1900 Mortality schedules ordered destroyed by congress with only 1900 Minnesota schedules available in Minnesota state archives***

Mortality Schedules

- Mortality schedules are an important beginning but have a restricted utility due to 10-year data interval; initially collected deaths of enslaved persons
- Mortality schedules may have encouraged states to collect death data ongoing in the form of **death or mortality registries**
- Death registries that followed the schedules are more likely to be useful to the family historian
 - **Kept by counties and states ongoing and have as much or more demographic information than the mortality schedules**
 - **Process appears to have started in the approximately 1880s in the US**

Mortality Schedule

SCHEDULE 2.—Persons who Died during the Year ending 1st June, 1870, in Springfield, in the County of Henry, State of Missouri, enumerated by me, Sam B Allen, Ass't Marshal.

Number of the Family, as given in the 2d column of Schedule 1.	Name of every person who died during the year ending June 1, 1870, whose place of abode at the time of death was in this family.	DESCRIPTION.			Married (M.) or Widowed (W.)	Place of Birth, naming the State or Territory of the U. S., or the country, if of foreign birth.	PARENTAGE.		The Month in which the person died.	Profession, Occupation, or Trade.	Disease or Cause of Death.
		Age last birth-day. If under one year, give months in fractions, as $\frac{1}{2}$.	Sex—Males (M.), Females (F.)	Color—White (W.), Black (B.), Mulatto (M.), Chinese (Ch.), Indian (I.)			Father of foreign birth.	Mother of foreign birth.			
1	2	3	4	5	6	7	8	9	10	11	12
1	277	Quincy John L	7	M	W	Missouri			Oct		Scrofula
2	286	Reup E. B.	13	M	W	Missouri			May		Dives
3	313	Pruder Mary	5	F	W	Indiana			June		Cholera ^{septica} Mosp.
4	317	Colo Cyntha	2	F	W	Missouri			Sept		Scrofula
5	322	Boyd Samuel	46	M	W	N. Carolina			Jan		Consumption
6	353	Barnett Ann	1	M	W	Missouri			Feb		Teething
7	352	James Reuben	5	M	W	Missouri			Feb		Dives

Census
household
number

Name

Age at death/Sex
Race/Marital Status

Place of
birth

Parents
Foreign
born

Mo of
death

Occupation

Cause of Death

Example Death Registry, King County, WA 1893

Register of Deaths in King

RECORD NO.	FULL NAME OF DECEASED.	DATE OF DEATH.			Age last birthday.	Male or female.	White, black, Indian, etc.	Married, single, widow, or widower.	PLACE OF DEATH.	DISEASE, OR CAUSE OF DEATH.
		MONTH.	DAY.	YEAR.						
325	Deymour Francis	July	6	1892	30	male	White	Single	Silman	Fracture of Skull
343	Deullin Ernest	"	22	"	2	"	"	"	Seattle	Drowned
344	Deymour Francis	"	7	"	30	"	"	"	Silman	Accidentally killed
348	Dimmons Susan	May	23	"	49	Female	"	married	Seattle	Valvular disease of heart
352	Dutton Edna O.	July	28	"	16 Mo.	"	"	"	"	Cholera Infantum
354	Dauborn N.	Aug	8	"	5	male	"	Single	South Seattle	Albuminuria
355	Schacht H. A.	"	4	"	1	Female	"	"	Seattle	Dysentery
364	Starkes Jas.	"	8	"	10	male	"	"	Kirkland	Drowned
377	Shurtz Edward	Aug	14	"	4	"	"	"	Tremont	Anaemia

County King State of Washington.

BIRTHPLACE, NAME OF STATE OR FOREIGN COUNTRY.	RESIDENCE.	OCCUPATION.	NAME OF FATHER.	BIRTHPLACE OF FATHER, NAME OF STATE OR FOREIGN COUNTRY.	MAIDEN NAME OF MOTHER.	BIRTHPLACE OF MOTHER, NAME OF STATE OR FOREIGN COUNTRY.	BY WHOM RETURNED.
Germany	Seely	Timberman		Germany		Germany	Dorton Geo. M.
Ohio	Seattle	Labourer		Virginia	Can say	Virginia	"
Prussia	"	Housewife	Detzler John.				Chapman J. B.
							Pharphie C. W.
		Labourer					Dorton Geo. M.
Conn.	Seattle Wash.	Steamboat Capt.					Neills G. S.
Texas	Blk. Diamond		Salvini C.	Italy	Mary Nicolitti	Italy	Stone D. M.
London	Yew Wash.	Housewife	Johnson Jacob	Sweden		Sweden	Chase P. L.
Iceland	Seattle	Domestic					Dorton Geo. M.

- Name
- Date of Death
- Age/sex/race/marital status
- Place of death
- Cause of death
- Place of birth
- Residence
- Occupation
- Name of parents/place of birth
- Reporter

New Hampshire 1889

Richmond,
Virginia 1887

Examples of Death Registries Around US Ancestry.com

Pittsburg, Penn
1888

Note line on contributing causes!

1.	Full Name of Deceased,		<i>Henry Kirkpatrick</i>			
2.	Color, (Race, if not white,)		<i>White</i>			
3.	Sex,		<i>Male</i>			
4.	Age,		<i>70</i>	Years,	Months,	Days.
5.	Married, Single, Widow, or Widower,		<i>Married</i>			
6.	Occupation,		<i>Book Keeper</i>			
7.	Date of Death,		<i>May 9th</i> 188 <i>8</i>			
8.	Cause of Death,	{ Primary, or Chief and Determining, Secondary, or Consecutive and Contributing,	<i>Softening of the Brain Apoplexy</i>			
9.	Duration of last illness,					
10.	When a Minor,	{ Name of Father, Name of Mother,				
11.	Birthplace,		<i>Pittsburgh</i>			
12.	Late Residence,	No.	<i>67- Mahon</i>	Avenue, Street,	<i>13th</i>	Ward.
13.	Time of Residence therein.		<i>7</i>	Years,	Months,	Days.
14.	Place of Previous Residence,		<i>2nd Ave City</i>			
15.	Place of Interment,		<i>Allegheny</i>			
16.	Date of Interment,		<i>May 11th</i> 188 <i>8</i>			
17.	Name of Physician or other Person signing Certificate,		<i>J M Lee</i> M. D.			
18.	His Residence,	No.	<i>173 Centre</i>	Avenue, Street,	<i>11th</i>	Ward.
19.	Undertaker,		<i>L Bienbauer and Son</i>			
20.	His Residence,	No.	<i>520 Grant</i>	Avenue, Street,	<i>5th</i>	Ward.
21.	Date of Certificate,		<i>May 10th</i> 188 <i>8</i>			
22.	Date of Registration,		<i>June 6th</i> 188 <i>8</i>			

Death Certificates: Into the Modern Era of Death Reporting

Date States Required Universal Death Certificates

State and Date		State and Date		State and Date		State and Date		State and Date	
Alabama	1908	Idaho	1911	Michigan	1867	New York	1880	Tennessee	1908
Alaska	1913	Illinois	1916	Minnesota	1908	North Carolina	1913	Texas	1903
Arkansas	1914	Indiana	1899	Mississippi	1912	North Dakota	1907	Utah	1905
California	1905	Iowa	1880	Missouri	1910	Ohio	1908	Vermont	1857
Colorado	1907	Kansas	1911	Montana	1907	Oklahoma	1908	Virginia	1853
Connecticut	1897	Kentucky	1911	Nebraska	1905	Oregon	1903	Washington	1907
Delaware	1881	Louisiana	1914	Nevada	1911	Pennsylvania	1906	West Virginia	1917
Florida	1899	Maine	1892	New Hampshire	1901	Rhode Island.	1853	Wisconsin	1907
Georgia	1919	Maryland	1898	New Jersey	1848	South Carolina	1915	Wyoming	1909
Hawaii	1859	Massachusetts	1841	New Mexico	1920	South Dakota	1905	Arizona	1909

What About Death Certificates and HIPPA?

- This question came up last year regarding HIPPA and death certificates.
- In general, HIPPA protects deceased persons health records including death certificates that contain cause of death for **50 years**
 - **Some states are rigorous in limiting death certificates to close family members or legal representative**
 - **Some states like Alabama the timing is shorter i.e. 25 years**
 - **Some states like Washington are open record states and anybody can access death certificates if digitized online**

Family History Jeopardy: Name that Illness

Modern Medical Terminology

- Cerebrovascular accident (CVA)
- Myocardial infarction
- Coronary artery disease
- Pulmonary embolism
- Pulmonary edema
- Sepsis
- **Peritonitis**
- Hepatitis
- COPD

Translation

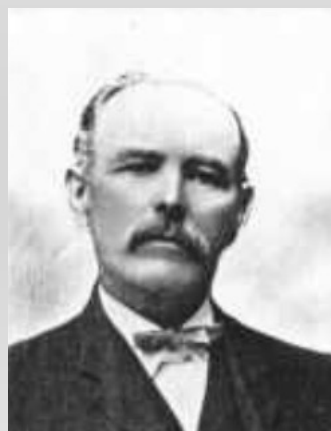
- Stroke
- Heart attack
- Angina/heart attack
- Blood clot in the lungs
- Fluid in the lungs
- Bacterial infection in the blood
- Infection of the abdominal cavity
- Inflammation of the liver
- Chronic obstructive pulmonary disease



Example of Early Version of US Death Certificate

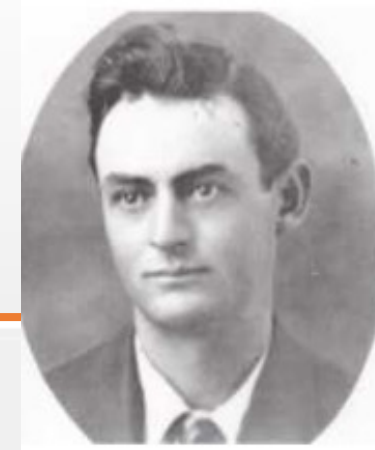
- Demographics including occupation
- Informant (daughter, Olive)
- Immediate cause of death
- Contributing causes may be more important
- Note famous father

Note: young people may need to have their boomer grandparents interpret the cursive writing



PLACE OF DEATH			STATE BOARD OF HEALTH FILE NO. 164 630	
County	Utah	Moroni	L. Pratt	
Township				
Village or City	Provo	(No. 260 E. 2nd St.; 1st Ward)		
2 FULL NAME Moroni S. Pratt				
PERSONAL AND STATISTICAL PARTICULARS			MEDICAL CERTIFICATE OF DEATH	
3 SEX Male	4 COLOR OR RACE White	5 SINGLE MARRIED WIDOWED OR DIVORCED Widower	10 DATE OF DEATH April 8, 1913	
6 DATE OF BIRTH December 7, 1844			17 I HEREBY CERTIFY, That I attended, deceased from July 1, 1913, to April 8, 1913.	
7 AGE 68 yrs. 4 mos. 1 ds.			that I last saw him alive on April 8, 1913, and that death occurred, on the date stated above, at 4 P.M.	
8 OCCUPATION (a) Trade, profession or particular kind of work Fence Manufacturer			The CAUSE OF DEATH* was as follows: Cancer of Stomach	
9 BIRTHPLACE (State or country) Illinois			Contributory No other cause known	
PARENTS	10 NAME OF FATHER Parley P. Pratt		(Signed) Fred W. Taylor M.D.	
	11 BIRTHPLACE OF FATHER (State or country) New York		May 7, 1913 (Address) Provo, Utah	
	12 MAIDEN NAME OF MOTHER Mary Ann Foster		* State the DISEASE CAUSING DEATH, or, in deaths from VIOLENT CAUSES, state (1) MEANS OF INJURY; and (2) whether ACCIDENTAL, SUICIDAL OR HOMICIDAL.	
13 BIRTHPLACE OF MOTHER (State or country) Maine		18 LENGTH OF RESIDENCE (For Hospitals, Institutions, Transients, OR RECENT RESIDENTS) At place of death 4 yrs. 4 mos. 1 ds. In the State yrs. mos. ds.		
14 THE ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE (Informant) Mrs. Andrew Andrew (Address) Provo, Utah				
15 Filed April 10, 1913 R. Merrill M. REGISTRAR				
21 REGISTERED NUMBER 58		23 NO. OF BURIAL PERMIT		
19 PERCE OF BURIAL OR REMOVAL Provo, Utah			DATE OF BURIAL April 11, 1913	
20 UNDERTAKER O. H. Bigelow			ADDRESS Provo	
READ CAREFULLY INSTRUCTIONS ON BACK OF CERTIFICATE				

Indexed Data on My Paternal Grandfather's Death Certificate From Family Search



- *Indexed data on major family history sites **does not** include causes of death or health information*
- *If you want to know cause of death look at accompanying DC image*

Charles Frederick Gardner

Arizona Deaths, 1870-1951

Name:	Charles Frederick Gardner • Edit
Sex:	Male
Sex:	M
Age:	64
Age:	64y 10m 9d
Birth Year (Estimated):	1887
Death Date:	20 Mar 1951
Death Date:	20 Mar 1951
Death Place:	Douglas, Cochise, Arizona, United States
Father's Name:	Charles Frederick Gardner
Mother's Name:	Amelia Anderson
Record Number:	43

But Luckily the Actual DC is Available!

