One hundred years of health in Poland

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#CalisiaConf2019

Kalisz, 9-10 June 2019

Prof. Richard Doll:

*"**Death** in old age is **inevitable**,*

*but **death** before old age is not".*

Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Human Development Index – HDI

Composite index of:

- Education
- Per capita income
- **Life expectancy**

The HDI is a "*measure of the average level of human development of people in a society once inequality is taken into account*" (United Nations Development Programme 2017)

Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

TABLE 2

Human Development Index trends, 1990–2017

HDI rank	Human Development Index (HDI) Value 1990	2000	2010	2012	2014	2015	2016	2017	Change in HDI rank 2012–2017*	Average annual HDI growth (%) 1990–2000	2000–2010	2010–2017	1990–2017
VERY HIGH HUMAN DEVELOPMENT													
1 Norway	0.850	0.917	0.942	0.942	0.946	0.948	0.951	0.953	0	0.76	0.27	0.17	0.42
2 Switzerland	0.832	0.889	0.932	0.935	0.939	0.942	0.943	0.944	0	0.67	0.47	0.18	0.47
3 Australia	0.866	0.898	0.923	0.929	0.933	0.936	0.938	0.939	0	0.36	0.27	0.24	0.30
4 Ireland	0.763	0.857	0.909	0.902	0.921	0.929	0.934	0.938	13	1.16	0.60	0.45	0.77
5 Germany	0.801	0.868	0.921	0.928	0.930	0.933	0.934	0.936	–1	0.81	0.59	0.24	0.58
6 Iceland	0.802	0.860	0.891	0.909	0.925	0.927	0.933	0.935	5	0.71	0.36	0.68	0.57
7 Hong Kong, China (SAR)	0.781	0.827	0.901	0.911	0.923	0.927	0.930	0.933	3	0.58	0.87	0.49	0.66
7 Sweden	0.816	0.897	0.905	0.908	0.920	0.929	0.932	0.933	5	0.96	0.09	0.43	0.50
9 Singapore	0.718	0.819	0.909	0.920	0.928	0.929	0.930	0.932	–2	1.33	1.05	0.36	0.97
10 Netherlands	0.829	0.876	0.910	0.921	0.924	0.926	0.928	0.931	–4	0.55	0.39	0.32	0.43
11 Denmark	0.799	0.863	0.910	0.924	0.928	0.926	0.928	0.929	–6	0.77	0.53	0.30	0.56
12 Canada	0.849	0.867	0.902	0.908	0.918	0.920	0.922	0.926	0	0.21	0.39	0.38	0.32
13 United States	0.860	0.885	0.914	0.918	0.918	0.920	0.922	0.924	–5	0.28	0.32	0.16	0.27
14 United Kingdom	0.775	0.857	0.905	0.898	0.919	0.918	0.920	0.922	5	1.13	0.43	0.25	0.64
15 Finland	0.784	0.858	0.903	0.908	0.914	0.915	0.918	0.920	–3	0.90	0.52	0.25	0.59
16 New Zealand	0.818	0.869	0.899	0.905	0.910	0.914	0.915	0.917	–1	0.61	0.35	0.28	0.42
17 Belgium	0.806	0.873	0.903	0.905	0.909	0.913	0.915	0.916	–2	0.80	0.33	0.21	0.47
17 Liechtenstein	..	0.862	0.904	0.913	0.911	0.912	0.915	0.916	–8	..	0.48	0.19	..
19 Japan	0.816	0.855	0.885	0.895	0.903	0.905	0.907	0.909	1	0.48	0.34	0.39	0.40
20 Austria	0.795	0.838	0.895	0.899	0.901	0.903	0.906	0.908	–2	0.53	0.66	0.20	0.49
21 Luxembourg	0.782	0.855	0.889	0.892	0.895	0.899	0.903	0.904	1	0.89	0.39	0.24	0.54
22 Israel	0.792	0.853	0.887	0.893	0.899	0.901	0.902	0.903	–1	0.75	0.39	0.26	0.49
22 Korea (Republic of)	0.728	0.817	0.884	0.890	0.896	0.898	0.900	0.903	1	1.17	0.79	0.30	0.80
24 France	0.779	0.849	0.882	0.886	0.894	0.898	0.899	0.901	0	0.86	0.38	0.31	0.54
25 Slovenia	0.767	0.825	0.882	0.877	0.887	0.889	0.894	0.896	0	0.73	0.68	0.23	0.58
26 Spain	0.754	0.825	0.865	0.873	0.880	0.885	0.889	0.891	1	0.90	0.47	0.43	0.62
27 Czechia	0.730	0.796	0.862	0.866	0.879	0.882	0.885	0.888	1	0.86	0.80	0.42	0.72
28 Italy	0.769	0.830	0.870	0.874	0.874	0.876	0.878	0.880	–2	0.76	0.48	0.15	0.50
29 Malta	0.740	0.783	0.843	0.849	0.862	0.871	0.875	0.878	4	0.56	0.74	0.59	0.64
30 Estonia	0.733	0.780	0.845	0.859	0.864	0.866	0.868	0.871	–1	0.63	0.79	0.44	0.64
31 Greece	0.753	0.796	0.856	0.854	0.864	0.866	0.868	0.870	–1	0.56	0.72	0.24	0.54
32 Cyprus	0.732	0.802	0.850	0.852	0.856	0.860	0.867	0.869	–1	0.91	0.59	0.31	0.64
33 Poland	0.712	0.785	0.835	0.836	0.842	0.855	0.860	0.865	5	0.98	0.62	0.50	0.72
34 United Arab Emirates	0.727	0.798	0.836	0.846	0.855	0.860	0.862	0.863	1	0.94	0.47	0.45	0.64
35 Andorra	..	0.759	0.828	0.849	0.853	0.854	0.856	0.858	–2	..	0.88	0.51	..
35 Lithuania	0.732	0.756	0.824	0.831	0.851	0.852	0.855	0.858	5	0.33	0.87	0.58	0.59
37 Qatar	0.754	0.810	0.825	0.844	0.853	0.854	0.855	0.856	–1	0.72	0.19	0.52	0.47
38 Slovakia	0.739	0.764	0.829	0.842	0.845	0.851	0.853	0.855	–1	0.33	0.83	0.44	0.54
39 Brunei Darussalam	0.782	0.819	0.842	0.852	0.853	0.852	0.852	0.853	–8	0.46	0.28	0.19	0.32
39 Saudi Arabia	0.697	0.743	0.808	0.835	0.852	0.854	0.854	0.853	0	0.64	0.84	0.78	0.75
41 Latvia	0.704	0.728	0.816	0.824	0.838	0.841	0.844	0.847	2	0.33	1.15	0.53	0.69
41 Portugal	0.711	0.785	0.822	0.829	0.839	0.842	0.845	0.847	1	0.98	0.46	0.44	0.65
43 Bahrain	0.746	0.792	0.796	0.800	0.810	0.832	0.846	0.846	7	0.60	0.06	0.87	0.47
44 Chile	0.701	0.759	0.808	0.819	0.833	0.840	0.842	0.843	0	0.80	0.62	0.61	0.68
45 Hungary	0.704	0.769	0.823	0.830	0.833	0.834	0.835	0.838	–4	0.89	0.68	0.26	0.65
46 Croatia	0.670	0.750	0.808	0.816	0.824	0.827	0.828	0.831	0	1.14	0.75	0.40	0.80
47 Argentina	0.704	0.771	0.813	0.818	0.820	0.822	0.822	0.825	–2	0.91	0.54	0.20	0.58
48 Oman	..	0.704	0.793	0.804	0.815	0.822	0.822	0.821	0	..	1.19	0.50	..
49 Russian Federation	0.734	0.720	0.780	0.798	0.807	0.813	0.815	0.816	3	–0.18	0.80	0.66	0.40
50 Montenegro	..	..	0.793	0.800	0.805	0.809	0.810	0.814	0	..	..	0.36	..
51 Bulgaria	0.694	0.712	0.779	0.786	0.797	0.807	0.810	0.813	6	0.26	0.90	0.61	0.59
52 Romania	0.701	0.709	0.797	0.795	0.802	0.805	0.807	0.811	2	0.11	1.18	0.25	0.54
53 Belarus	..	0.683	0.792	0.803	0.807	0.805	0.805	0.808	–4	..	1.49	0.29	..
54 Bahamas	..	0.776	0.789	0.807	0.807	0.807	0.806	0.807	–7	..	0.17	0.32	..
55 Uruguay	0.692	0.742	0.773	0.790	0.801	0.800	0.802	0.804	1	0.70	0.40	0.57	0.56
56 Kuwait	0.713	0.786	0.792	0.796	0.799	0.802	0.804	0.803	–3	0.99	0.07	0.20	0.44
57 Malaysia	0.643	0.725	0.772	0.781	0.790	0.795	0.799	0.802	1	1.20	0.63	0.54	0.82
58 Barbados	0.716	0.752	0.782	0.795	0.796	0.797	0.799	0.800	–4	0.49	0.39	0.34	0.41
58 Kazakhstan	0.690	0.685	0.795	0.791	0.799	0.797	0.797	0.800	0	–0.07	1.12	0.64	0.55

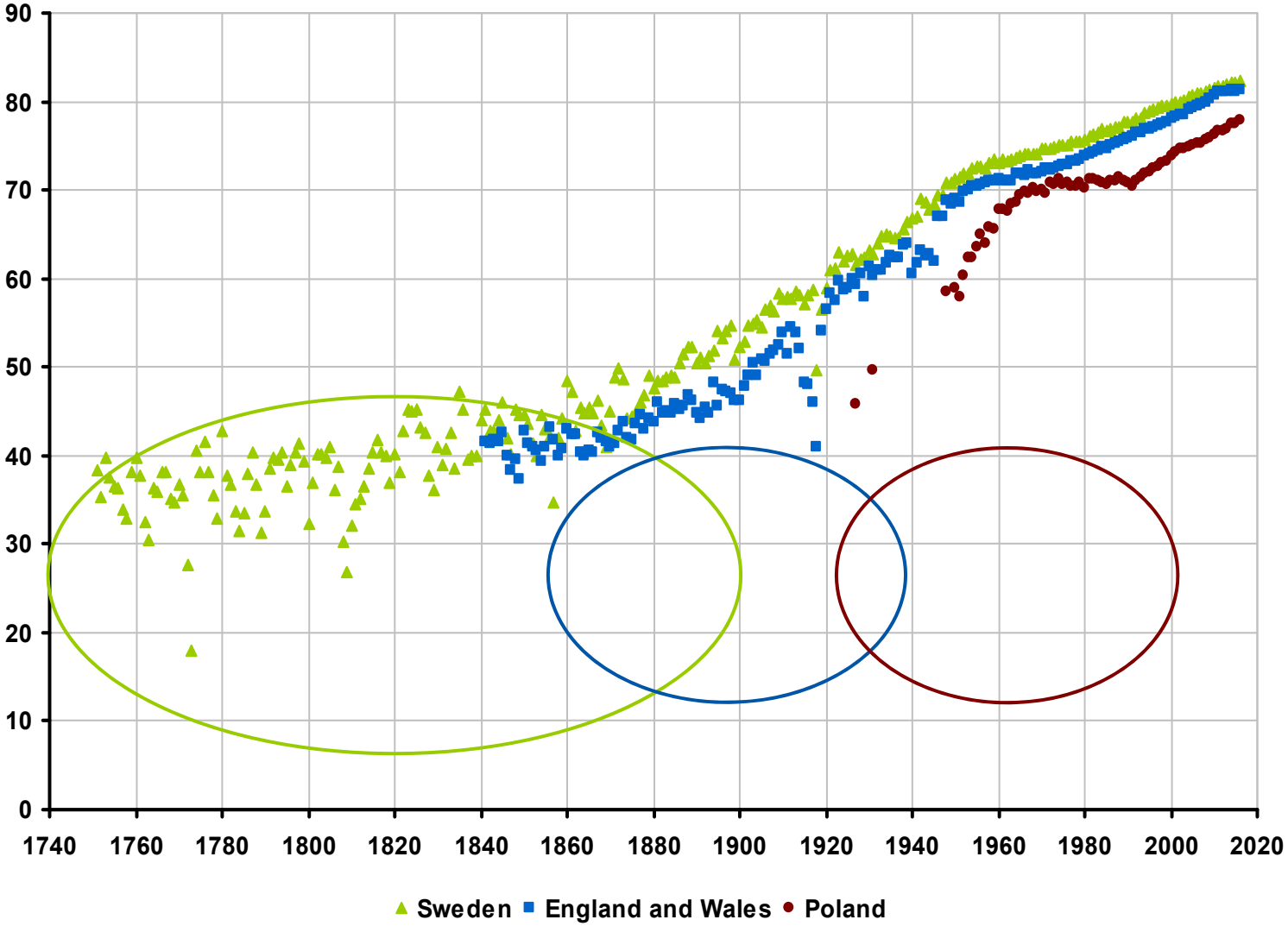
Source: Jahan S et al. Human Development Indices and Indicators: 2018 Statistical Update. United Nations Development Programme, New York 2018.