- Note the usual demographics
- Look for the informant
 - **If second degree relative, confirm birthdate and name sequence**
- Cause of death
 - Immediate cause
 - **Antecedent causes more important to develop family health portrait**
 - **There is no sequence to cause of death**
- Other significant conditions is blank

ARIZONA STATE DEPARTMENT OF HEALTH DIVISION OF VITAL STATISTICS				STATE FILE NO. 1298	
CERTIFICATE OF DEATH				REGISTRAR'S NO. 49	
1. PLACE OF DEATH A. COUNTY Cochise		2. USUAL RESIDENCE (WHERE DECEASED LIVED, IF INSTITUTION; RESIDENCE BEFORE ADMISSION) A. STATE Arizona B. Cochise			
B. CITY (IF OUTSIDE CORPORATE LIMITS, WRITE OR TOWN Douglas)		C. LENGTH OF STAY IN THIS PLACE IN ARIZONA 20 min. 64yr.		C. CITY (IF OUTSIDE CORPORATE LIMITS, WRITE OR TOWN Elfrida)	
D. FULL NAME OF (IF NOT IN HOSPITAL OR INSTITUTION, ADDRESS OR LOCATION) Douglas, Hospital		D. STREET ADDRESS (IF RURAL, GIVE LOCATION)			
3. NAME OF DECEASED (TYPE OR PRINT) A. (FIRST) Charles B. (MIDDLE) Frederick C. (LAST) Gardner		4. SEX Male		5. COLOR OR RACE White	
6. MARRIED <input checked="" type="checkbox"/> NEVER MARRIED <input type="checkbox"/> WIDOWED <input type="checkbox"/> DIVORCED <input type="checkbox"/>		7. DATE OF BIRTH MONTH May DAY 11 YEAR 1886		8. AGE YEARS 64 MONTHS 10 DAYS 9	
9B. KIND OF BUSINESS OR INDUSTRY		10. BIRTHPLACE (STATE OR FOREIGN COUNTRY) Arizona		11. CITIZEN OF WHAT COUNTRY? U. S.	
12. WAS DECEASED EVER IN U. S. ARMED FORCES? (YES, NO, OR UNKNOWN) (IF YES, WAR OR DATES OF SERVICE) No		13. SOCIAL SECURITY NO.		14A. FATHER'S NAME Charles Frederick Gardner	
14B. BIRTHPLACE (STATE OR COUNTRY) Utah		15A. MOTHER'S MAIDEN NAME Amelia Anderson		15B. BIRTHPLACE (STATE OR COUNTRY) Utah	
16. INFORMANT'S SIGNATURE Charles E. Gardner & D. J. ...		17. DATE OF DEATH MONTH March DAY 20 YEAR 1951		18. CAUSE OF DEATH ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), (c). (a) Acute Coronary Thrombosis (b) 30 minutes (c) 30 minutes	
19A. DATE OF OPERATION		19B. MAJOR FINDINGS OF OPERATION		20. AUTOPSY? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
21A. ACCIDENT SUICIDE HOMICIDE (SPECIFY)		21B. PLACE OF INJURY (E. G., IN OR ABOUT HOME, FARM, FACTORY, STREET, OFFICE BLDG., ETC.)		21C. (CITY OR TOWN) (COUNTY) (STATE)	
21D. TIME (MONTH) (DAY) (YEAR) (HOUR) OF INJURY		21E. INJURY OCCURRED WHILE AT WORK <input type="checkbox"/> NOT WHILE AT WORK <input type="checkbox"/>		21F. HOW DID INJURY OCCUR?	
22. I HEREBY CERTIFY THAT I ATTENDED THE DECEASED FROM Mar 3 1951 TO March 20 1951 . THAT I LAST SAW THE DECEASED ALIVE ON Mar 20 1951 AND THAT DEATH OCCURRED AT 12:30 P. M. FROM THE CAUSES AND ON THE DATE STATED ABOVE.					
23A. SIGNATURE E. E. Ramsey (DEGREE OR TITLE) med		23B. ADDRESS Douglas Ariz		23C. DATE SIGNED 3-21-51	
24A. BURIAL <input checked="" type="checkbox"/> CREMATION <input type="checkbox"/> REMOVAL <input type="checkbox"/>		24B. DATE March 23, 1951		24C. NAME OF CEMETERY OR CREMATORY White water	
24D. LOCATION (CITY, TOWN, OR COUNTY) (STATE) Elfrida, Arizona		25A. DATE REC'D BY LOCAL REG. Mar. 24-51		25B. REGISTRAR'S SIGNATURE E. E. Ramsey	
25C. FUNERAL DIRECTOR'S SIGNATURE Charles J. ...		25D. ADDRESS Douglas Ariz		25E. CERT. NO. 327	

Thoughtfully Completed Death Certificate

- Look at the well described sequence of events that lead to the final cause of death (pulmonary edema)
- The MD also included other medical issues (COPD)
- Medical profession has come under criticism for not filling certificates properly**
- Current certificates have 3 pages of instructions and an example of doing it right

Washington State Digital Archives

STATE OF WASHINGTON DEPARTMENT OF SOCIAL AND HEALTH SERVICES VITAL RECORDS CERTIFICATE OF DEATH		3 19718
LOCAL FILE NUMBER 767		STATE FILE NUMBER 146-8
9. COUNTY OF DEATH Clark		
10. CITY, TOWN OR LOCATION OF DEATH Vancouver		11. PLACE OF DEATH - <input checked="" type="checkbox"/> BOX FOR PLACE THEN GIVE ADDRESS OR INSTITUTION NAME 0. <input type="checkbox"/> HOME 2. <input type="checkbox"/> IN TRANSPORT 3. <input type="checkbox"/> EMERG RM/OUT PTN 4. <input checked="" type="checkbox"/> HOSP 5. <input type="checkbox"/> NUR HOME 1. <input type="checkbox"/> OTHER PLACE St. Joseph's Community Hospital
12. RECEIVED EMERGENCY CARE AMBULANCE, FIREFTR, PARAMED? No YES/NO		
13. BIRTH STATE (IF NOT IN USA GIVE COUNTRY) North Carolina U. S. A.		14. CITIZEN OF WHAT COUNTRY U. S. A.
15. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED Widowed		16. SPOUSE (IF WIFE GIVE MAIDEN NAME) -----
17. WAS DECEDENT EVER IN U.S. ARMED FORCES? (YES/NO) Yes		
18. SOCIAL SECURITY NO 538 10 7298		19. USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE EVEN IF RETIRED.) naval yards
20. KIND OF BUSINESS OR INDUSTRY naval yards		
21. RESIDENCE - NUMBER AND STREET 2806 R Street		22. CITY/TOWN OR LOCATION Vancouver
23. INSIDE CITY LIMITS? (YES/NO) Yes		24. COUNTY Clark
25. STATE Washington		
26. CITY/TOWN OR LOCATION Vancouver		
27. INSIDE CITY LIMITS? (YES/NO) Yes		
28. COUNTY Clark		
29. STATE Washington		
30. BURIAL, CREMATION, REMOVAL, OTHER (SPECIFY) Burial		
31. DATE (MO DAY YR) Aug. 8, 1983		
32. CEMETERY/CREMATORY - NAME Willamette Nat'l Cemetery		
33. LOCATION - CITY/TOWN, STATE Portland, OR		
34. FUNERAL DIRECTOR SIGNATURE X <i>M. N. Staples</i>		
35. NAME OF FACILITY Evergreen Staples Funeral C.		
36. ADDRESS OF FACILITY 4700 St. Johns Road Vancouver, Wn. 98661		
TO BE COMPLETED ONLY BY CERTIFYING PHYSICIAN		
37. TO THE BEST OF MY KNOWLEDGE, DEATH OCCURRED AT THE TIME, DATE, AND PLACE AND DUE TO THE CAUSE(S) STATED		
SIGNATURE AND TITLE X <i>Charles Plamp III M.D.</i>		
38. DATE SIGNED (MO DAY YR) 8/8/83		
39. HOUR OF DEATH (24 HRS) 1915		
40. NAME AND TITLE OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (TYPE OR PRINT) Charles Plamp, M.D., 700 N. E. 87th Ave. Vancouver, WA 98664		
41. ON THE BASIS OF EXAMINATION AND/OR INVESTIGATION, IN MY OPINION DEATH OCCURRED AT THE TIME, DATE AND PLACE AND DUE TO THE CAUSE(S) STATED		
SIGNATURE AND TITLE X		
42. DATE SIGNED (MO DAY YR)		
43. HOUR OF DEATH (24 HRS)		
44. PRONOUNCED DEAD (MO DAY YR)		
45. HOUR PRONOUNCED DEAD (24 HRS)		
46. NAME AND ADDRESS OF CERTIFIER - PHYSICIAN, MEDICAL EXAMINER OR CORONER (TYPE OR PRINT) Charles Plamp, M.D., 700 N. E. 87th Ave. Vancouver, WA 98664		
47. IMMEDIATE CAUSE ENTER ONLY ONE CAUSE PER LINE FOR (A), (B) and (C)		
(A) <i>Pulmonary Edema</i>		
(B) <i>Congestive Heart Failure</i>		
(C) <i>Chronic Renal Failure</i>		
48. OTHER SIGNIFICANT CONDITIONS-CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN ABOVE <i>Chronic Obstructive Pulmonary Disease</i>		
49. AUTOPSY? (YES/NO) No		
50. WAS CASE REFERRED TO MEDICAL EXAMINER OR CORONER? (YES/NO) No		
51. ACC. SUICIDE, HOMICIDE, UNDET. OR PENDING INVEST. (SPECIFY)		
52. INJURY DATE (MO DAY YR)		
53. HOUR OF INJURY (24 HRS)		
54. DESCRIBE HOW INJURY OCCURRED		
55. INJURY AT WORK? (YES/NO)		
56. PLACE OF INJURY - AT HOME, FARM, STREET, FACTORY, OFFICE BLDG. ETC. (SPECIFY)		
57. LOCATION - STREET OR RFD NO., CITY/TOWN, STATE		
58. REGISTRAR SIGNATURE X <i>Mark L. Rountree</i>		
59. DATE RECEIVED (MO DAY YR) AUG 9 1983		
FOR STATE REGISTRAR USE ONLY		

Example of why a glance at original death certificate can help you understand a relative's life

Looking at original 1910 census data document rather than digitized information further added to his story

What does the 77 on the DC mean?

FORM NO. 12

MARGIN RESERVED FOR BINDING

N. B.—WRITE PLAINLY, WITH UNFADING INK (WRITING FLUID)—THIS IS A PERMANENT RECORD. EVERY ITEM OF INFORMATION SHOULD BE CAREFULLY SUPPLIED. AGE SHOULD BE STATED EXACTLY. PHYSICIANS SHOULD STATE THE CAUSE OF DEATH IN PLAIN TERMS, SO THAT IT MAY BE PROPERLY CLASSIFIED. EXACT STATEMENT OF OCCUPATION IS VERY IMPORTANT.

1 PLACE OF DEATH
COUNTY OF Smyth
MAGISTERIAL DISTRICT OF _____
OR
INC. TOWN OF Marion
OR
CITY OF _____
(If death occurred in a hospital or other institution, give its NAME instead of street and number)

CERTIFICATE OF DEATH
COMMONWEALTH OF VIRGINIA
BUREAU OF VITAL STATISTICS
STATE BOARD OF HEALTH

23031

REGISTRATION DISTRICT NO. 860A REGISTERED NO. 93
(TO BE INSERTED BY REGISTRAR) (FOR USE OF LOCAL REGISTRAR)

2 FULL NAME William F. Morgan
(A) RESIDENCE, No. Floyd V² ST. _____ WARD. _____
(Usual place of abode)
Length of residence in city or town where death occurred yrs. mos. ds. How long in U. S., if of foreign birth? yrs. mos. ds.

PERSONAL AND STATISTICAL PARTICULARS

3 SEX Male 4 COLOR OR RACE White 5 SINGLE, MARRIED, WIDOWED, OR DIVORCED (write the word) Single

5A IF MARRIED, WIDOWED, OR DIVORCED HUSBAND OF (OR) WIFE OF _____

6 DATE OF BIRTH (MONTH, DAY, AND YEAR, WRITE NAME OF MONTH) 1867 19 _____

7 AGE YEARS 55 MONTHS _____ DAYS _____ IF LESS THAN 1 DAY, _____ HRS. OR _____ MIN.

8 OCCUPATION OF DECEASED
(A) TRADE, PROFESSION, OR PARTICULAR KIND OF WORK none
(B) GENERAL NATURE OF INDUSTRY, BUSINESS, OR ESTABLISHMENT IN WHICH EMPLOYED (OR EMPLOYER) _____
(C) NAME OF EMPLOYER _____

9 BIRTHPLACE
(CITY OR TOWN) _____
(STATE OR COUNTRY) Virginia

10 NAME OF FATHER _____

11 BIRTHPLACE OF FATHER
(CITY OR TOWN) not known
(STATE OR COUNTRY) _____

12 MAIDEN NAME OF MOTHER not known

13 BIRTHPLACE OF MOTHER
(CITY OR TOWN) not known
(STATE OR COUNTRY) _____

14 INFORMANT State Hospital
(ADDRESS) Marion V²

15 FILED 10-94 19 22 R. J. Lher
REGISTRAR

MEDICAL CERTIFICATE OF DEATH

16 DATE OF DEATH (MONTH, DAY, AND YEAR, WRITE NAME OF MONTH) Oct. 25 19 22

17 I HEREBY CERTIFY, THAT I ATTENDED DECEASED FROM May 8 19 22 TO Oct. 24 19 22
THAT I LAST SAW HIM ALIVE ON Oct. 24 19 22

AND THAT DEATH OCCURRED, ON DATE STATED ABOVE, AT 4 a. M.
THE CAUSE OF DEATH* WAS AS FOLLOWS:
 Convulsion - caused by
 manic depressive insanity.
 77
(DURATION) 17 YRS. _____ MOS. _____ DS. _____

CONTRIBUTORY (SECONDARY) _____ (DURATION) _____ YRS. _____ MOS. _____ DS. _____

18 WHERE WAS DISEASE CONTRACTED Floyd V²
IF NOT AT PLACE OF DEATH? _____

DID AN OPERATION PRECEDE DEATH? no DATE OF _____

WAS THERE AN AUTOPSY? no

WHAT TEST CONFIRMED DIAGNOSIS? V
(SIGNED) James F. Gray M. D.
 Oct 25 1922 (ADDRESS) Marion V²

*State the DISEASE CAUSING DEATH, or in deaths from VIOLENT CAUSES, state (1) MEANS AND NATURE OF INJURY, and (2) whether ACCIDENTAL, SUICIDAL, or HOMICIDAL.

19 PLACE OF BURIAL, CREMATION, OR RE-MOVAL Floyd V² DATE OF BURIAL Oct 25 1922

20 UNDERTAKER M. M. Seaman
ADDRESS _____

910 - Smyth County, Virginia: Smyth. Census 1910

DEPARTMENT OF
THIRTEENTH CENSUS

DIVISION OF COUNTY
[Insert proper name and, also, name of class, as township, town, precinct, district, hundred, beat, etc. See instructions.]

OF INSTITUTION Southwestern State Hospital
[Insert name of institution, if any, and indicate the lines on which the entries are made. See instructions.]

NAME	RELATION.	PERSONAL DESCRIPTION							Place of birth of each person give the	
of each person whose place of abode on April 15, 1910, was in this family.	Relationship of this person to the head of the family.	Sex.	Color or race.	Age at last birth-day.	Whether single, married, widowed, or divorced.	Number of years of present marriage.	Mother of how many children.		Place of birth of this Person	
Enter surname first, then the given name and middle initial, if any.							Number born.	Number now living.		
Include every person living on April 15, 1910. Omit children born since April 15, 1910.										
3	4	5	6	7	8	9	10	11	12	
McGaster, Samuel M.	↑	M	W	46	M				Virginia	
Mallory, Elijah		M	W	35	M				North Carolina	
Maxwell, Arthur		M	W	17	S				Virginia	
McKnight, Roy A.		M	W	24	D.				Tennessee	
Miller, William M.		M	W	27	S				Virginia	
McGath, George		M	W	57	S				Virginia	
McSpadden, Charles C.		M	W	20	S				Virginia	
McCracken, W. L.		M	W	73	W				North Carolina	
McNeeley, J. C.		M	W	44	S				North Carolina	
Morgan, William R.		M	W	42	S				Virginia	
Mellon, Currie C.		M	W	35	S				Virginia	



Harry Houdini's Death Certificate: What Do the Numbers Mean?

- Harry Houdini (AKA Erik Weisz) famous as an escape artist
- Died October 1926 of diffuse Streptococcal peritonitis due to a ruptured appendix
- **Note the numbers next to the medical diagnoses**
- ICD 3 1920 (205 diagnoses)
 - 90 - heart disease
 - 117 - appendicitis
 - 126 - peritonitis
- Heart disease age 52 useful health information for family



1 PLACE OF DEATH
County.....Wayne.....
Township.....
Village.....
City.....Detroit.....

MICHIGAN DEPARTMENT OF HEALTH
Division of Vital Statistics
CERTIFICATE OF DEATH

out
58274757
Register No. 14890

(No. Grace Hospital St. Ward)
(If death occurred in a hospital or institution, give its NAME instead of street and number)

2 FULL NAME.....Harry Houdini.....
(Usual place of abode) New York City St. Ward
Length of residence in city or town where death occurred yrs. mos. 7 ds. (If non-resident give city or town and state) yrs. mos. ds.

PERSONAL AND STATISTICAL PARTICULARS

3 SEX Male 4 Color or Race White 5 Single, Married, Widowed or Divorced (Write the word) Married

6a If married, widowed or divorced HUSBAND of (or) WIFE of Beatrice Rahner

6 DATE OF BIRTH (Month, day and year) April 6, 1874.

7 AGE Years Months Days If LESS than 1 day...hrs. OR...min.
52 6 25

8 OCCUPATION OF DECEASED
(a) Trade, profession or particular kind of work Actor & Lecturer
(b) General nature of industry, business, or establishment in which employed (or employer)
(c) Name of employer.

9 BIRTHPLACE (city or town) (state or country) Appleton, Wisconsin

PARENTS

10 NAME OF FATHER Samuel Mayer

11 BIRTHPLACE OF FATHER (city or town) (state or country) Unknown

12 MAIDEN NAME OF MOTHER Cecilia Steiner

13 BIRTHPLACE OF MOTHER (city or town) (state or country) Unknown

14 Informant Theodore Hardeen
(Address) 537 N. 21st Street Brooklyn

15 Filed....., 192..... Registrar.

MEDICAL CERTIFICATE OF DEATH

16 DATE OF DEATH (Month, day and year) Oct. 31, 1926 192

17 I HEREBY CERTIFY, That I attended deceased from Oct. 25, 1926 to Oct. 31, 1926 that I last saw him alive on Oct. 31, 1926 and that death occurred on the date stated above at 1:30 p.m.

The CAUSE OF DEATH* was as follows:
Diffuse peritonitis
Streptococci

CONTRIBUTORY (Secondary) Ruptured Appendix
117
90
126

18 Where was disease contracted? Montreal
If not at place of death? Yes Date of... 10/25/26

Did an operation precede death? Yes Date of... 10/25/26

Was there an autopsy? No

What test confirmed diagnosis? Operation

(Signed) Chas. S. Kennedy, M.D.
Nov 1, 1926 Address 10 Peter Ave.

*State the Disease Causing Death, or in deaths from Violent Causes, state (1) Means and Nature of Injury, and (2) whether Accidental, Suicidal, or Homicidal.
(See reverse side for further instructions.) 2015

19 PLACE OF BURIAL, CREMATION, OR REMOVAL
New York City
Date of Burial 10/1/26

20 UNDERTAKER
William R. Hamilton Co.
Address Detroit

<http://www.wolfbane.com/icd/icd3h.htm>

Finding Death Records

- Most major family history sites have access to this data; place to start would be Family Search Wiki although **Ancestry.com** seems to have the largest collection of data
 - https://www.familysearch.org/en/wiki/How_to_Find_United_States_Death_Records
- Also search for mortality schedules by individual states example Florida. Can also look at CDC site to where mortality schedules may be located
 - https://www.floridamemory.com/discover/historical_records/mortality-schedules/
 - https://www.census.gov/history/www/genealogy/other_resources/mortality_schedules.html
- Good site for death records in general
 - <https://www.germanroots.com/deathrecords.html>
- For death certificates check out
 - <http://www.cdc.gov/nchs/howto/w2w/w2welcom.htm>
- Also try search for state of interest and put in death certificates or vital statistics
- Consider putting family death records on your favorite family history site for future generations; look at <https://cbiit.github.io/FHH/html/index.html> to create a family health portrait

Diseases that Were Part of Our Ancestors World

Ferry on Banbridge Island



Common Causes of Death and Childhood Mortality pre-20th Century

1. Infections

- Tuberculosis
- Smallpox
- Influenza
- Malaria
- Typhus
- Cholera
- Dysentery
- Yellow Fever
- Puerperal fever

2. Workplace injury

3. War - combat and disease

4. Malnutrition - i.e scurvy

Our World in Data World population by level of child mortality rate over time (1800-2013) – By Max Roser

The child mortality rate is the share of children born alive dying before reaching the age of 5.