TABLE 1 Human Development Index and its components

HDI rank		Human Development Index (HDI) Value 2017	Life expectancy at birth (years) 2017	Expected years of schooling (years) 2017[a]	Mean years of schooling (years) 2017[a]	Gross national income (GNI) per capita (2011 PPP $) 2017	GNI per capita rank minus HDI rank 2017	HDI rank 2016
VERY HIGH HUMAN DEVELOPMENT								
1	Norway	0.953	82.3	17.9	12.6	68,012	5	1
2	Switzerland	0.944	83.5	16.2	13.4	57,625	8	2
3	Australia	0.939	83.1	22.9[b]	12.9	43,560	10	3
4	Ireland	0.938	81.6	19.6[b]	12.5[c]	53,754	8	4
5	Germany	0.936	81.2	17.0	14.1	46,136	13	4
6	Iceland	0.935	82.9	19.3[b]	12.4[c]	45,810	13	6
7	Hong Kong, China (SAR)	0.933	84.1	16.3	12.0	58,420	2	8
7	Sweden	0.933	82.6	17.6	12.4	47,786	9	7
9	Singapore	0.932	83.2	16.2[d]	11.5	82,503[e]	–6	8
10	Netherlands	0.931	82.0	18.0	12.2	47,900	5	10
11	Denmark	0.929	80.9	19.1[b]	12.6[f]	47,918	3	10
12	Canada	0.926	82.5	16.4[c]	13.3	43,433	10	12
13	United States	0.924	79.5	16.5	13.4	54,941	–2	12
14	United Kingdom	0.922	81.7	17.4	12.9[f]	39,116	13	14
15	Finland	0.920	81.5	17.6	12.4	41,002	10	15
16	New Zealand	0.917	82.0	18.9[b]	12.5	33,970	18	16
17	Belgium	0.916	81.3	19.8[b]	11.8	42,156	6	16
17	Liechtenstein	0.916	80.4[g]	14.7	12.5[h]	97,336[e,i]	–15	16
19	Japan	0.909	83.9	15.2	12.8[f]	38,986	9	19
20	Austria	0.908	81.8	16.1	12.1	45,415	0	20
21	Luxembourg	0.904	82.0	14.0	12.1[f]	65,016[g]	–13	26
22	Israel	0.903	82.7	15.9	13.0	32,711	13	21
22	Korea (Republic of)	0.903	82.4	16.5	12.1	35,345	8	22
24	France	0.901	82.7	16.4	11.5	39,254	2	23
25	Slovenia	0.896	81.1	17.2	12.2	30,594	12	24
26	Spain	0.891	83.3	17.9	9.8	34,258	7	25
27	Czechia	0.888	78.9	16.9	12.7	30,588	11	27
28	Italy	0.880	83.2	16.3	10.2[f]	35,299	3	28
29	Malta	0.878	81.0	15.9	11.3	34,396	3	29
30	Estonia	0.871	77.7	16.1	12.7	28,993	10	30
31	Greece	0.870	81.4	17.3	10.8	24,648	20	30
32	Cyprus	0.869	80.7	14.6	12.1	31,568	4	32
33	Poland	0.865	77.8	16.4	12.3	26,150	12	34
34	United Arab Emirates	0.863	77.4	13.6	10.8[f]	67,805	–27	33
35	Andorra	0.858	81.7[g]	13.5[d]	10.2	47,574[e]	–18	35
35	Lithuania	0.858	74.8	16.1	13.0	28,314	7	36
37	Qatar	0.856	78.3	13.4	9.8	116,818[e]	–36	36
38	Slovakia	0.855	77.0	15.0	12.5	29,467	1	39
39	Brunei Darussalam	0.853	77.4	14.5	9.1[f]	76,427[e]	–35	40
39	Saudi Arabia	0.853	74.7	16.9	9.5[f]	49,680	–26	38
41	Latvia	0.847	74.7	15.8	12.8[f]	25,002	8	43
41	Portugal	0.847	81.4	16.3	9.2	27,315	2	42
43	Bahrain	0.846	77.0	16.0	9.4[f]	41,580	–19	41
44	Chile	0.843	79.7	16.4	10.3	21,910	13	44
45	Hungary	0.838	76.1	15.1	11.9	25,393	3	45
46	Croatia	0.831	77.8	15.0	11.3[f]	22,162	10	46
47	Argentina	0.825	76.7	17.4	9.9[f]	18,461	19	47
48	Oman	0.821	77.3	13.9	9.5	36,290	–19	47
49	Russian Federation	0.816	71.2	15.5	12.0[f]	24,233	3	49
50	Montenegro	0.814	77.3	14.9	11.3[f]	16,779	19	50
51	Bulgaria	0.813	74.9	14.8	11.8	18,740	13	50
52	Romania	0.811	75.6	14.3	11.0	22,546	2	52
53	Belarus	0.808	73.1	15.5	12.3	16,323	18	54
54	Bahamas	0.807	75.8	12.8[e]	11.1[f]	26,681	–10	53
55	Uruguay	0.804	77.6	15.9	8.7	19,930	5	56
56	Kuwait	0.803	74.8	13.6	7.3	70,524	–51	55
57	Malaysia	0.802	75.5	13.7	10.2[f]	26,107	–11	57
58	Barbados	0.800	76.1	15.3	10.6[e]	15,843[g]	14	57
58	Kazakhstan	0.800	70.0	15.1	11.8[f]	22,626	–3	60

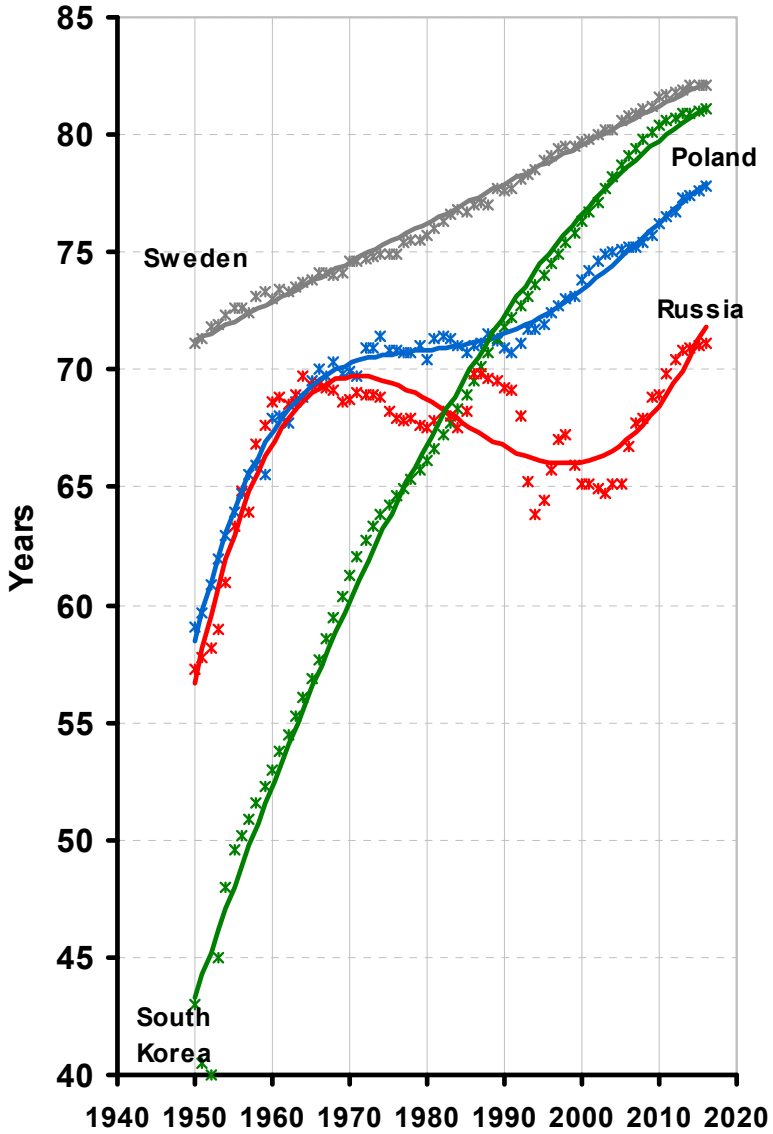
Source: Jahan S et al. Human Development Indices and Indicators: 2018 Statistical Update. United Nations Development Programme, New York 2018.

Life expectancy at birth, both sexes, 1750-2016
Sweden, England and Wales, Poland



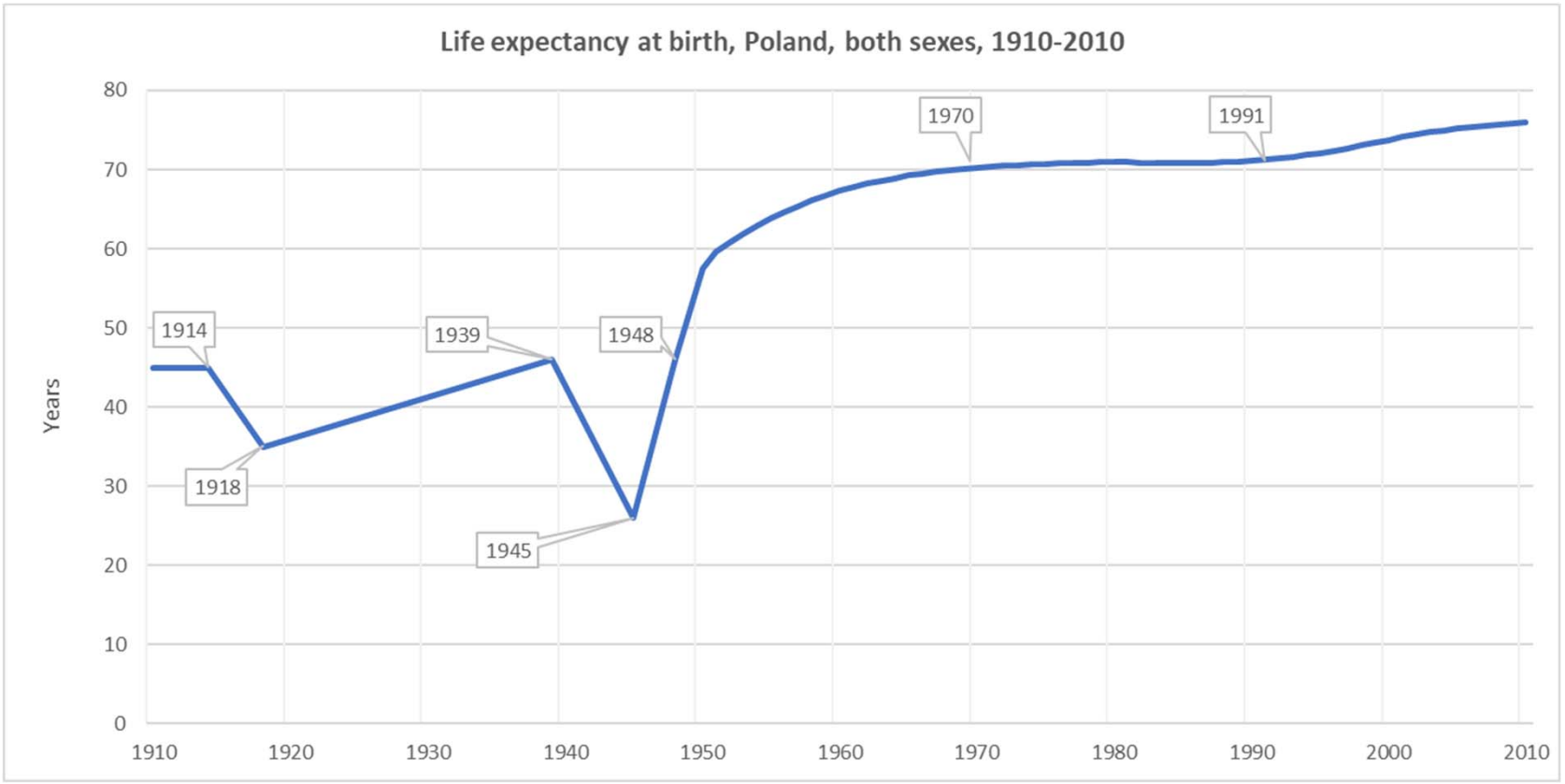
Sources: Human Mortality Database: http://www.mortality.org/; WHO Mortality Database: http://www.who.int/healthinfo/mortality_data/en/; GUS; Sources: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Life expectancy in selected countries, both sexes



Source: http://www.gapminder.org/data/; Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Life expectancy at birth, Poland, both sexes, 1910-2010