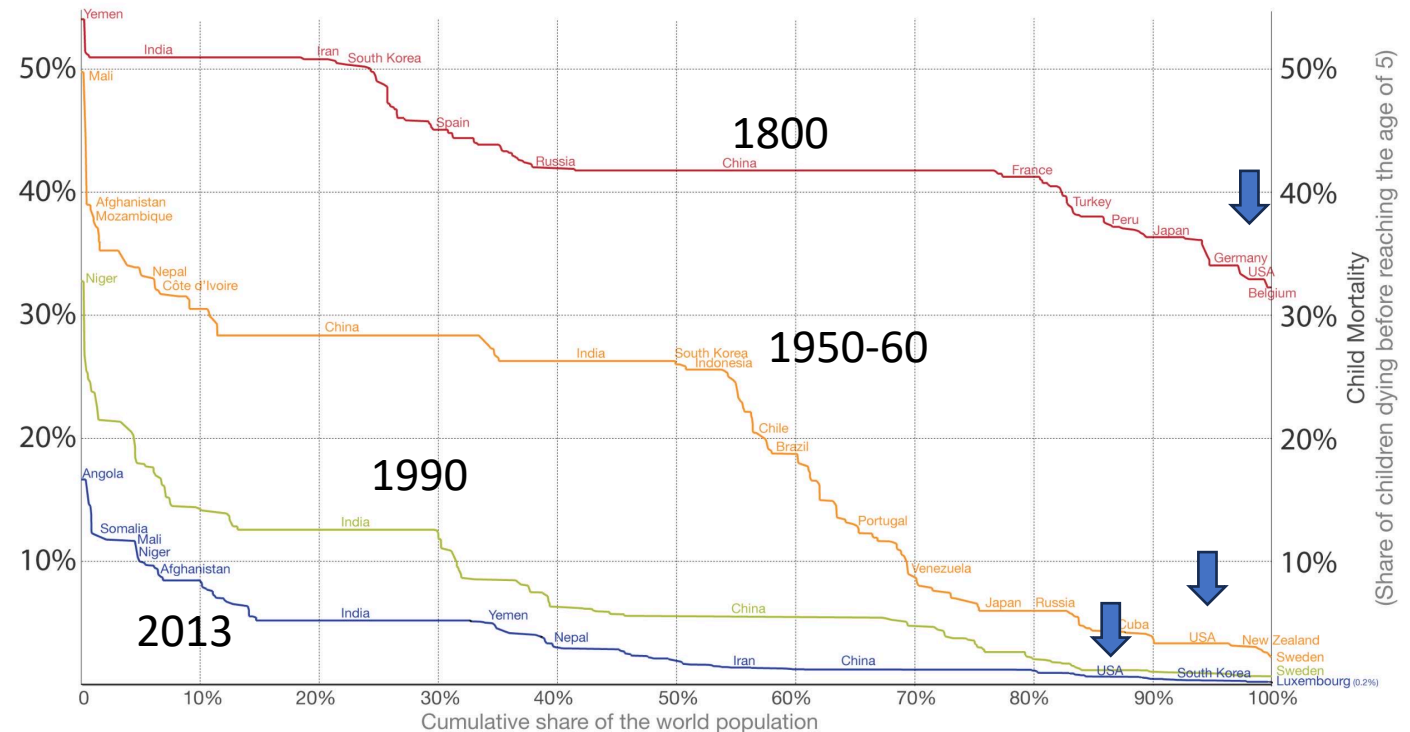
How to read this chart: On the x-axis you find the cumulative share of the world population. The countries are ordered along the x-axis descending by the child mortality rate of the country. You can see the child mortality for all countries in the world. Some – but not all – countries are labelled.

The 4 colored lines refer to the following 4 different points in time:

1800 (estimates)
1950-60
1990
2013

Global average child mortality rate:

1800: 43.3%
1950-60: 19.5%
1990: 7.4%
2013: 3.4%



Data source: Gapminder.org. Gapminder used childmortality.org, mortality.org, and other sources.

The interactive data visualization is available at [OurWorldinData.org](https://ourworldindata.org). There you find the raw data and more visualizations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

Life Expectancy by Year

<https://ourworldindata.org/grapher/life-expectancy?time=1593..latest&facet=none&country=FIN~GBR~USA>

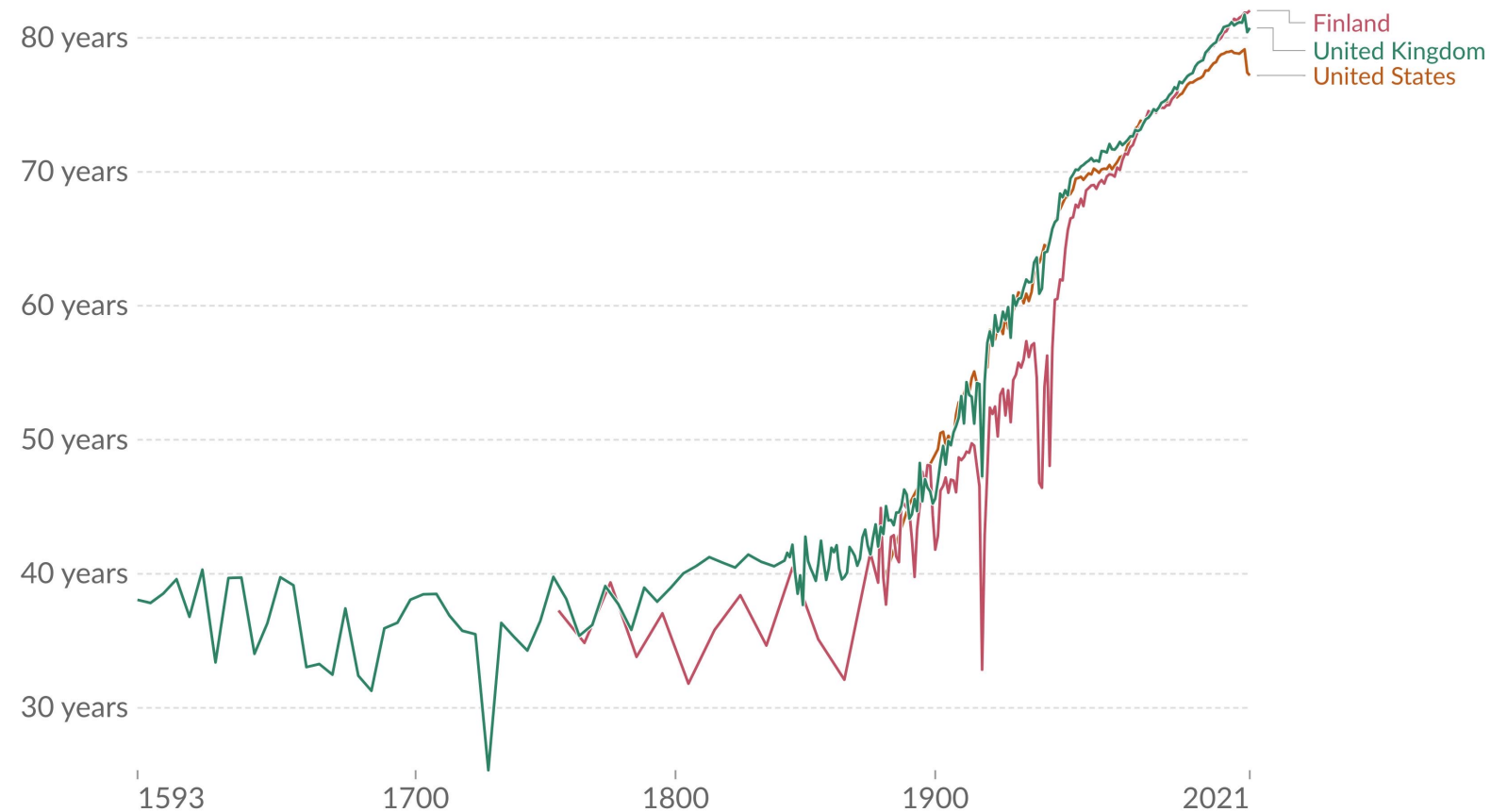
What made the difference?

- Public health mid 1800's
- Germ theory of disease
- Sanitation/clean water access
- Epidemiology of disease
- Pasteurization
- Antibiotics
- Vaccines

Life expectancy, 1593 to 2021

The period life expectancy¹ of the population in a given year.

Our World
in Data



Data source: UN WPP (2022); HMD (2023); Zijdeman et al. (2015); Riley (2005)

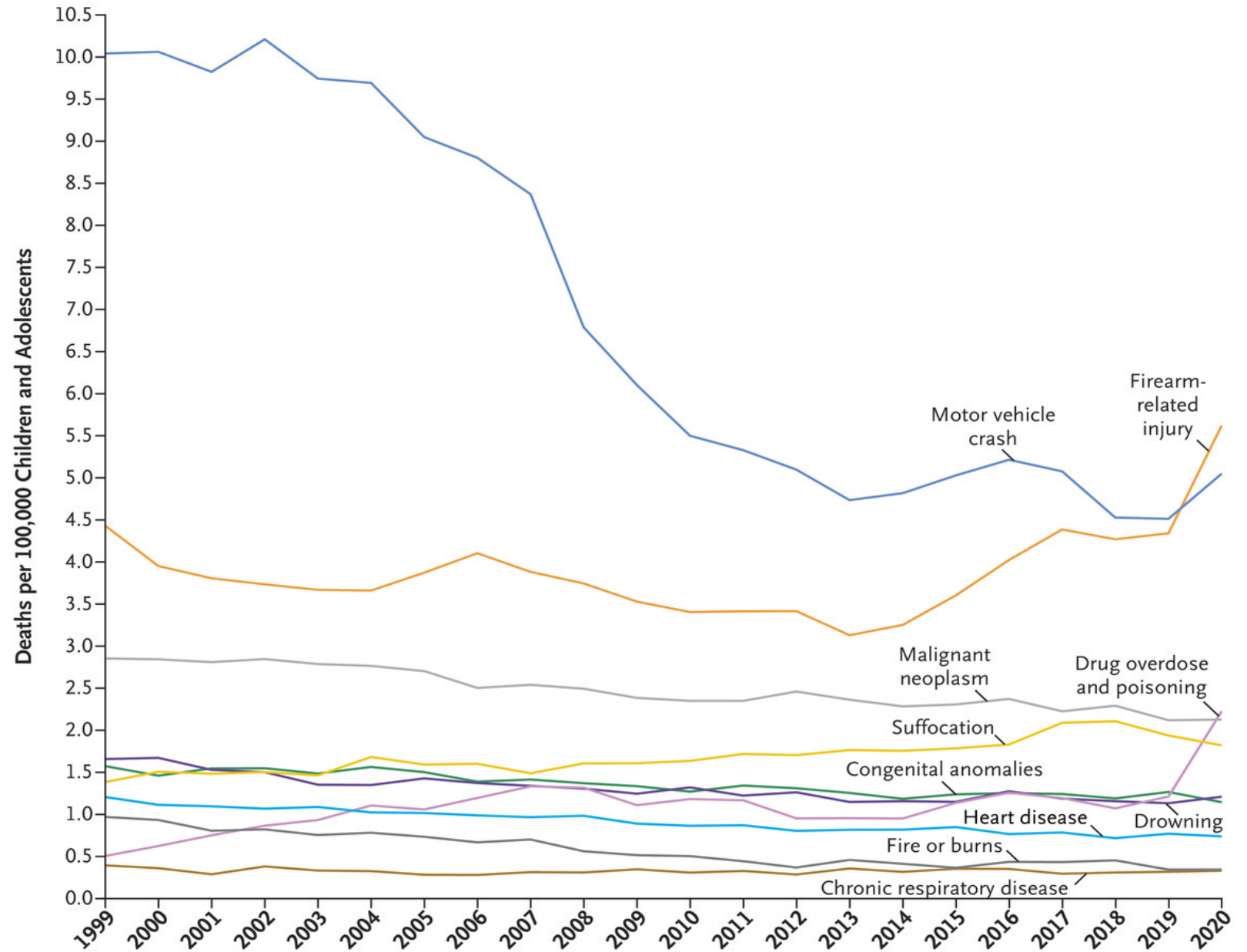
OurWorldInData.org/life-expectancy | CC BY

1. Period life expectancy: Period life expectancy is a metric that summarizes death rates across all age groups in one particular year. For a given year, it represents the average lifespan for a hypothetical group of people, if they experienced the same age-specific death rates throughout their whole lives as the age-specific death rates seen in that particular year. Learn more in our article: "Life expectancy" – What does this actually mean?

Current Cause of Death of Children and Adolescents in US 1999-2020

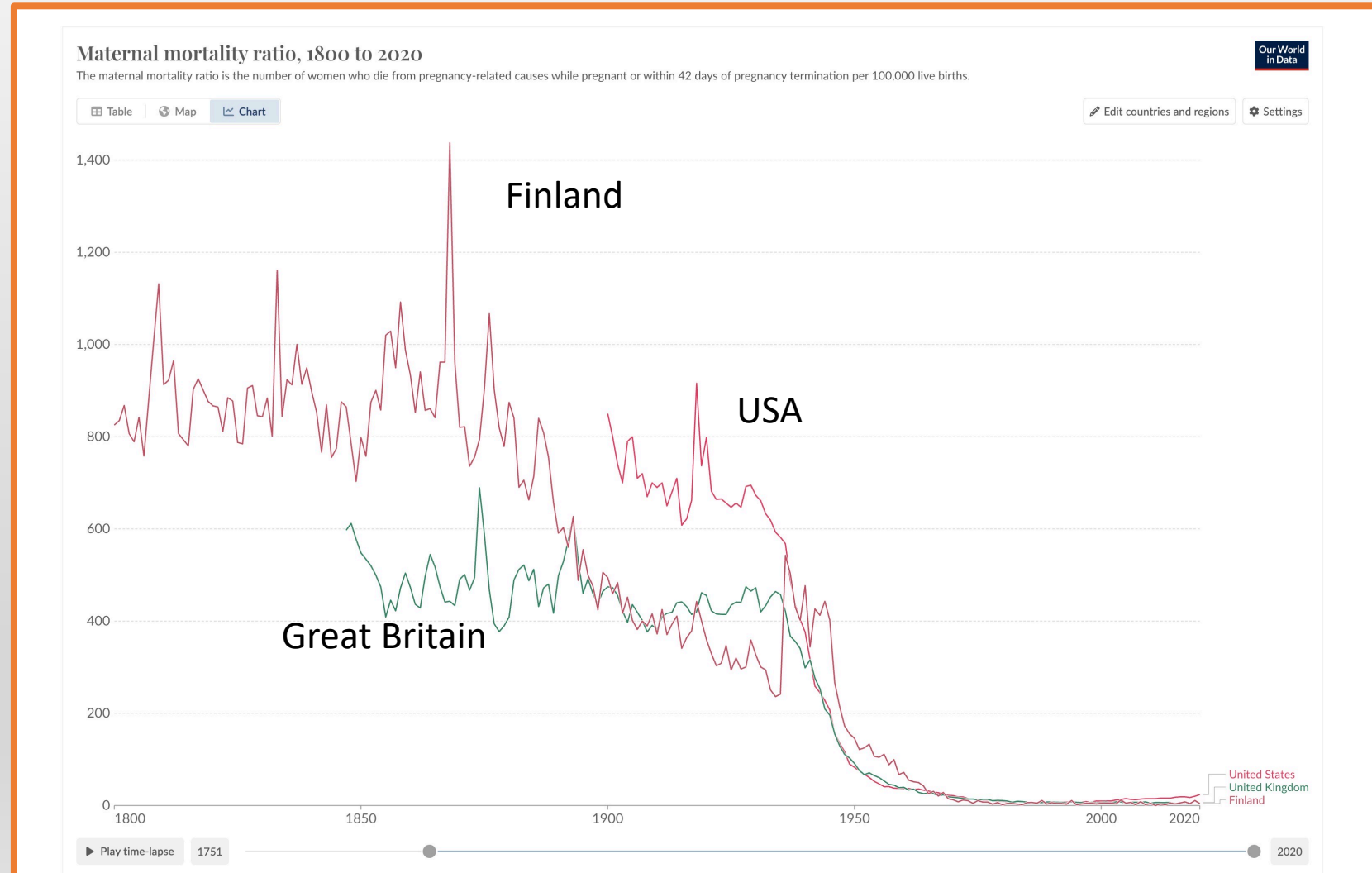
JE Goldstick et al. N Engl J Med
2022;386:1955-1956.

Infectious diseases
don't even register as a
top cause of death for
children and
adolescents in our
world!



Cause of Maternal Death and Maternal Mortality Rate Pre-20th Century to Present

- Purpureal infection
- Hemorrhage
- Toxemia
- Obstetrical complications
- Maternal death rate up to 1-1.5%



The Black Plague

1346 - 1353



Oriental rat flea



1346

1347

1348

1349

1350

1351

1352

1353

--- Approximate border between the Principality of Kiev and the Golden Horde - passage prohibited for Christians.



Land trade routes



Maritime trade routes

The Black Plague

- In October 1347, ships from city of Kaffa on the Black Sea arrived in Messina, Sicily fleeing a year long Mongol siege of the city
- Most of the crew were dead and the rest were ill with a strange disease that spread quickly throughout Sicily
- Similar ships arrive in other European ports, ***The Great Plague had begun***
- It will kill 25 million people in Europe or 30%-40% of the population after killing an estimated 20 million in Asia, the deadliest epidemic in history
- Caused by ***Yersinia Pestis***, a bacteria transmitted by fleas living on infected black rats
- The disease flourished in the atrocious hygienic conditions found in cities at the time

The Black Plague: Manifestations



Burke F. Complex health emergencies

- The Italian poet Giovanni Boccaccio wrote, *“In men and women alike at the beginning of the malady, certain swellings, either in the groin or under the armpits waxed to bigness of a common apple other the size of eggs named plague boils”*
- *Types of disease*
 1. Bubonic plague enlarged lymph nodes, high fever, chills, vomiting, diarrhea, severe body pain, then appearance of dark spots followed by death within 8 days; 80% mortality
 2. Pneumonic plague manifested by severe respiratory symptoms and fever and finally hemorrhage from the lungs with a 90-95% mortality. Spread person to person
 3. Septicemic plague high fever and purple skin patches indicate disrupt of the bodies coagulation system with 100% mortality

“And I, Agnolo di Tura ... buried my five children with my own hands....There was no one who wept for any dead, for all awaited death. And so many died that all believed it was the end of the world”

People of
Tournai,
Belgium bury
the dead



Black Plague: Through History

- The physician Raimundo Chalmel de Vinario noted in 1382 that with successive outbreaks of the plague in the 14th century fewer people got ill and fewer died
 - London plague of 1665 killed 10-15% of population
- It took Europe 150 years to regain the pre-plague population levels of 1346
- It affected animals as well as people; so many sheep died that there was a wool shortage
- Outbreaks occurred until 1750 in Europe; last major epidemic was in Asia in 1894
- We still see 7-9 cases of plague/year in US in West & Southwest. *Improved public sanitation largely responsible for drop in plague; effective antibiotics!*



Plague doctor with long robe and beaked mask and staff

Question?

What was the purpose of the beaked mask of the plague doctor?

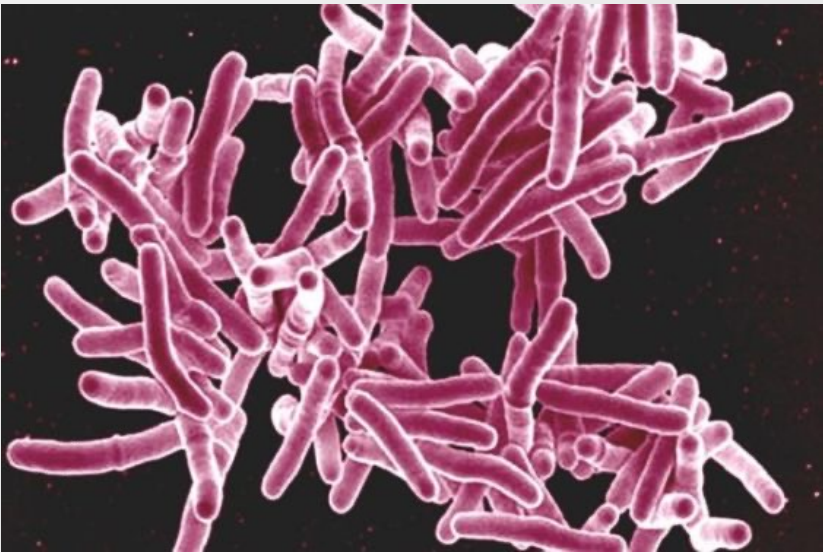
The Black Plague: Implications for Our World

East Smithfield
plague pits near
London



- Plague was addressed in Italy by isolating ships in harbor for 40 days (quaranta giorni) thus our word **quarantine**
- **Barreiro et al Nature 2022**
 - Examined DNA from teeth of those who died before, during, and after the great plague in London & Denmark
 - Found survivors of the plague tended to have a certain type of the ERAP2 gene, an immune system activating gene
 - This gene made it 40% more likely that people would survive the plague
 - This gene was passed on to future generations via genetic shift
 - ***Unfortunately, this immune activating gene increases the risk of autoimmune diseases such as rheumatoid arthritis, lupus, and Crohn's disease in our world***

The White Plague: Tuberculosis



Still with us in the 21st Century

Henry Baldwin of New Hampshire wrote in 1848 *“Here I sit in the dear chamber—the ‘bridal chamber’—where one short year ago I first pressed to my heart a young and pure and blooming wife. Then how fair and hopeful and beautiful she seemed, with the bloom upon her cheek . . . Now, alas, she lies all pale, stricken, and dying.”*

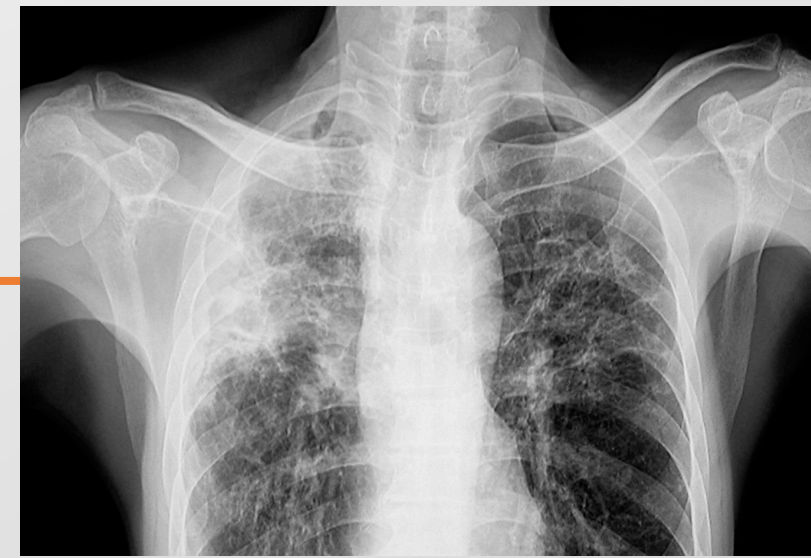
<https://new.nsf.gov/news/researchers-discover-how-tuberculosis-bacteria>

The White Plague: Tuberculosis

- Marcia Baldwin, 21, had consumption or tuberculosis and died in 1848. Henry followed her in 1855 from the same disease
- Tuberculosis caused by *Mycobacterium tuberculosis* has been part of human existence from earliest times
- ***It is estimated that 1 in 7 people who have ever lived on the Earth have died of some form of tuberculosis***
- *It was endemic in 18-19th century Europe and America; mothers taught their children proper behavior as there was a good chance that they would be raised by someone other than their parents*