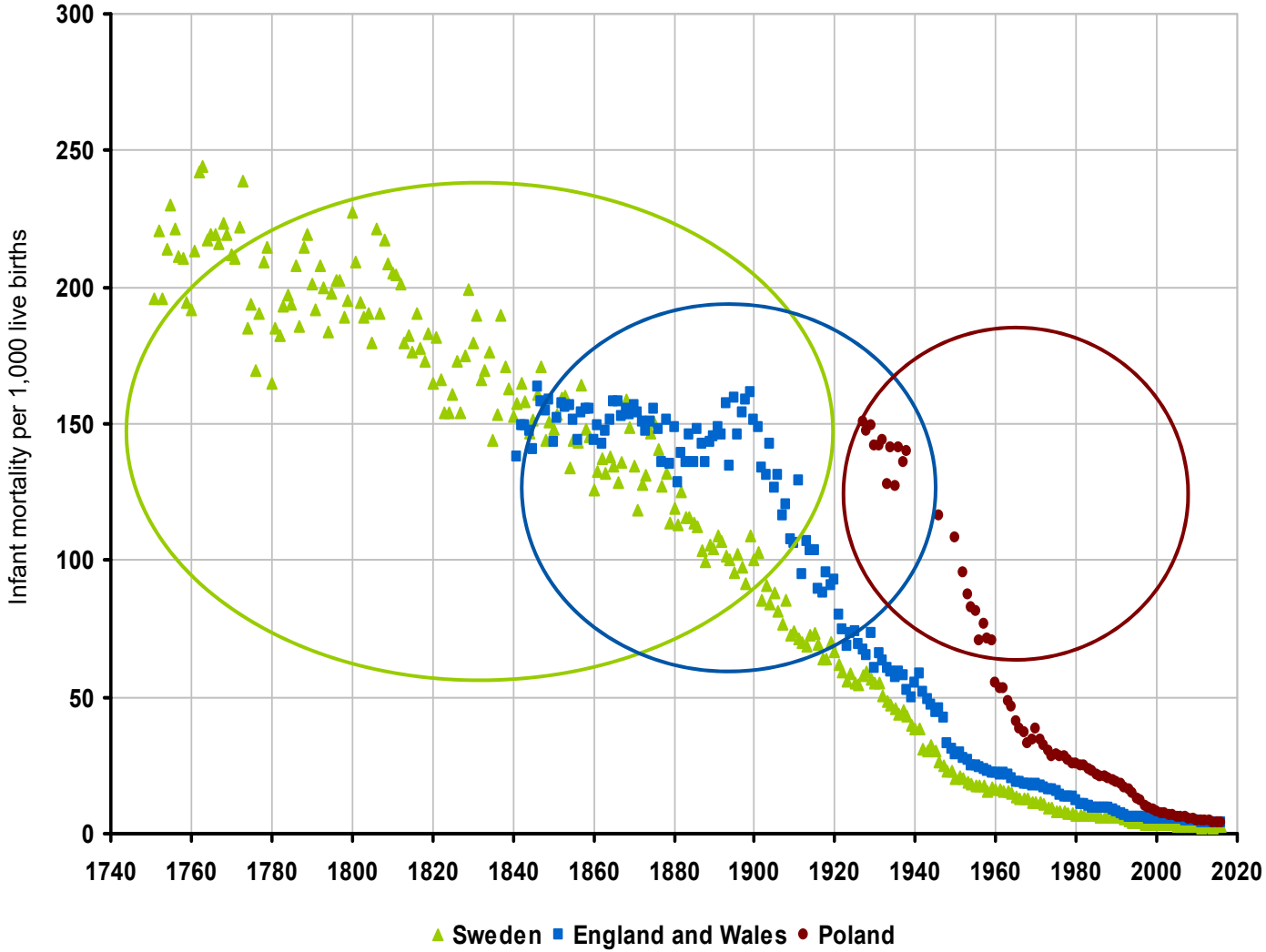
Sources: Zatoński WA, Zatoński M. Health in the Polish People's Republic. J Health Inequal 2016; 2 (1): 7-16.; Zatoński WA, Zatoński M. Democracy is healthier – health in Poland in the late 1980s and 1990s. J Health Inequal 2016; 2 (1): 17-24.; data for years 1910-1945: Mackenbach JP, Looman CW. Life expectancy and national income in Europe, 1900–2008: an update of Preston's analysis. International Journal of Epidemiology 2013; 42: 1100–1110; Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Three age groups, health transformation after WW II:

1. Infant/children (0-19)
2. Adult health (20-64)
3. Healthy ageing (65+)

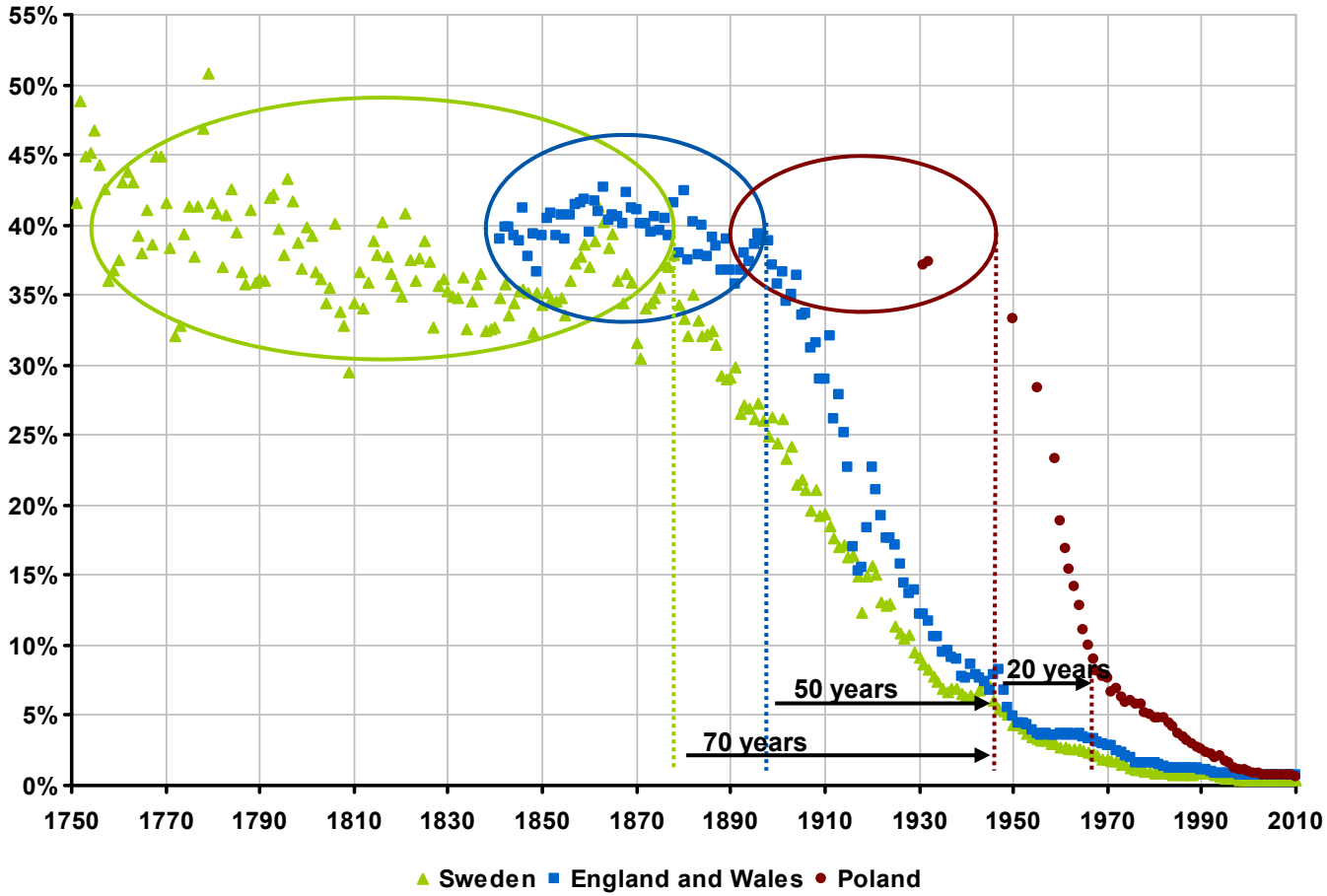
Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Infant mortality, both sexes, 1750-2016
Sweden, England and Wales, Poland



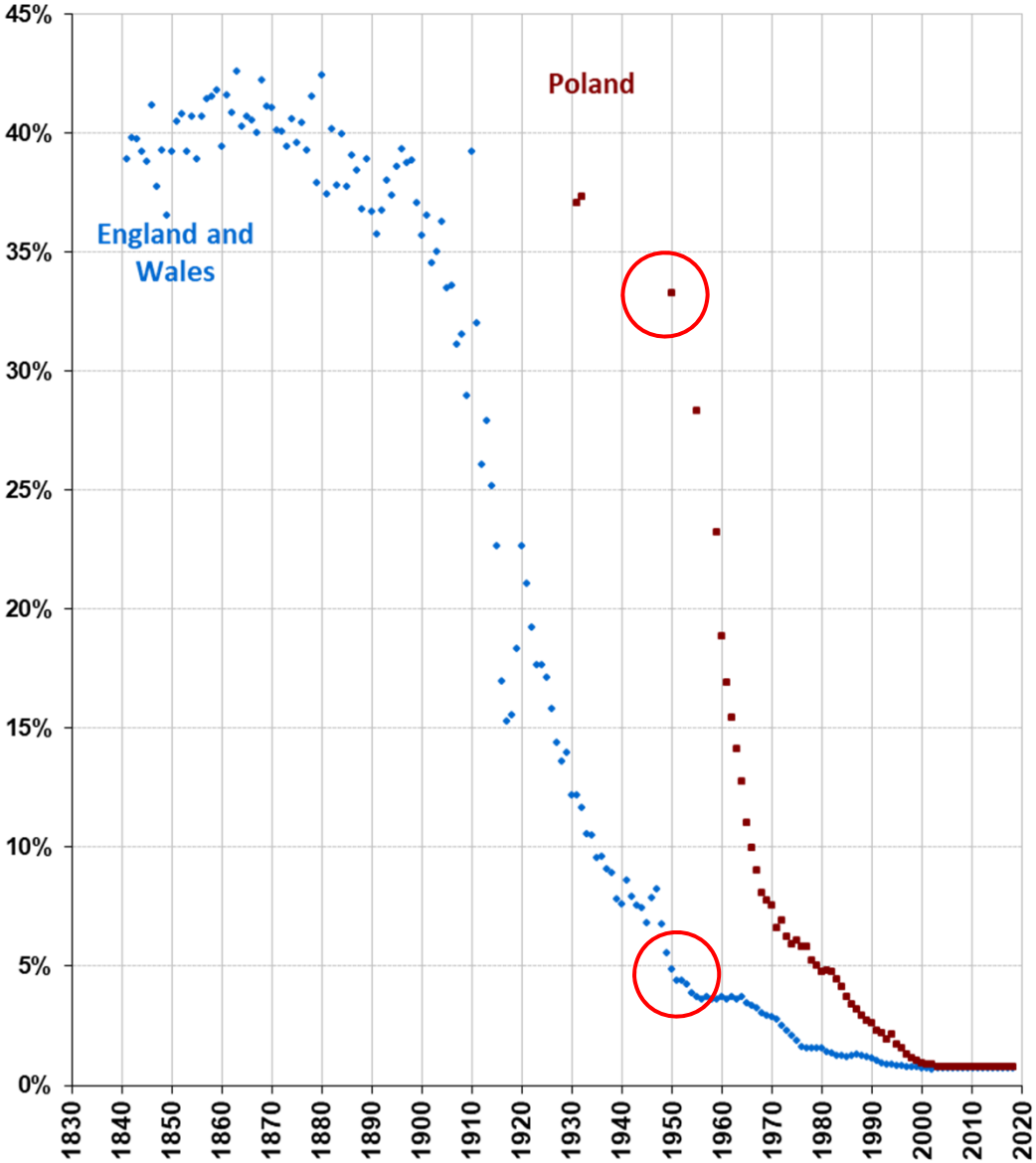
Source: Human Mortality Database: http://www.mortality.org/; WHO Mortality Database: http://www.who.int/healthinfo/mortality_data/en/; Zatoński WA, Zatoński M. Health in the Polish People's Republic. J Health Inequal 2016; 2 (1): 7–16; Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Percentage of death before the age of 5, Poland, Sweden, England and Wales, both sexes, 1750-2010



Sources: Human Mortality Database: http://www.mortality.org/; WHO Mortality Database: http://www.who.int/healthinfo/mortality_data/en/; GUS; Zatoński W, Zatoński M. Sytuacja zdrowotna (okres PRL). w : Noszczyk W. (red.) Dzieje medycyny w Polsce. (w druku); Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

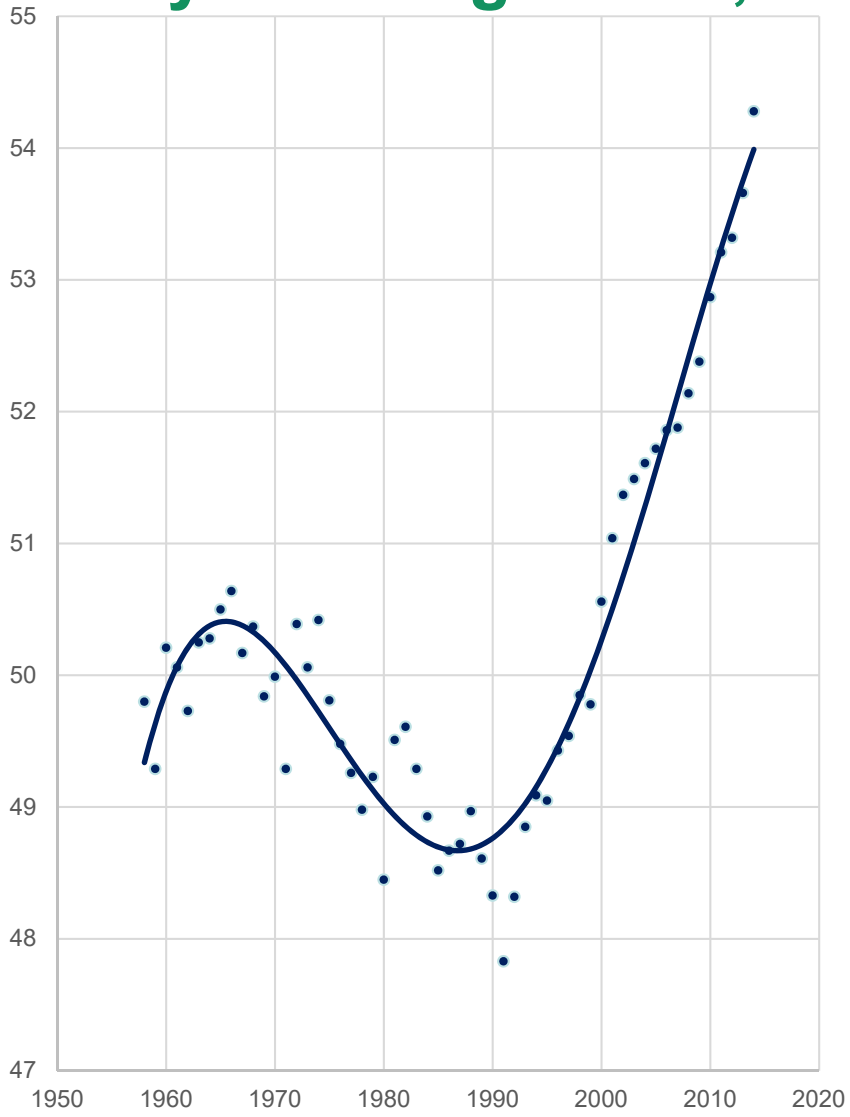
Percentage of deaths before the age of 5
Poland vs. England and Wales, both sexes



- **Epidemiological transformation (infectious diseases and infant mortality control)**
- **In 1950 in Poland around 35% of newborns died before 5 years of age**

Source: Zatoński W (ed.) and the HEM Project team. Closing the health gap in European Union. Cancer Center and Institute of Oncology, Warsaw, 2008. Available from: http://www.hem.waw.pl; Zatoński WA, Zatoński M. Health in the Polish People's Republic. J Health Inequal 2016; 2 (1): 7-16.

Life expectancy at the age of 20, men, Poland



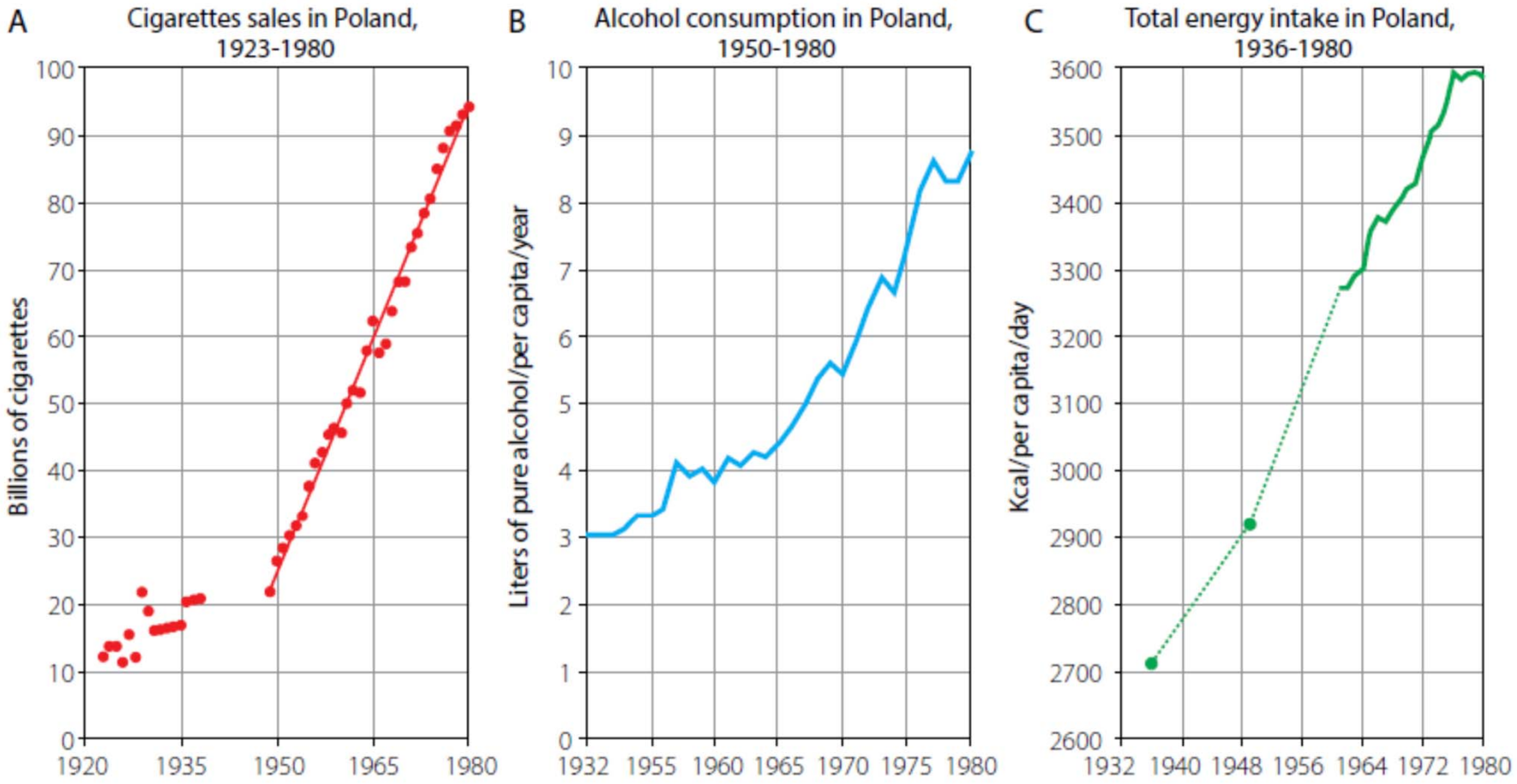
Source: The Human Mortality Database, http://www.mortality.org/; Zatoński WA, Zatoński M. Democracy is healthier – health in Poland in the late 1980s and 1990s. J Health Inequal 2016; 2 (1): 17-24; Zatoński W (ed.) and the HEM Project team. Closing the health gap in European Union. Cancer Center and Institute of Oncology, Warsaw, 2008. Available from: http://www.hem.waw.pl;

Key factors shaping life expectancy of Poles after WW II

1. Infant mortality/infectious diseases
2. Tobacco-related diseases
3. Dietary revolution
4. Alcohol-related diseases

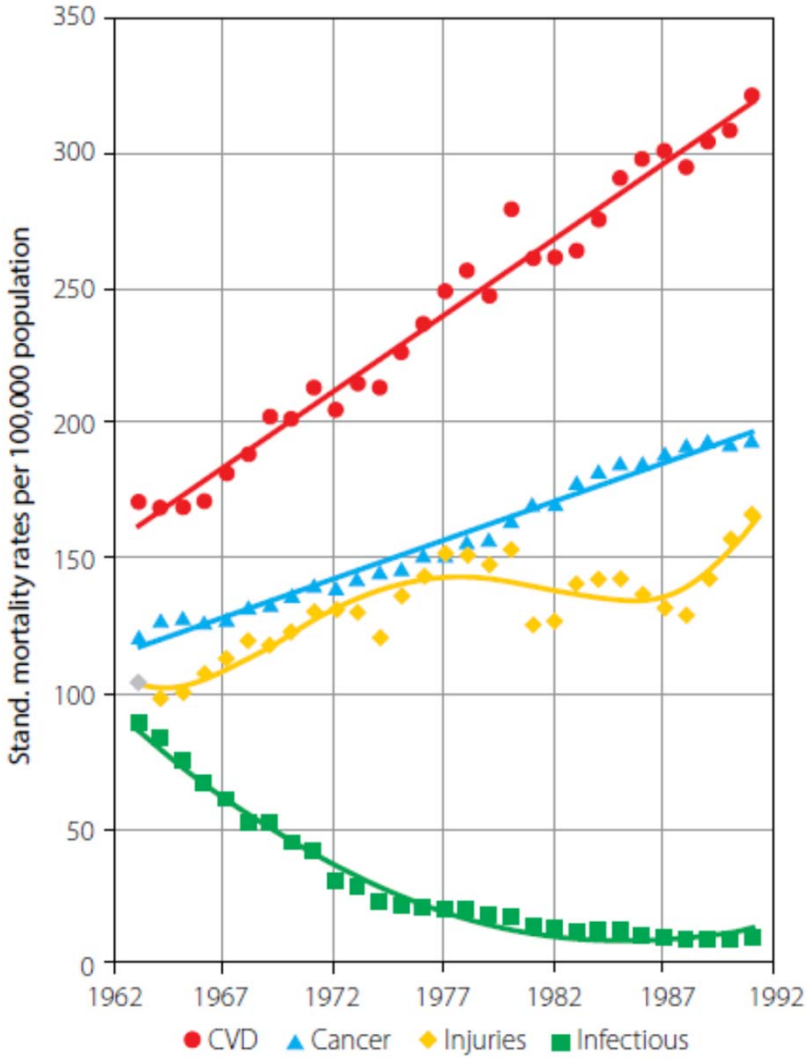
Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Cigarette sale, alcohol consumption, and caloric intake in Poland



Source: Zatoński WA, Zatoński M. Health in the Polish People's Republic. J Health Inequal 2016; 2 (1): 7-16.

Mortality of men aged 20-64, selected causes, Poland 1963-1991

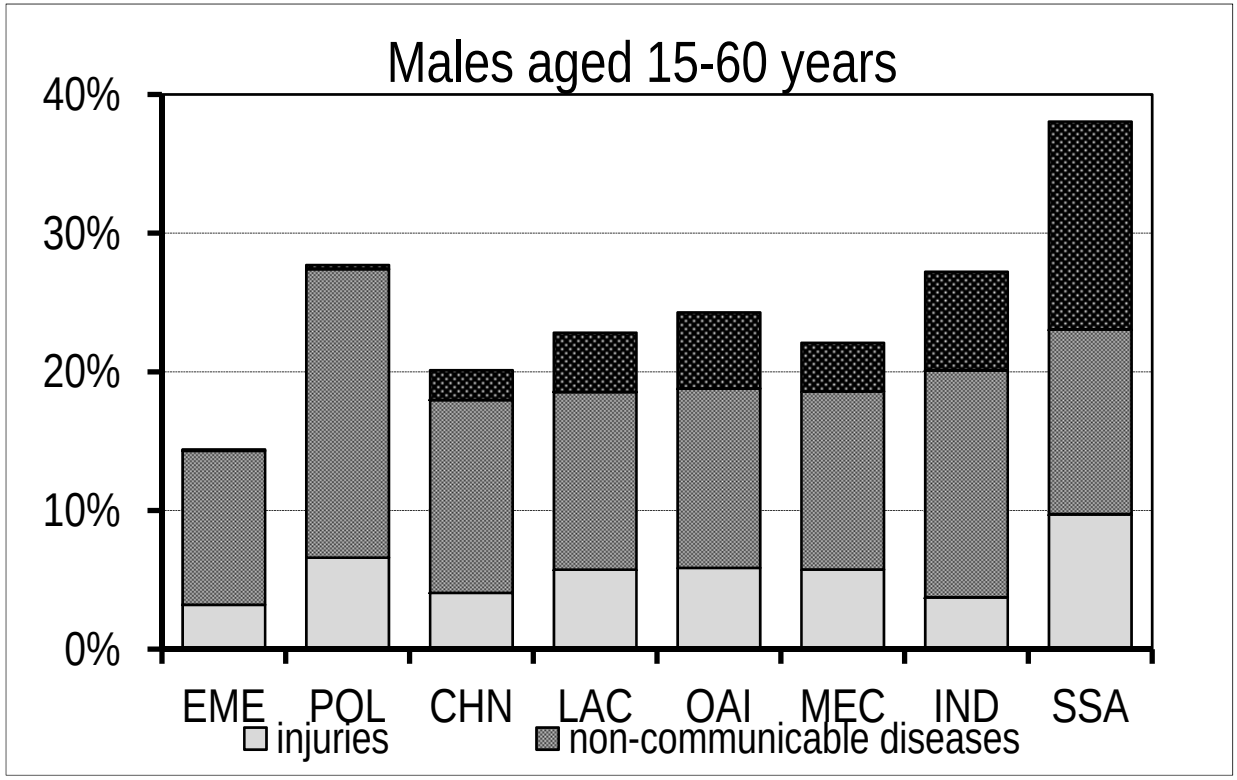


Source: Zatoński WA, Zatoński M. Health in the Polish People's Republic. J Health Inequal 2016; 2 (1): 7-16.