Fading Away by Henry Peach Robinson, 1858

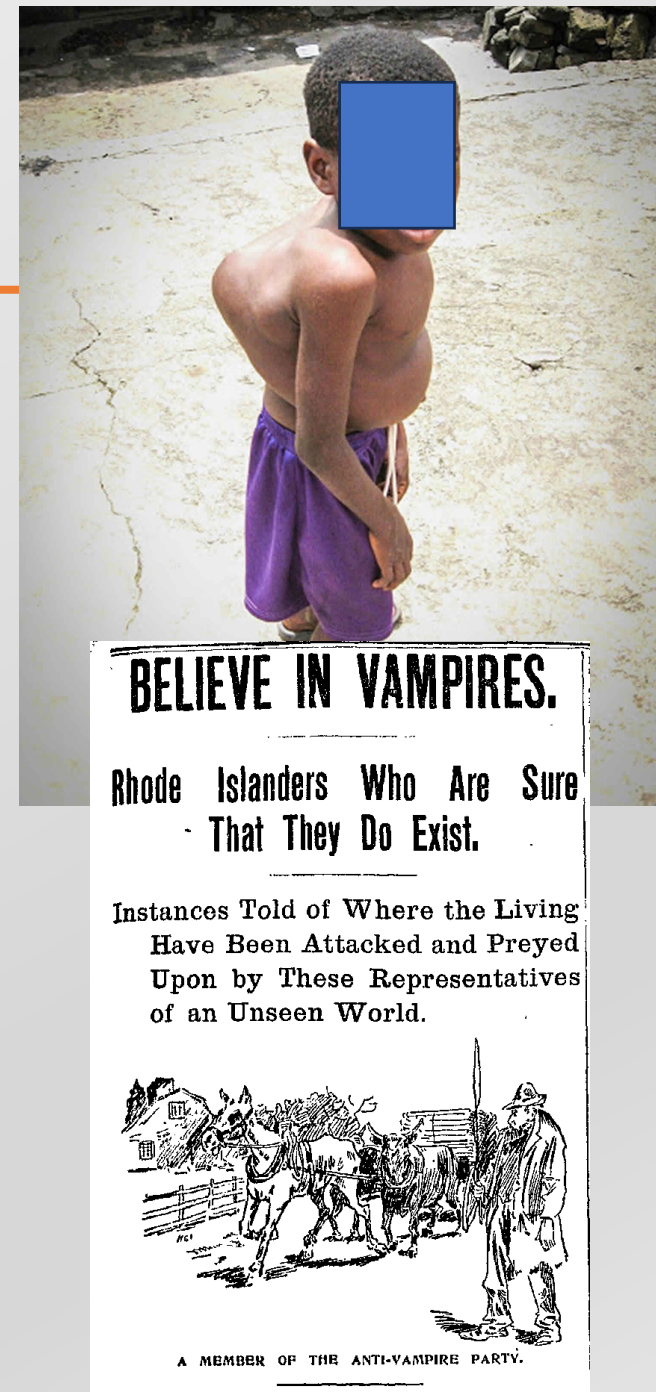


Tuberculosis: Manifestations

- TB begins with a cough lasting weeks/months along with fever, loss of energy, weight loss until the person is a mere skeleton, followed by hemorrhage from the lungs, difficulty breathing and then death.
- The Greeks named this disease phthisis meaning wasting; in the 18-19th century it was called **consumption**; affects all ages especially those 18-35
- Some died quickly of **galloping consumption**
- Most developed a lingering disease taking years to succumb
- Often whole families would be affected and die from the disease; *came to be thought of as a hereditary disease!*

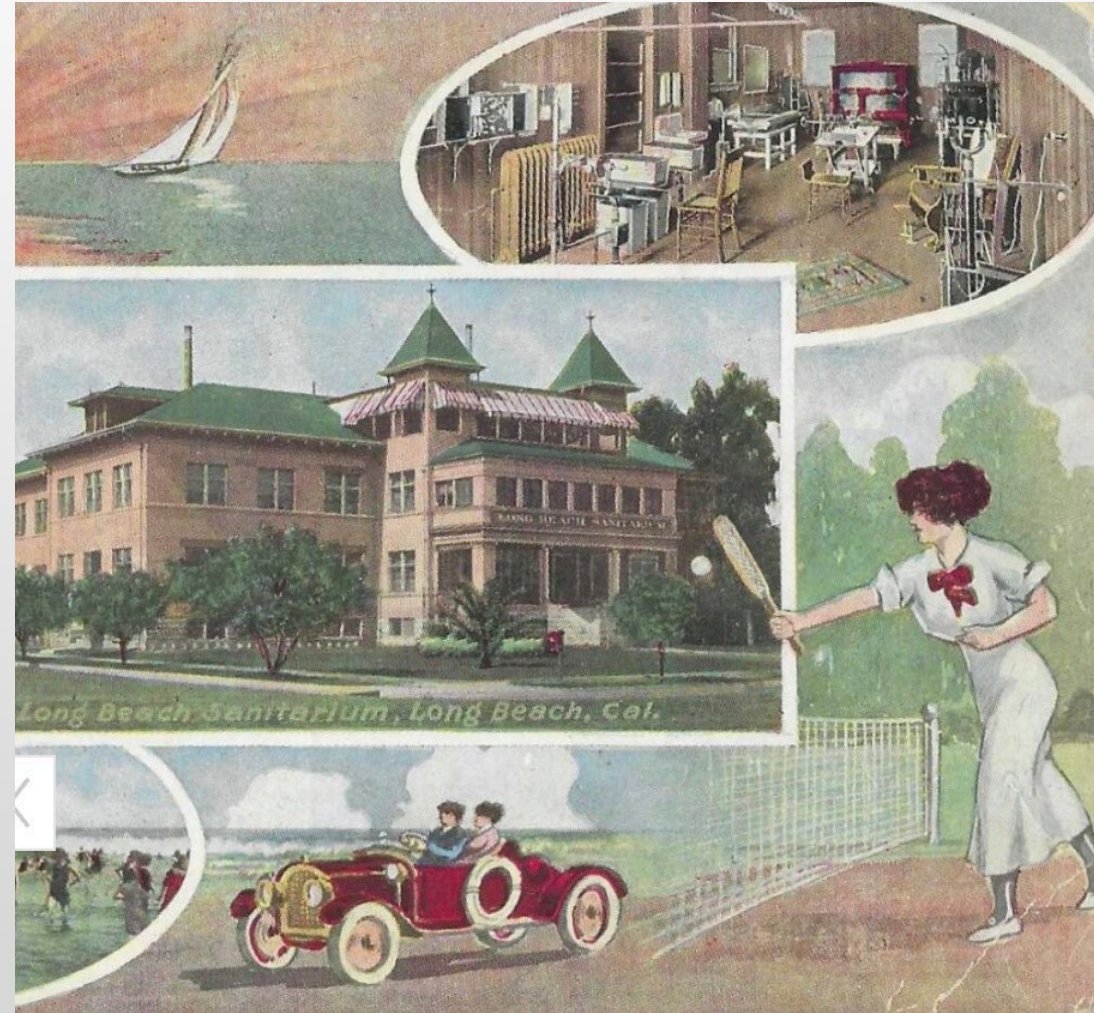
TB: other Forms of Disease and Vampires?

- **Scrofula** – TB affecting the lymph nodes especially around the neck. Also known as **King's Evil** as it was thought that a touch by royalty would cure the disease
- **Pott's disease** – TB affecting the spine leading to marked spine deformity
- **TB meningitis** – inflammation of the tissue around brain
- Mid-late 19th century some in New England felt TB was caused by **vampires**; bodies dug up and burned from fear that the dead were causing the living to be ill.
 - Bram Stoker published **Dracula** in 1897 to feed on these fears



TB: The Climate Cure

- Various home remedies were tried with one of the recommendations being plenty of fresh air
- From the mid 1800's to early 1900's the sanitarium movement was very popular in places especially in the US West
 - Fueled growth of Colorado, New Mexico, Nevada, and especially Southern California.
- Wealthy Easterners were encouraged to bring their TB and their money west



Advertisement for Long Beach Sanitarium

Causes of Death Chaves County, NM, 1904

YEAR OF DEATH: 1904

NUNN, INF f/E J	12-18-1903	01-01-1904	WHOOPING COUGH
CHAPMAN, G M INF	1/12/04	1/12/04	INANITION
RICHIE, INF f/J ELMER	1/14/04	1/14/04	PREMATURE BIRTH
RICHIE, MRS J ELMER (FRANCIS)	1880	1/15/04	ECLAMPSIA
RENICK, CHARLES V	NOT GIVEN	1/16/04	TUBERCULOSIS
McLAMBS, INF/ M R	09- -1903	1/21/04	BRAIN Inflammation
RUSSELL, JOHN	1844	1/21/04	PNEUMONIA
FRAZER, MRS SADDIE	1869	1/25/04	TUBERCULOSIS
DERRICK, MRS WM A	1853	1/25/04	APPENDICITIS
JOHNSON, BERT E	1859	1/31/04	TUBERCULOSIS
ALEXANDER INF	8/17/03	2/2/04	HYDROCEPHALUS
PETERSON, Inf/JULIUS C	2/3/04	2/3/04	STILL BORN
LEA, JOSEPH C	1841	2/4/04	PNEUMONIA
HEAD, MR J R	1871	2/8/04	TUBERCULOSIS
HARRIS, MRS A	1854	2/10/04	HEART DISEASE
SMITH, WAVERLY			ENTERITIS
MOTT, EMANUEL			PARAPLEGIA
DWAY, FRANK			TUBERCULOSIS
SMITH, CLYDE GIL	1895	2/23/04	SARCOMA
McLANE, MRS		3/3/04	TUBERCULOSIS
HUGHES, MRS J A	1852	3/4/04	TUBERCULOSIS
VIASA, ALIFONSO	1854	3/8/04	CATARRHAL PNEUMONIA
STONE , V	1850	3/8/04	RELAPSE/PNEUMONIA
FUNSTERWALD, H S	1882	3/20/04	TUBERCULOSIS
FEUSTERWALD, HOMER G	1882	3/21/04	TUBERCULOSIS
TERRY, LEILLY V	1872	3/26/04	TUBERCULOSIS
MAXEY, HARRY J	1880	3/31/04	T B MENINGITIS
WOODRUFF, MRS S K	1874	4/2/04	TUBERCULOSIS
COSGRAVE, J P	1840	4/3/04	CHOLETITHIASIS?
BRUNK, MRS	1861	4/3/04	MORPHINISM
AUSTIN, F L	1879	4/5/04	TUBERCULOSIS
BESHARA, MAUD	1888	4/9/04	TUBERCULOSIS
LINGAN, GRAVIE	1885	4/12/04	SYPHILIS
VOLKER, MRS CARILLO	1857	4/13/04	TUBERCULOSIS
LEUDEHL, MRS ORA BETTIE	1884	4/17/04	TUBERCULOSIS
LEUDEHL, MRS ORA BETTIE	1884	4/17/04	TUBERCULOSIS

16/35 listed died of TB



Note of the use of the "cure chair"

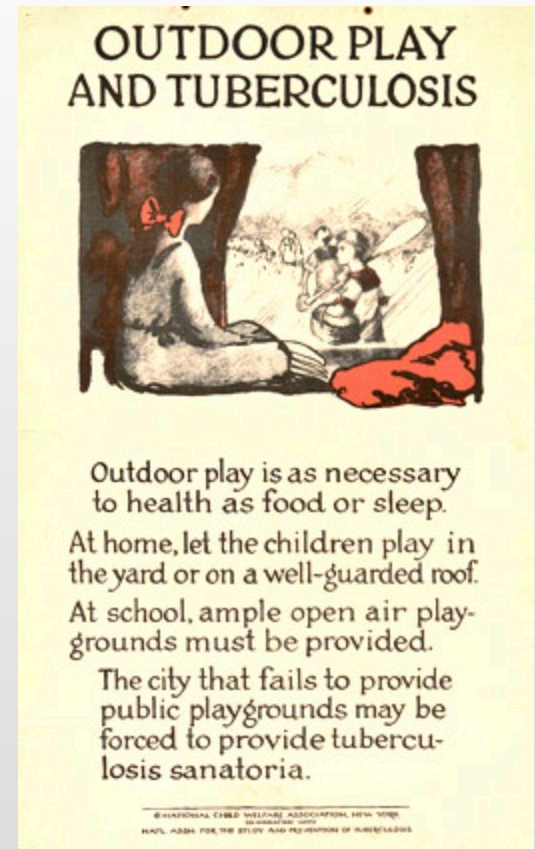
TB: From Invited Guests to Personas Non-Grata

- During the 18-19 centuries TB was felt to be a **hereditary disease**
- Louis Pasteur in the 1850s introduced the germ theory of disease
- 1882 Robert Koch published “*Die Aetiologie der Tuberculose*” finding that TB was an infectious disease and **NOT** hereditary
- It took some time for acceptance and when this happened TB patients were no longer welcome but were isolated and stigmatized



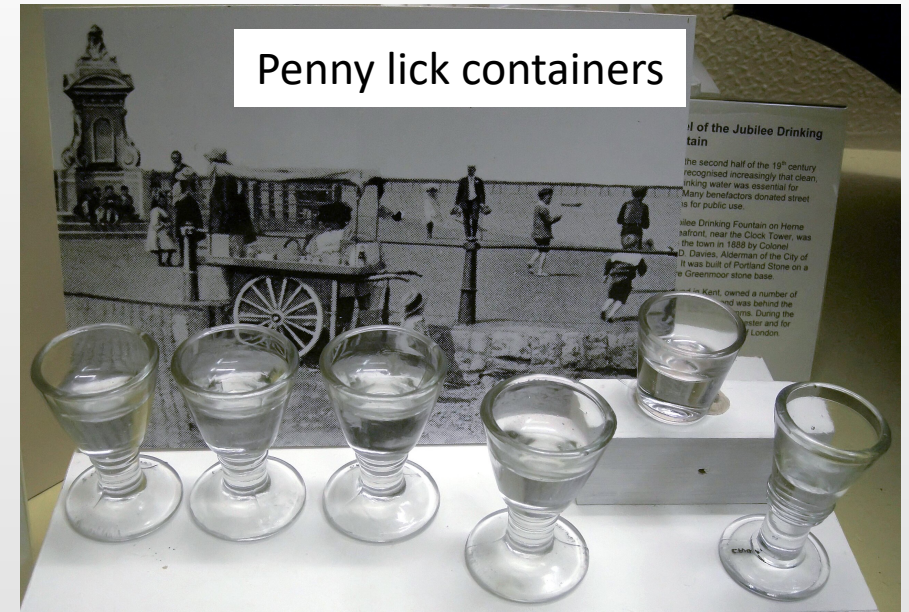
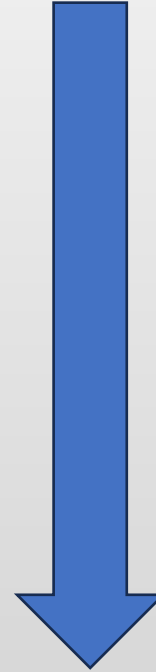
TB: Changes in American Society

- Once infection was accepted as cause of TB, public health programs went into full gear
- Children were encouraged to play outdoors, wash their hands, brush teeth
- Cities set aside **park space** and open areas
- Women's **hemlines** went up to prevent contact with ground
- **Spitting** was discouraged, men became **clean shaven**
- Health inspectors looked for infected people; when identified, **quarantined** often against their will in publicly funded TB sanitoriums



Question?

How did TB help lead to the invention of the ice cream cone?



TB: After >5,000 Years; Hope

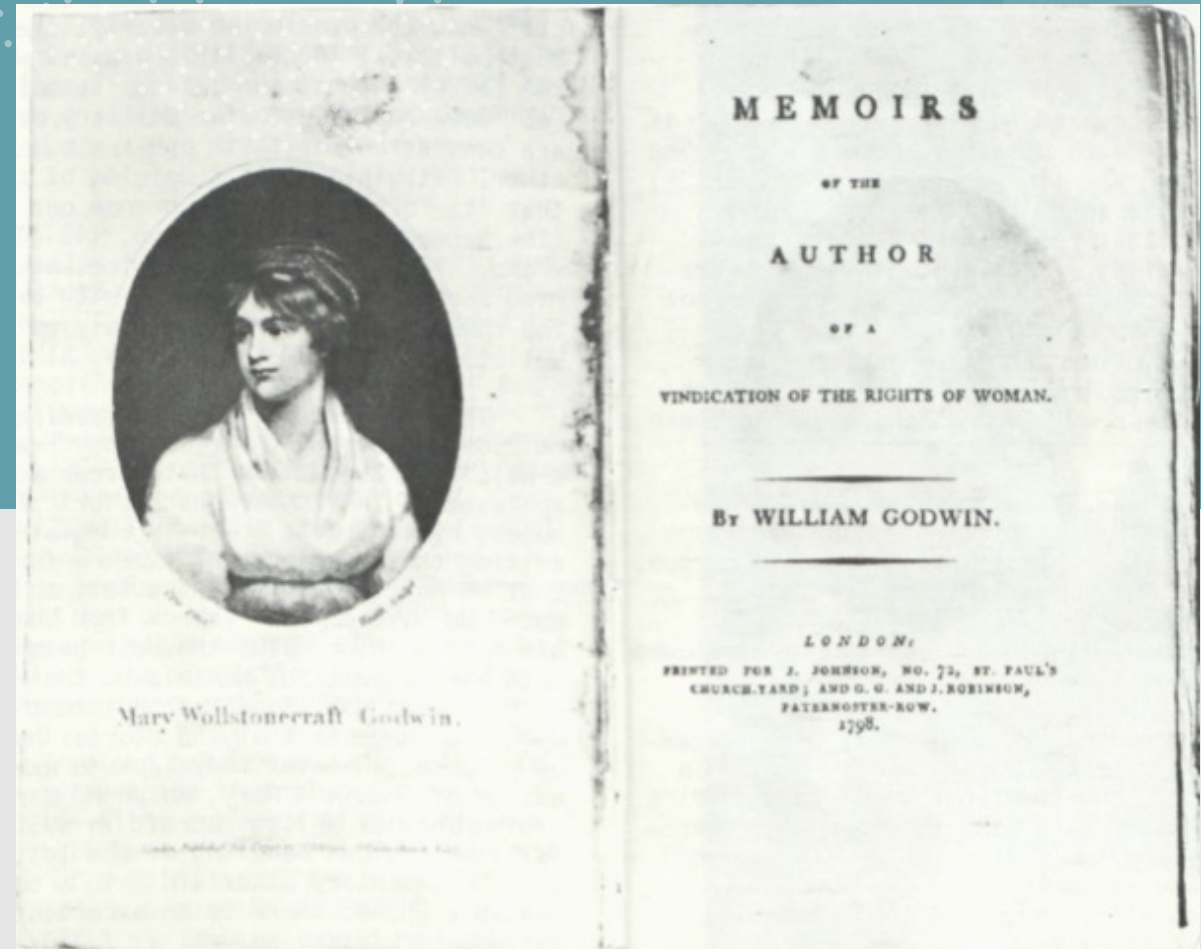
- 1944 streptomycin discovered for treatment of TB; derived from soil bacteria
- 1952 Additional drugs soon followed
 - Streptomycin alone led to resistance
 - Triple combination with 24 mo therapy
 - Current therapy: 2 drugs and 4 mo to cure
- Latent TB vs active TB
 - 1.8 billions people carry TB
 - 10 million develop active TB worldwide in 2022
 - 8,300 cases in US in 2022; 73% non-US born
 - 1.3 million died of TB associated disease in 2022
 - UN plan to eliminate pulmonary TB by 2030



Waksman and Schatz discover streptomycin. Waksman received Nobel Prize, Schatz did not

Purpureal Fever

On Thursday August 31, 1797 the author and champion of women's rights, Mary Woolstonecraft Godwin, gave birth to her 2nd child at home in London by midwife. The delivery was easy but because of complications a doctor was called. By Saturday she felt fully recovered. On Sunday she began having intense chills and soon thereafter developed high fevers, and intense abdominal pain. She died Sunday September 10, 1797 leaving a grieving husband and 2 motherless children including the future Mary Woolstonecraft Shelly



Question?

What famous novel did Mary Shelly,
her daughter, write?

Purpureal Fever aka Childbed Fever

- Mary Woolstonecraft Godwin died of purpureal fever, a condition likely with us since the dawn of human history
- Manifestations: 1-3 days after childbirth the mother would develop chills, followed by high fevers and intense abdominal pain and tenderness, followed by death.
- Marked increase with the advent of lying in hospitals or maternity hospitals.
- It would often come in epidemics but in general 1 in 5 women could be expected to develop childbed fever.



Purpureal Fever: Wash Those Darn Hands!

- Now known to be a bacterial infection caused by Streptococcus causing a deadly abdominal infection
- 1847 Ignaz Semmelweis, appointed to lying in hospital in Vienna. Major problem with childbed fever.
 - Noted that childbed fever rate in those cared for by midwives at home was very low while those cared for by medical students in hospital was high
 - Students arrived to examine women and perform births after their anatomy classes
 - Required students to disinfect hands prior to working on the maternity ward and between patients
 - Rates of childbed fever plummeted!



Semmelweis

Purpureal Fever: A First

- Semmelweis work was not widely known (published work had 543 pages and not very interesting). Others made the same observation and germ theory of disease added to necessity of hand cleansing
- Joseph Lister a British surgeon introduced ***antiseptics*** into surgery in 1865; later adopted by obstetricians in Britain. After 1880's rate of childbed fever dropped!
- 1935 Leonard Colebrook a physician in London in charge of special research unit devoted to studying purpureal fever.
 - ***He gave an experimental medication, prontosil, to a young woman dying of purpureal fever. Prontosil as it turns out is sulphanilamide, a sulfa antibiotic.***
 - Young woman was better the next day and asking for breakfast!
 - Use of sulfonamides and later penicillin (1941) made a profound impact on childbed fever although it still occurs today



Written in 1876 by William McLachlan an LDS missionary in Christchurch, New Zealand

“I suppose before now Georgie (14 months) and Hannah (15 months) are both walking and hope they are well. You will have to take care of them this next summer and fall until they get their teeth all cut. Kiss them for me until I can return and attend to it myself “

His concern about their teeth is due to having lost a child several years earlier with the cause of death listed as ‘teething’

Question: How can William have a 14- and 15-month-old child?

Teething



Teething as a Cause of Death



- Teething begins at 4-6 months with the first teeth (bottom incisors) appearing 7 months. By 12 months children have around 6 teeth and a full set of teeth by 24 months
- Anciently Hippocrates wrote; “Teething children suffer from itching of the gums, fever, convulsions, and diarrhea”
- 1732 John Arbuthnot, a Scottish physician, wrote; “Above one-tenth of all children die in teething”
- 1900 ICD 1 disease number 82 is teething as a cause of death
- Nursing generally extends from birth through 6 months with some children nursed up to 24 months and longer

Teething Deaths in Pioneer Utah

- Teething as a cause of death especially common in Utah during the the years 1866-1880 and then virtually disappeared as a diagnosis
 - Not explained by certain physicians over diagnosing
 - Age at teething death around 13 months
 - Seasonal variation August-November
 - Not SIDS (usually occurs before 6 months)
- What may be the cause of “teething” related death?