Probability of dying, males, Poland 1990

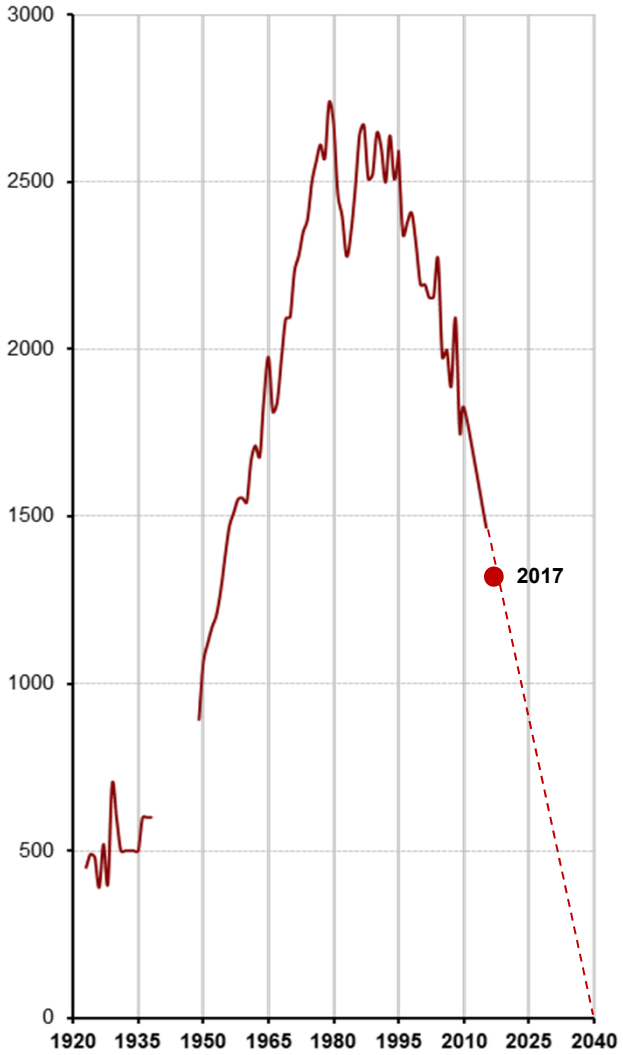
EME - Established Market Economies
POL - Poland
CHN - China
LAC - Latin America and the Caribbean

OAI - Other Asia and Islands
MEC - Middle Eastern Crescent
IND - India
SSA - Sub-Saharan Africa



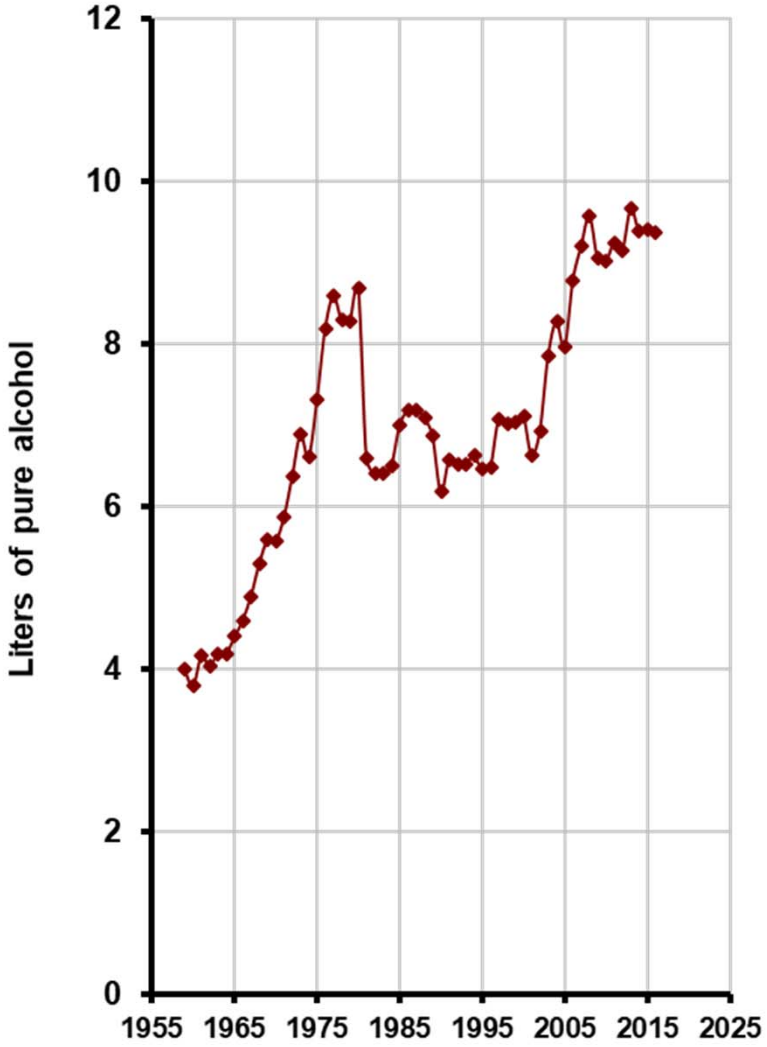
Source: Zatoński WA, Zatoński M. Sytuacja zdrowotna. W: Dzieje medycyny w Polsce, tom 3. Lata 1944-1989. Noszczyk W (red). Wydawnictwo Lekarskie PZWL, Warszawa 2016: 77-86; Zatoński WA, Zatoński M. Health in the Polish People's Republic. J Health Inequal 2016; 2 (1): 7-16.

Recorded per capita cigarette consumption in Poland, 1923-2015



Source: National Statistical Office

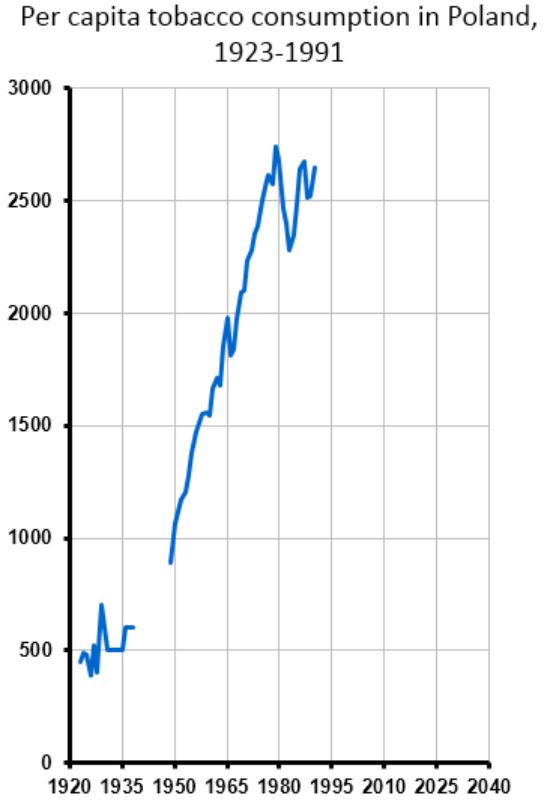
Recorded per capita (0+) alcohol consumption in Poland, 1959-2016



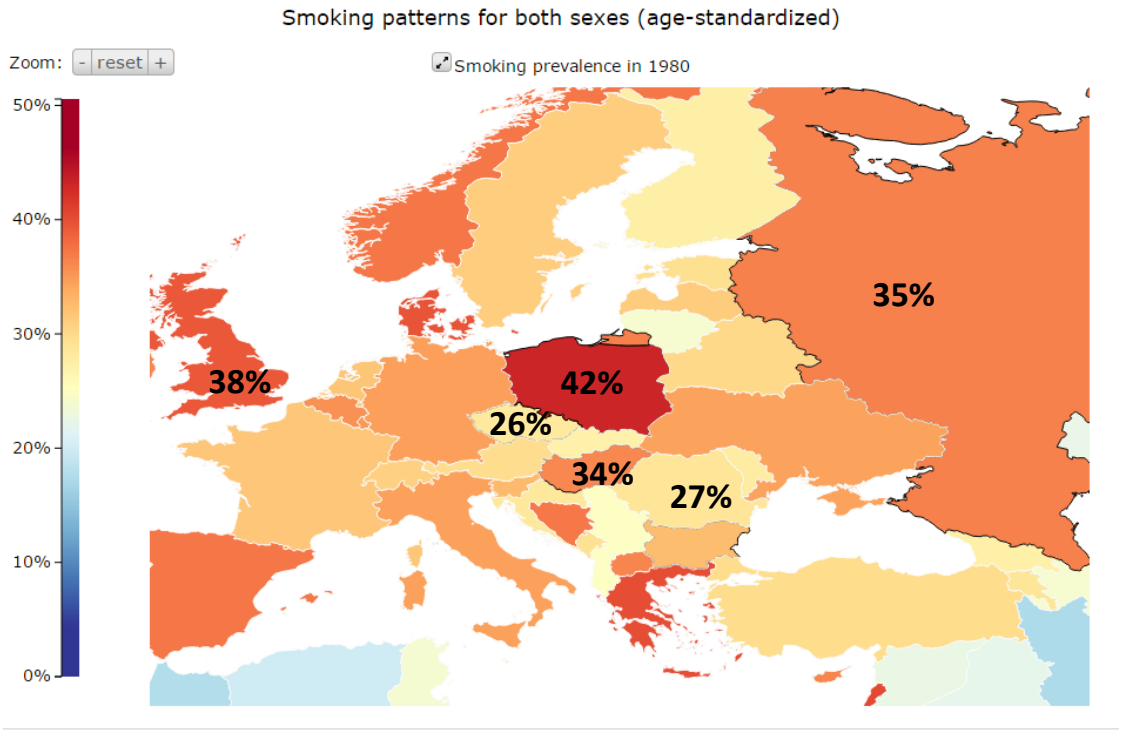
Source: The State Agency for the Prevention of Alcohol-related Problems (PARPA)

Sources: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Highest level of smoking in Europe (and the world) in 1980s



Source: Polish Office for General Statistics, 2012

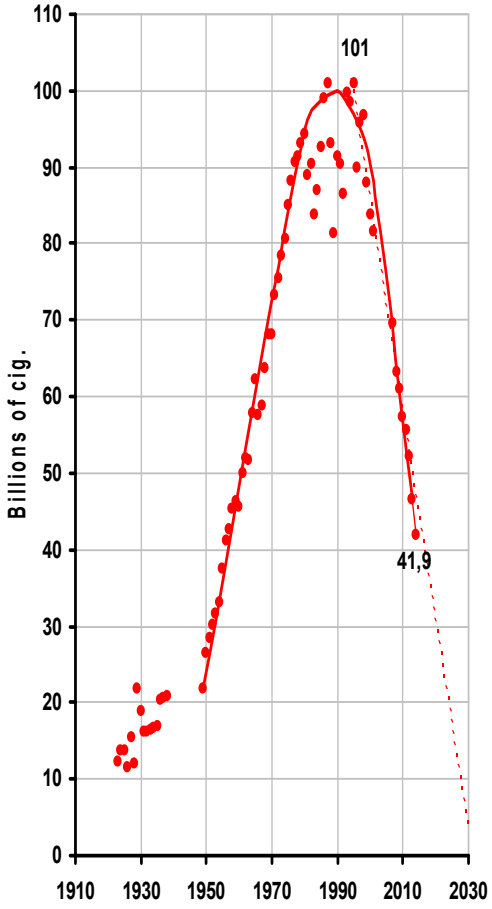


Source: Institute for Health Metrics and Evaluation, 2014

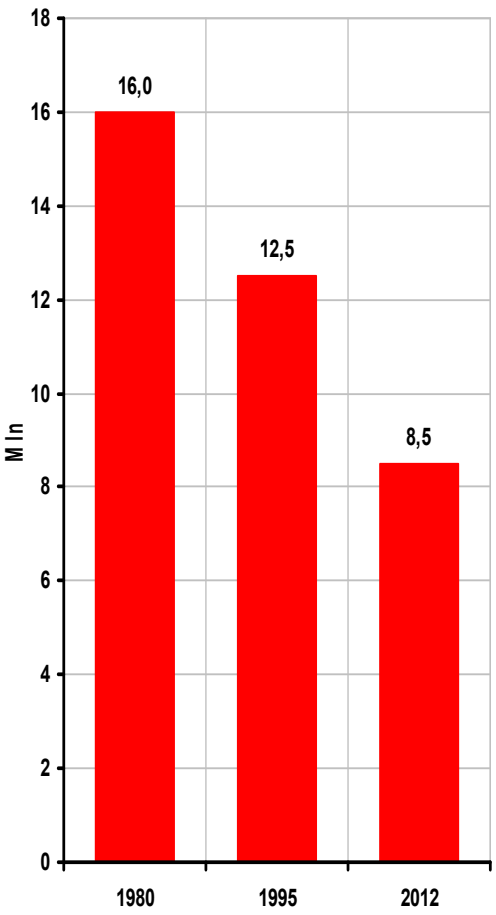
Source: Zatoński M. State, society, and the politics of smoking in Poland, during and after communism. Thesis submitted in accordance with the requirements for the degree of Doctor of Philosophy. University of London, 2018.

Cigarette consumption and smoking in Poland

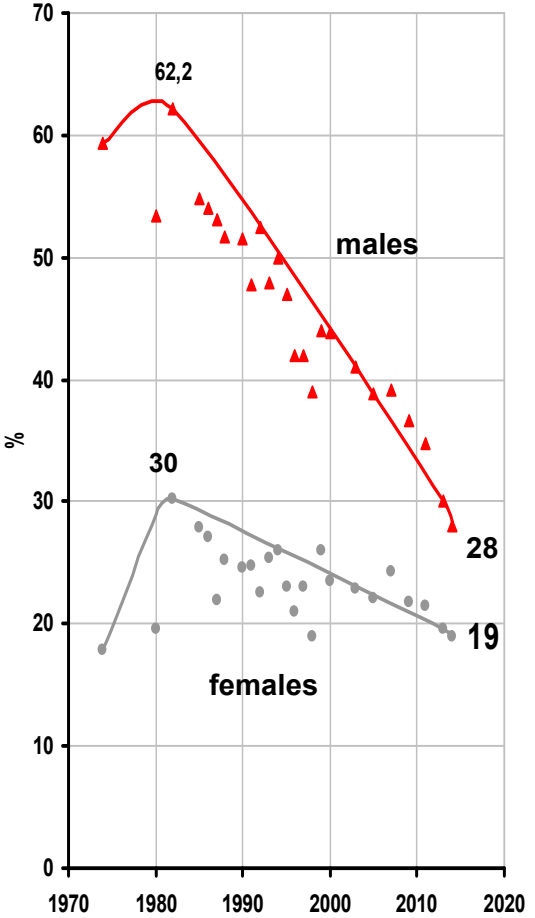
Tobacco sales in Poland, 1923-2014



The number of smokers in Poland

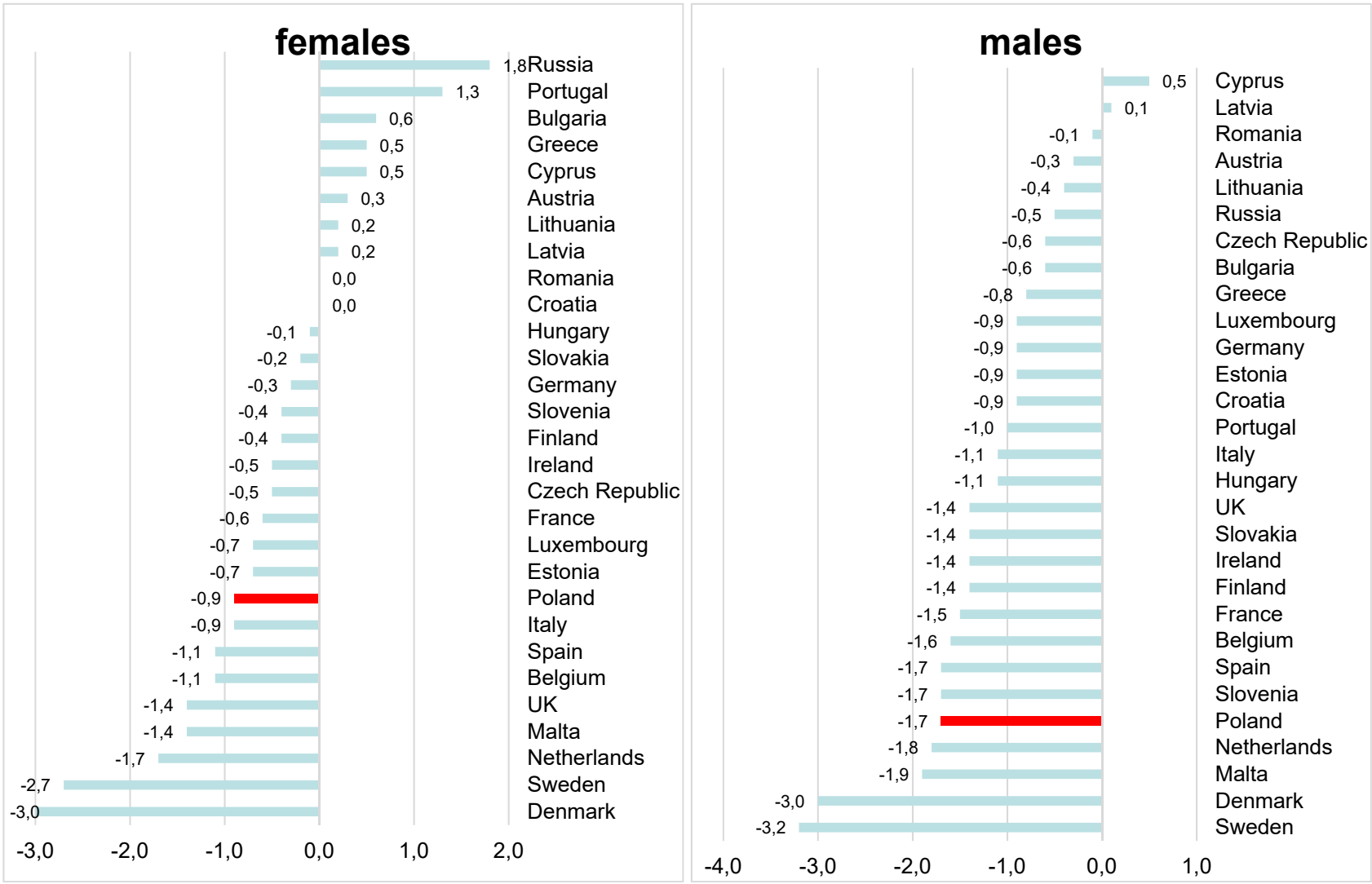


Daily smoking by gender, 15+, Poland 1974-2013



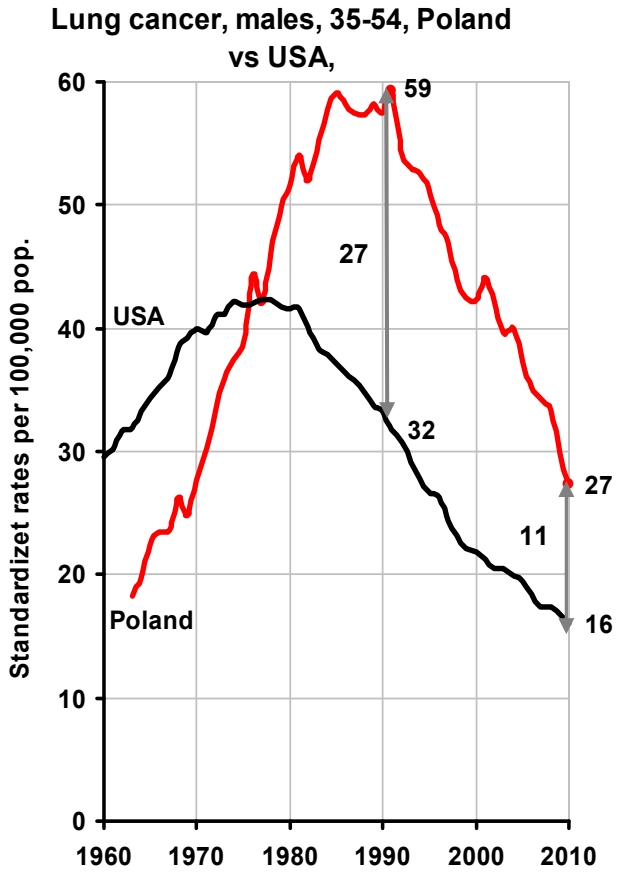
Sources: Zatoński W, Przewoźniak K, Sulkowska U, West R, Wojtyła A. Tobacco smoking in countries of the European Union. Annals of Agricultural and Environmental Medicine. 2012;19;2:181-192; Czapiński J, Panek T. (red.). Diagnoza Społeczna 2013.; Dziennik Gazeta Prawna, 11 września 2014; Zatoński WA, Sulkowska U, Didkowska J. Kilka uwag o epidemiologii nowotworów w Polsce. Nowotwory Journal of Oncology, 2015;65;3:179-196; Zatoński WA, Zatoński M, Janik-Koncewicz K, Połtyn-Zaradna K, Wijatkowska K, Marciniak A. Hundred years of cigarette smoking in Poland: three phases of the tobacco epidemic. J Health Inequal 2017; 3(2): 118-122.

Annualized rate of change in smoking prevalence, 1990-2015



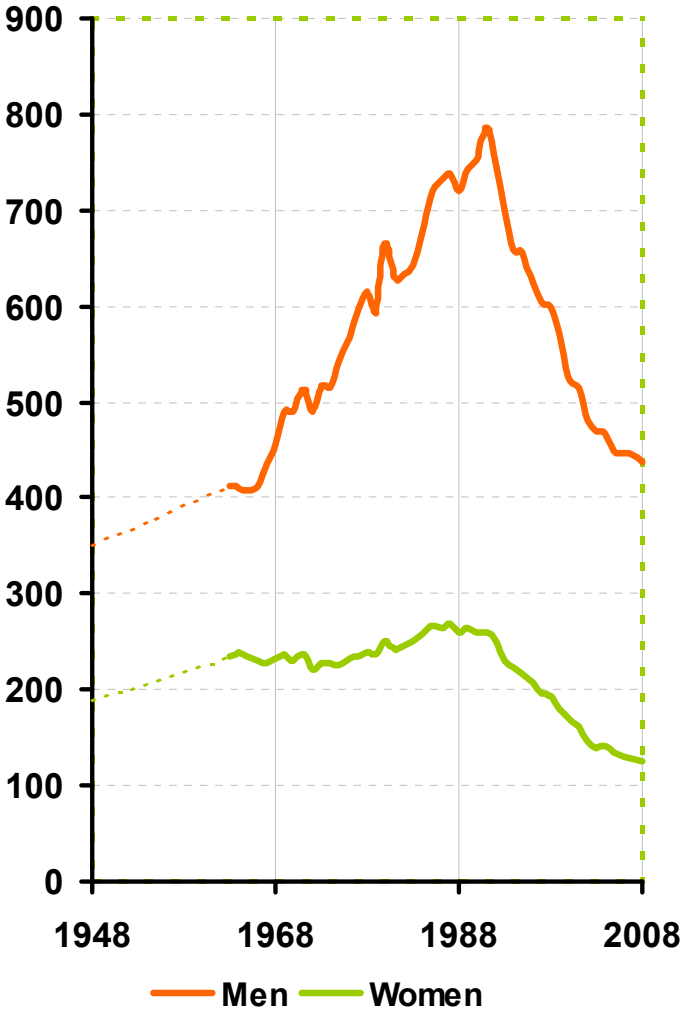
Sources: GBD 2015 Tobacco Collaborators. Smoking prevalence and attributeable disease burden in 195 countries and territories, 1990-2015: a systematic analysis from the Global Burden of Disease Study 2015. Lancet 2017; 389 (10082): 1885-1906; Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Very high levels of lung cancer mortality until 1990s



Sources: Zatoński WA, Zatoński M, Janik-Koncewicz K, Połtyn-Zaradna K, Wijatkowska K, Marciniak A. Hundred years of cigarette smoking in Poland: three phases of the tobacco epidemic. J Health Inequal 2017; 3(2): 118-122; Zatoński WA, Tukiendorf A and HPF team. Lung cancer mortality decline among middle-aged men and women in Poland and the UK. J Health Inequal 2017; 3(2): 123-126. Zatoński WA, Zatoński M. Poland's rapid lung cancer decline in the years 1990-2016. The first step towards the eradication of lung cancer in Poland. Health Prob Civil 2017; 11(4): 211-225.

Mortality trends from CVD, Poland, ages 45-64

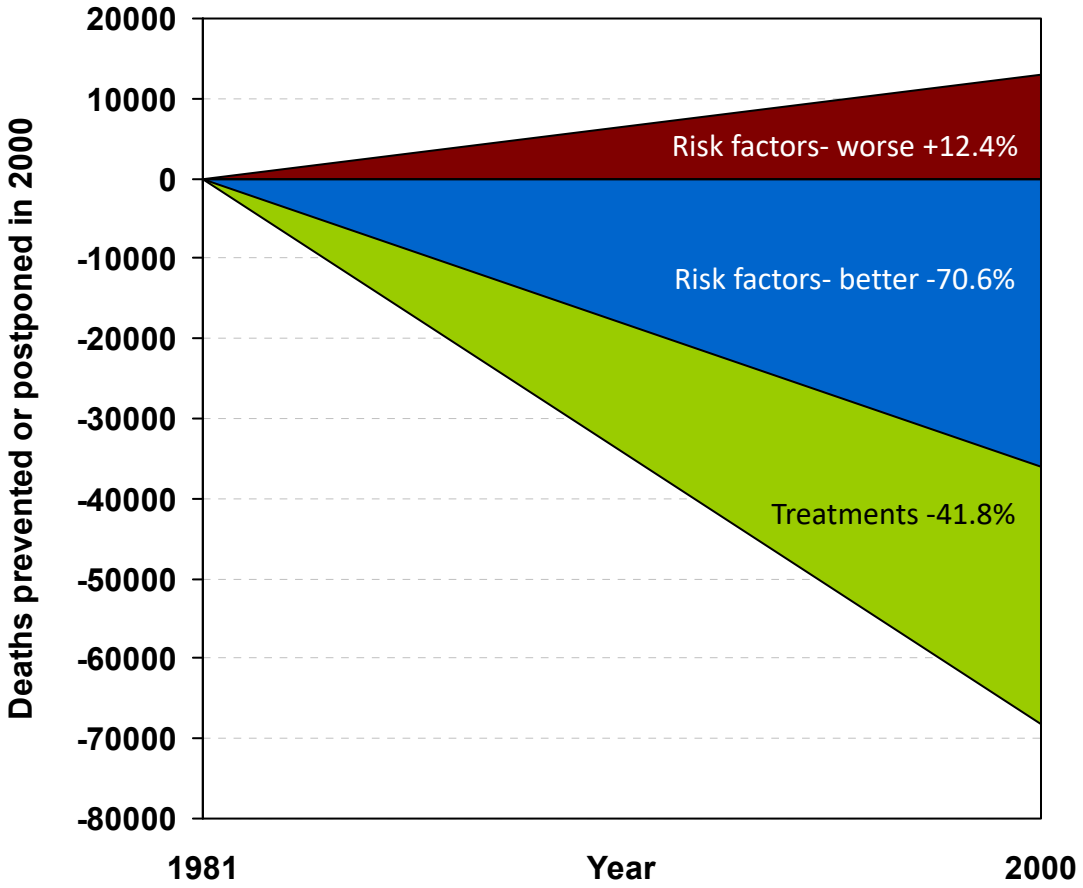


„Democracy" is healthier

- In Poland CVD increase ended around 1990.