Gibbons HL, Hebdon CK: Teething as a cause of death-A historical review. West J Med 1991 Dec;155:658-659

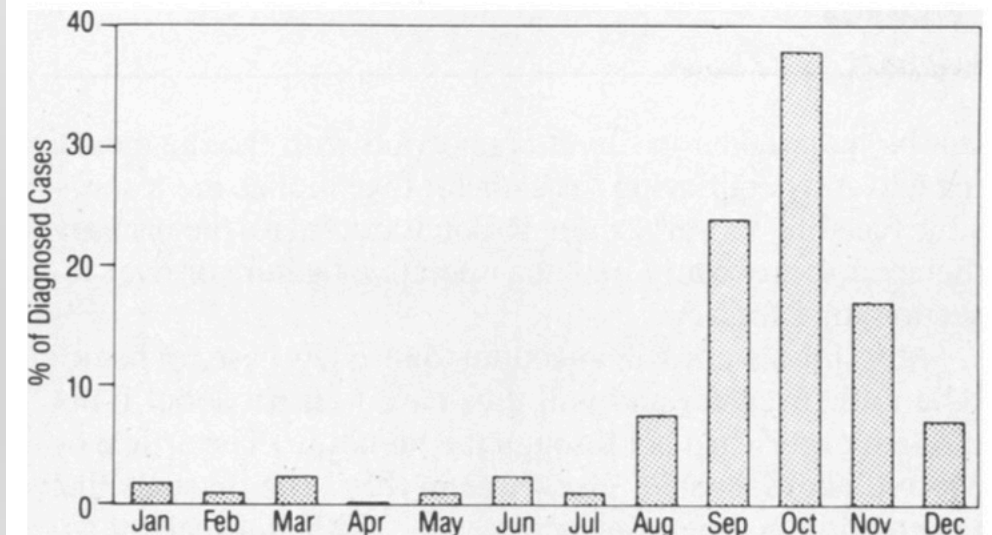
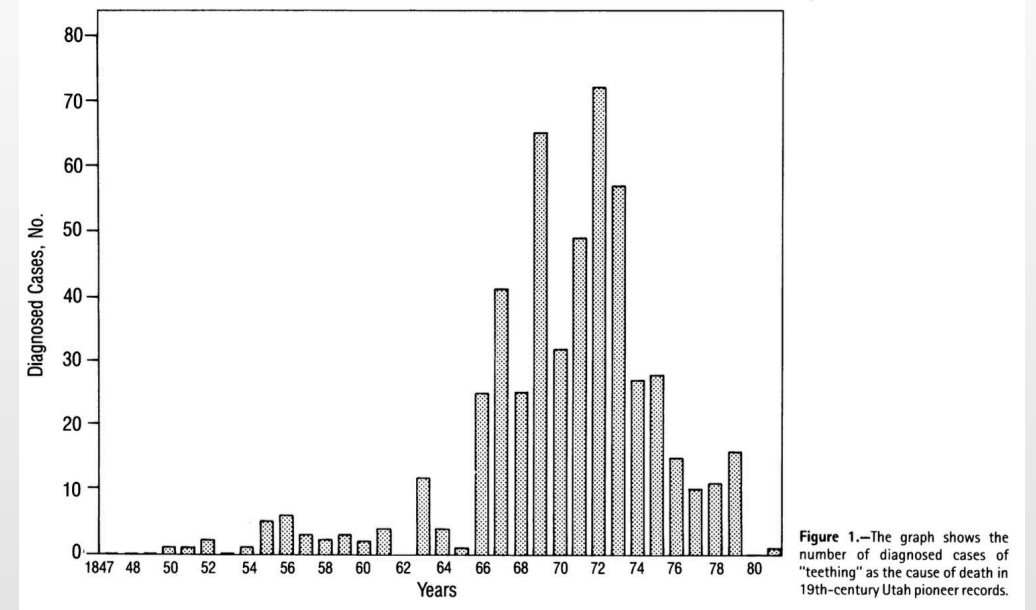


Figure 2.—The graph shows the percentage of teething deaths in the month of occurrence. These figures are taken from Utah pioneer records.

Teething Death and Dairy Products



1840-1870 Milk Production Industrialized

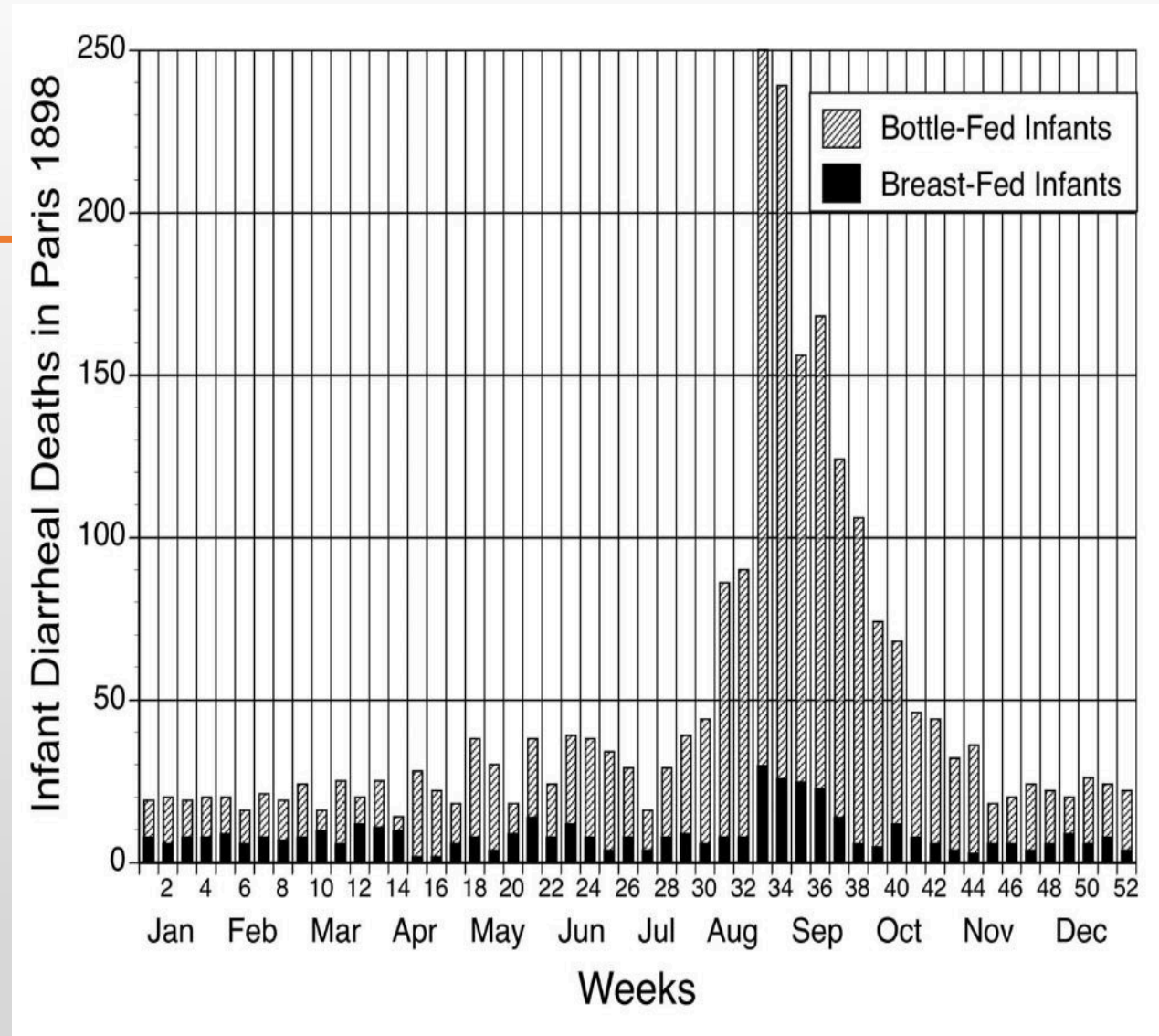
- Large herds
- Poor quality of feed
- Minimal refrigeration
- Milk adulterated to make it look better

Same Time Decline in Popularity of Breast Feeding

- Cow's milk became more popular for feeding infants and toddlers
- Some physicians noted the increased mortality of cow's milk fed infants/toddlers

Unsafe Dairy Products a Cause of Teething Deaths?

- Look at graph showing weekly infant deaths of bottle-fed vs breast-fed Paris, France in 1898
 - **Correlation with seasonality of teething deaths reported in Utah**
 - Infection from milk vs no antibodies transferred via mother's milk to protect from infection or both
- Milk known to transmit a variety of microorganisms
 - **Human contamination:** Salmonella, Streptococcus, Diphtheria
 - **Bovine contamination:** Mycobacterium bovis, brucellosis

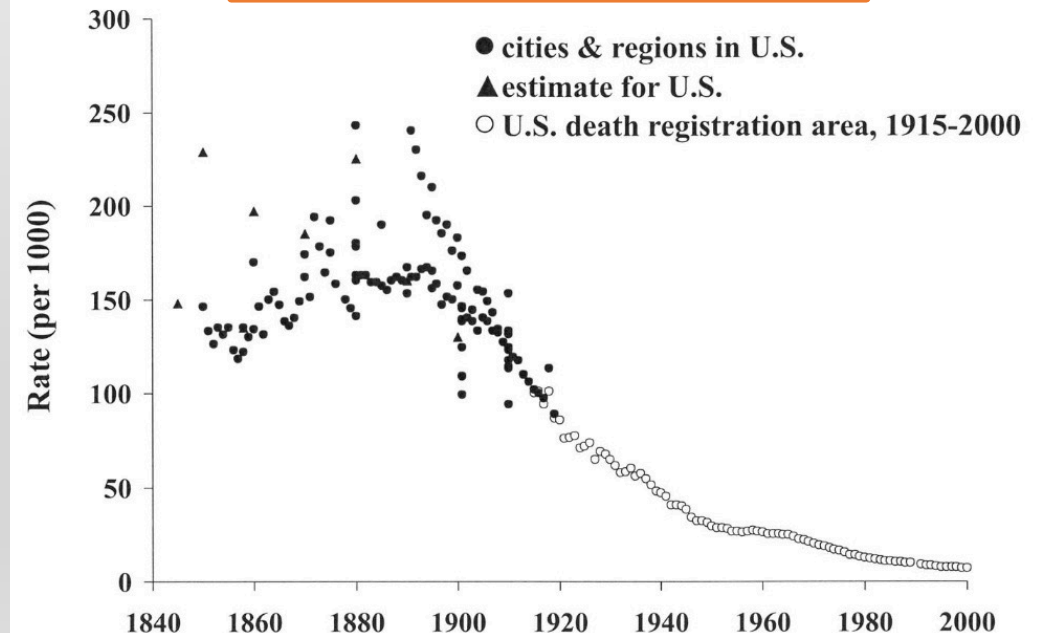


So, What Happened?

- 1864 Beer and wine found to stay fresh when heat treated (pasteurized)
- With germ theory taking hold, milk also underwent pasteurization
 - **1882 First commercial pasteurization of milk in Germany**
 - **Dairies also under more scrutiny for sanitation**
 - **Improvement in milk harvesting from cows**
- Of interest:
 - Raw/unpasteurized milk available in US; still causes 845 x more illness and 45 x more hospitalizations than pasteurized milk
 - 1940 65% of US infants breast fed; 1950-1970 25%; today around 51%

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Pages 1713–1722. doi:10.4315/0362-028X.JFP-18-186

Infant Mortality US 1840-2000



*Data source: S. H. Preston and M. R. Haines (1991); Alter (1997); U.S. Census office (1902-2000)

Conclusion

- Documenting causes of death & the emergence of public health/epidemiology, have helped to increase the quality/quantity of our lives in 2024
- Although we have not conquered most diseases, we have been able to dramatically lessen their impact in many parts of the world
- Our ancestors lived in a much more uncertain world and approached life with amazing energy and drive in spite of that uncertainty
- Knowing the challenges they faced makes me appreciate them even more!



Shouting Hosannah
Minerva Teichert



Winter night in Anacortes