Source: Zatoński W, Bhala N. Changing trends of diseases in Eastern Europe: Closing the gap. Public Health 2012; 126(3): 248-252.

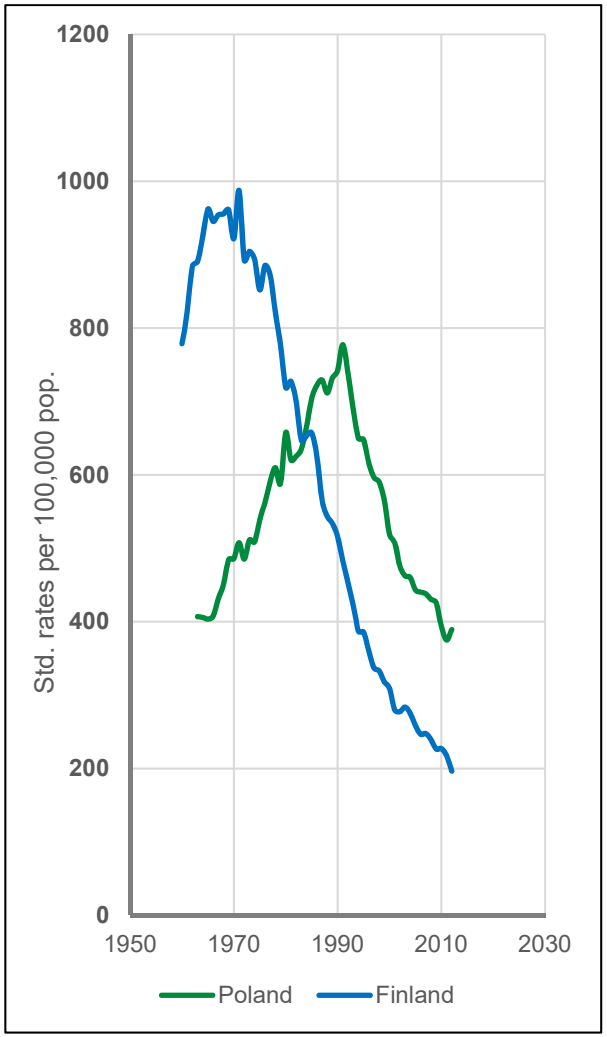
Explaining the fall in CHD deaths in England & Wales 1981-2000



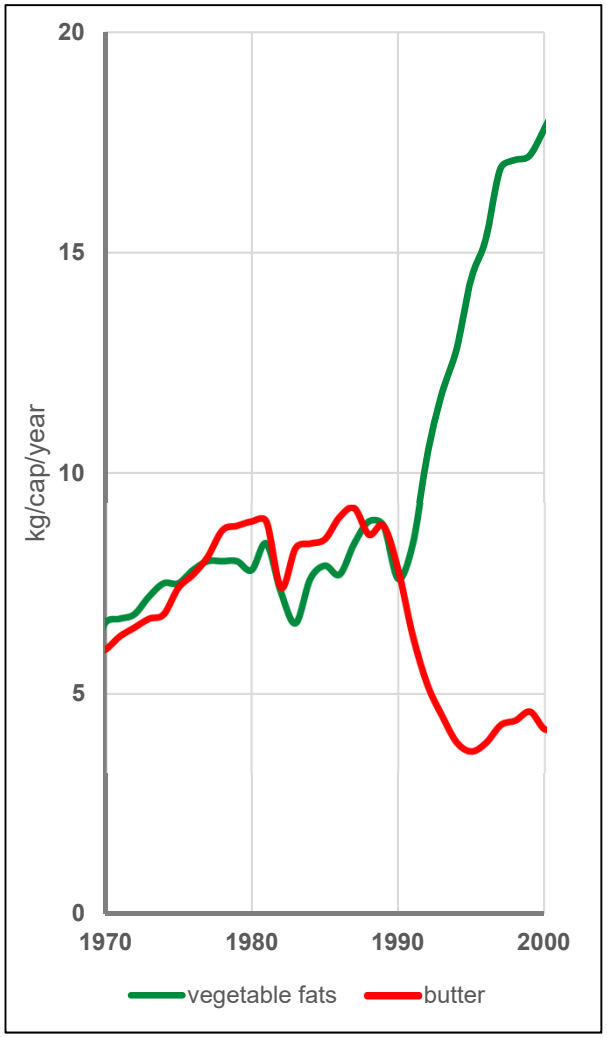
- Risk Factors -58.2%
  - Smoking -48.1%
  - Population BP -9.5%
  - Cholesterol -9.6%
  - Other factors +9.0%
- Treatments -41.8%
  - AMI treatments -7.7%
  - Total secondary prevention -11.2%
  - Heart failure -12.6%
  - Other treatments -10.3%

Source: Unal B, Critchley JA, Capewell S. Explaining the decline in coronary heart disease mortality in England and Wales between 1981 and 2000. Circulation. 2004 Mar 9;109(9):1101-7. Epub 2004 Mar 1.

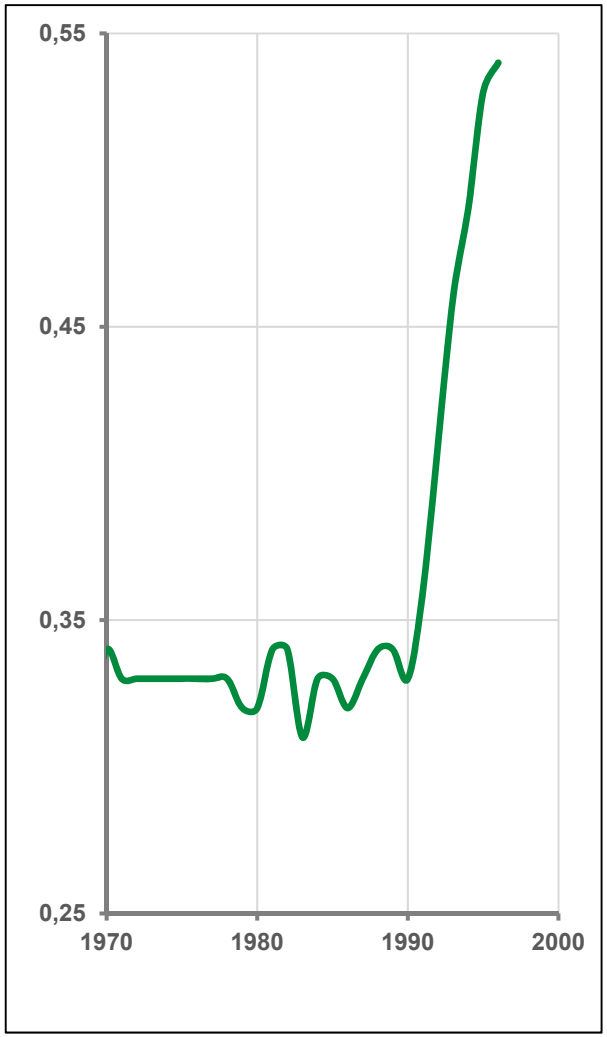
(A) Cardiovascular disease mortality in men aged 45-64 in Poland



(B) Vegetable fats and butter intake in Poland, 1970-2000

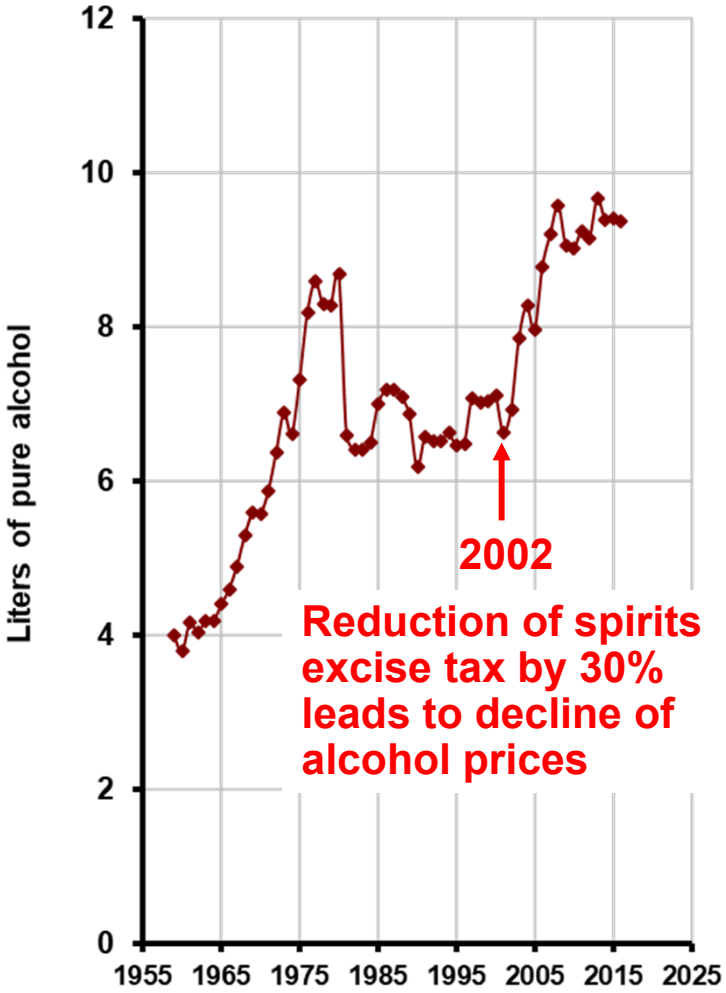


(C) Polyunsaturated vs. saturated fatty acids (P:S) ratio in Poland

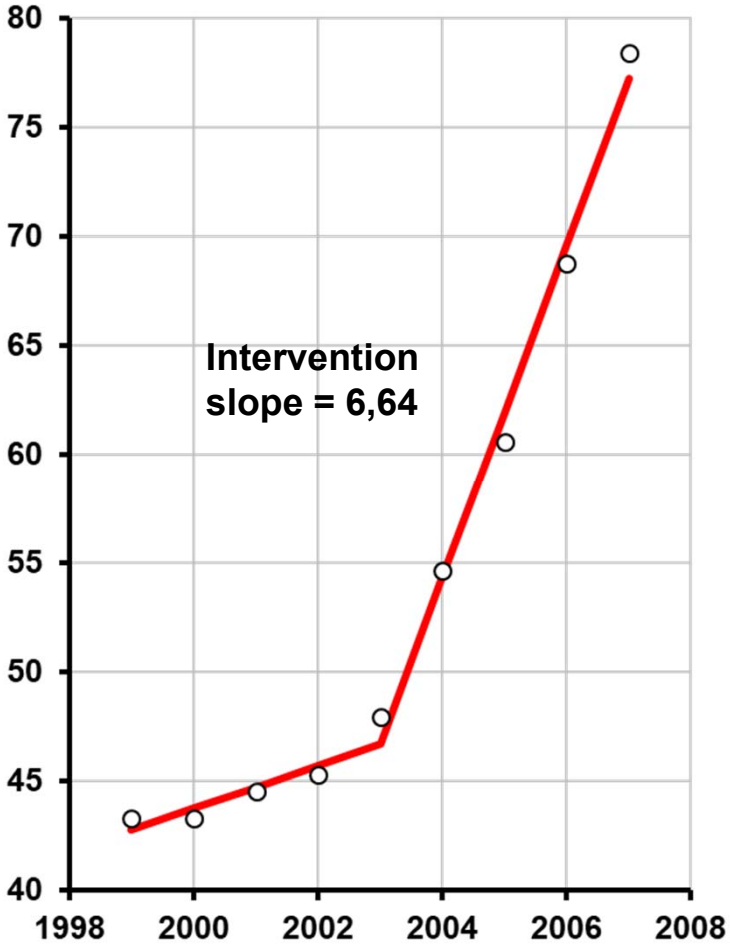


Sources: (A-B) Janik-Koncewicz K. Zatoński WAZ, Herbeć A, Zatońska K. Unsaturated fat and cardiovascular health in Poland. J Health Equal 2016; 2(1): 63-66. (C) Zatoński WA, Janik-Koncewicz K. Nutrition and public health. J Health Equal 2016; 2(1): 61-62; Zatoński W and the HEM Project team. Closing the health gap in European Union. Cancer Center and Institute of Oncology, Warsaw 2008; Zatoński W, Willett W. Changes in dietary fat and declining coronary heart disease in Poland: population based study. BMJ 2005; 331: 187-188; Zatonski W, Campos H, Willett W. Rapid declines in coronary heart disease mortality in Eastern Europe are associated with increased consumption of oils rich in alpha-linolenic acid. Eur J Epidemiol 2008; 23(1): 3-10.

Recorded per capita (0+) alcohol consumption in Poland, 1959-2016



Alcohol-attributable mortality, males, Poland, ages 45-64, 1999-2007



Intervention slope = rise from year to year related to the intervention

Since the price decrease in 2002 the mortality rates for AAF increase by 6,64/100,000 annually

Source: Zatoński WA, Sulkowska U, Zatoński M, Herbeć A, Muszyńska M. Alcohol taxation and premature mortality in Europe. Lancet 2015; 385(9974): 1181.

2 Bonds DE, Miller ME, Bergenstal RM, et al. The association between symptomatic, severe hypoglycaemia and mortality in type 2 diabetes: retrospective epidemiological analysis of the ACCORD study. BMJ 2010; 340: b4909.

Alcohol taxation and premature mortality in Europe

Europe has the highest premature mortality attributable to alcohol in the world.[1] Despite WHO's emphasis on the importance to restrict alcohol consumption with fiscal measures, the Lithuanian (in 1999), Polish (in 2002), and Finnish (in 2004) Governments all lowered excise taxation of alcoholic spirits by 44%, 30%, and 44%, respectively. These decisions led to instant and striking effects on health, which have been described elsewhere for Lithuania[2] and Finland.[3]

Decreases in alcohol prices in Poland provided a so-called one-factor natural experiment[4]—allowing the effects of this factor to be observed—whereby no other reforms in alcohol distribution, availability, or regulation were introduced. Additionally, no changes were noted in other factors that could affect mortality and morbidity in Poland, and the gross-domestic product of this country was steadily increasing. In Poland, reductions to vodka prices were followed by an abrupt increase in recorded alcohol sales from 7 L per capita in 2002 to almost 10 L per capita in 2008,[4] and a yearly increase in mortality rates attributable to alcohol of 6·64 deaths per 100 000 in men aged 45–64 years (unpublished). Before alcohol prices were lowered, Poland was one of the countries in Europe with the most dynamic health improvements showing a large and steady decrease in mortality (figure). After the change to alcohol prices, Poland and Finland's improvements in mortality slowed and Lithuania's mortality in men worsened. In 2008, alcohol prices were increased again in Poland and the rate of decreasing premature mortality returned to the same levels before 2002 (unpublished).

The Russian Government announced that it would reduce the price of vodka by 16% in February, 2015. Similar to Poland, this decision follows a period of rapid improvements to health. After 50 years of stagnation, the health indicators of the Russian population, especially of young and middle-aged men, have been improving since 2005.[5] As with Lithuania, Poland, and Finland, the decision to lower alcohol prices will probably contribute to halting this health transformation in Russia, especially because vodka consumption continues to be a key contributor to its high rates of premature mortality.[6]

Lithuania, Poland, and Finland increased alcohol taxes a few years after reducing them. We find it difficult to understand why Russia would be willing to repeat the same mistakes as its neighbouring countries rather than learning from them.

We declare no competing interests.

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1 Boyle P, Boffetta P, Lowenfels AB, et al. Alcohol: science, policy and public health. Oxford: Oxford University Press, 2013.
2 Grabauskas V, Prochorskas R, Veryga A. [Associations between mortality and alcohol consumption in Lithuanian population]. Medicina (Kaunas) 2009; 45: 1000–12 (in Lithuanian).
3 Makela P, Osterberg E. Weakening of one more alcohol control pillar: a review of the effects of the alcohol tax cuts in Finland in 2004. Addiction 2009; 104: 554–63.
4 Central Statistical Office. Statistical yearbook of the Republic of Poland 2010. Warsaw: Statistical Publishing Establishment, 2010.

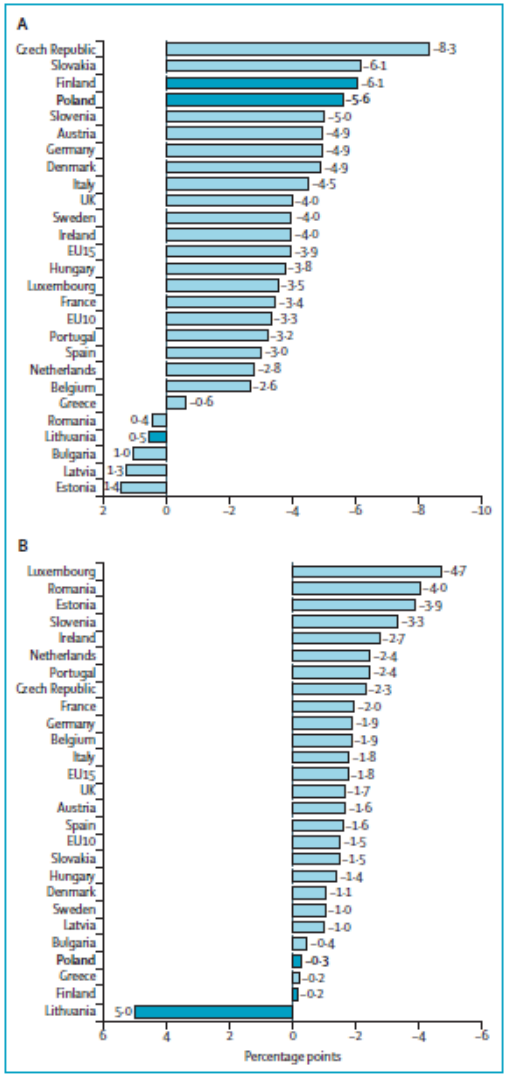
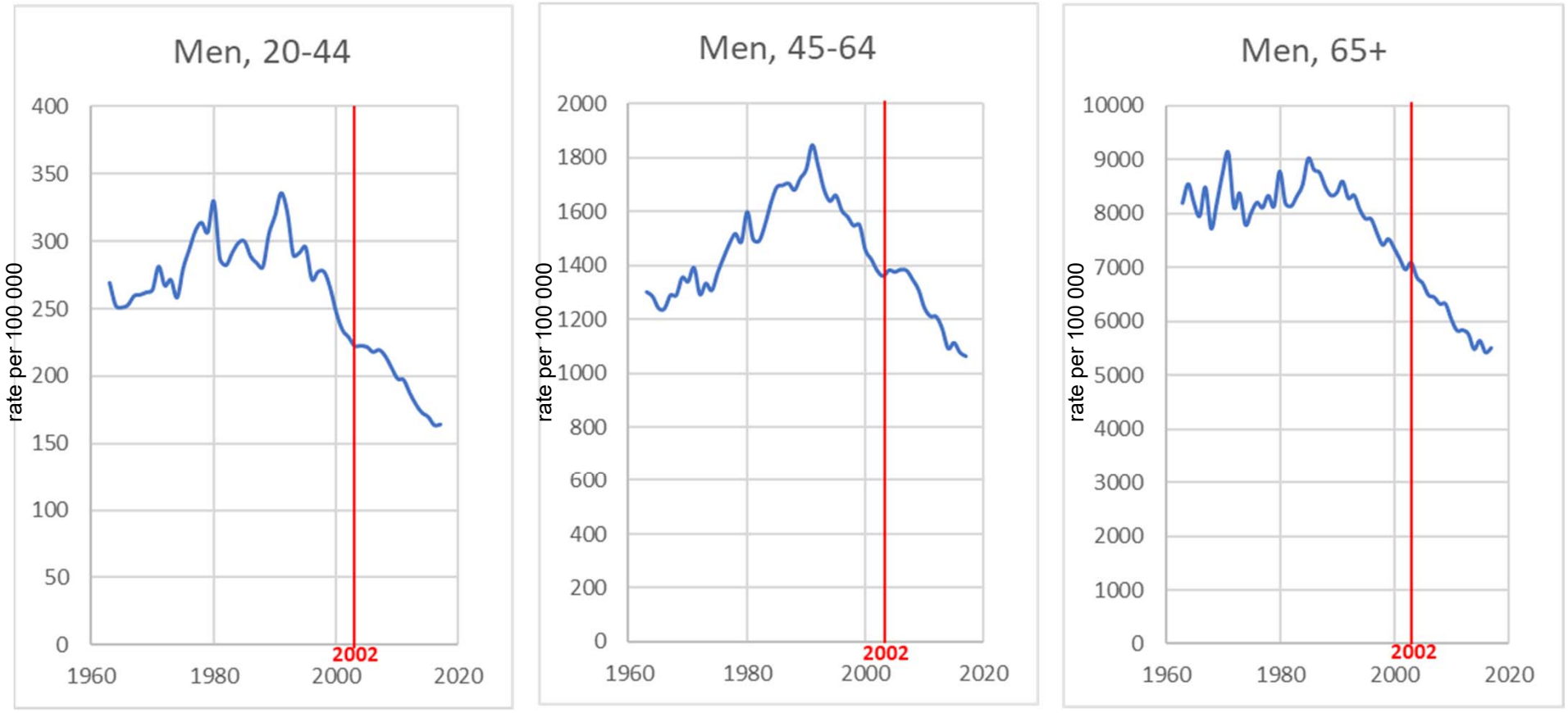


Figure: Changes in probability of mortality in men aged 20–64 years in Europe
Probability of mortality for men in 1990 versus 2000 (A) and 2002 versus 2007 (B). Probability of a man aged 20 years dying before 65 years is expressed as a percentage, and change in probability between the two year dates is shown in percentage points. Data are from the WHO Mortality Database (http://www.who.int/healthinfo/mortality_data/en/).

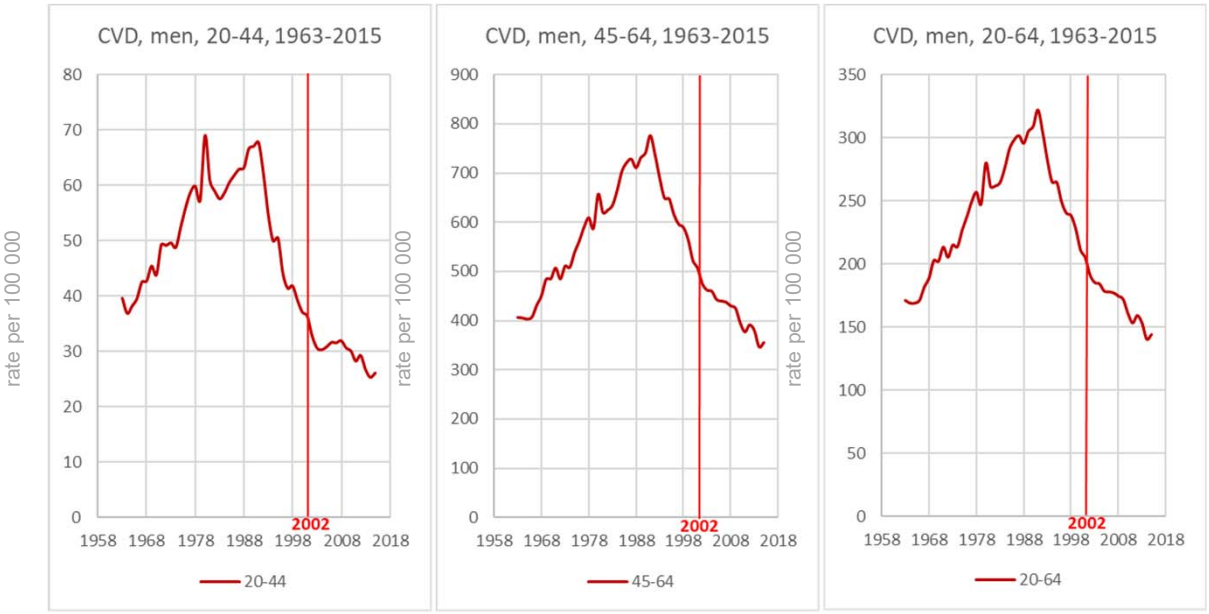
5 Popova LA. The results of the modern demographic policy in Russia. Int J Reg Devel 2014; 1: 26–38.
6 Zaridze D, Lewington S, Boroda A, et al. Alcohol and mortality in Russia: prospective observational study of 151 000 adults. Lancet 2014; 383: 1465–73.

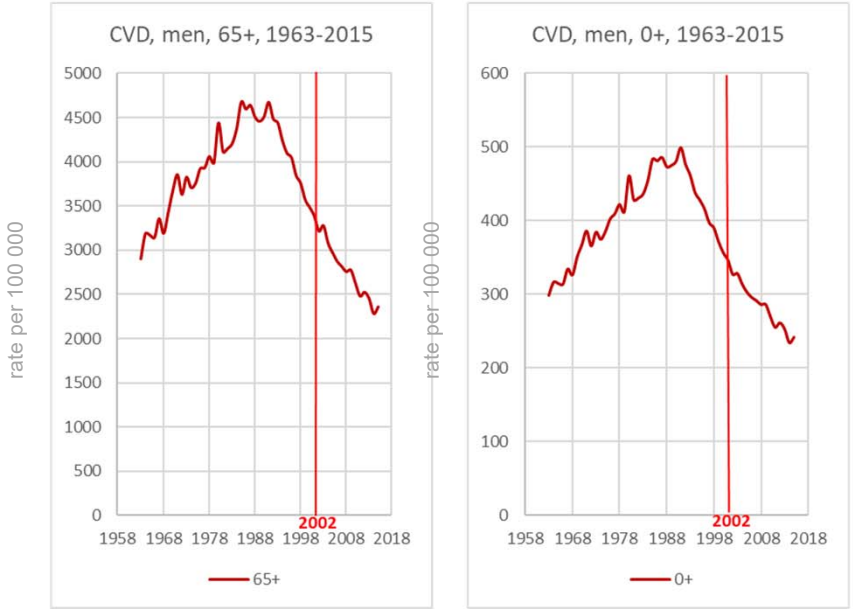
All mortality rates, 1960-2016, Poland



Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Morality trends from CVD, Poland

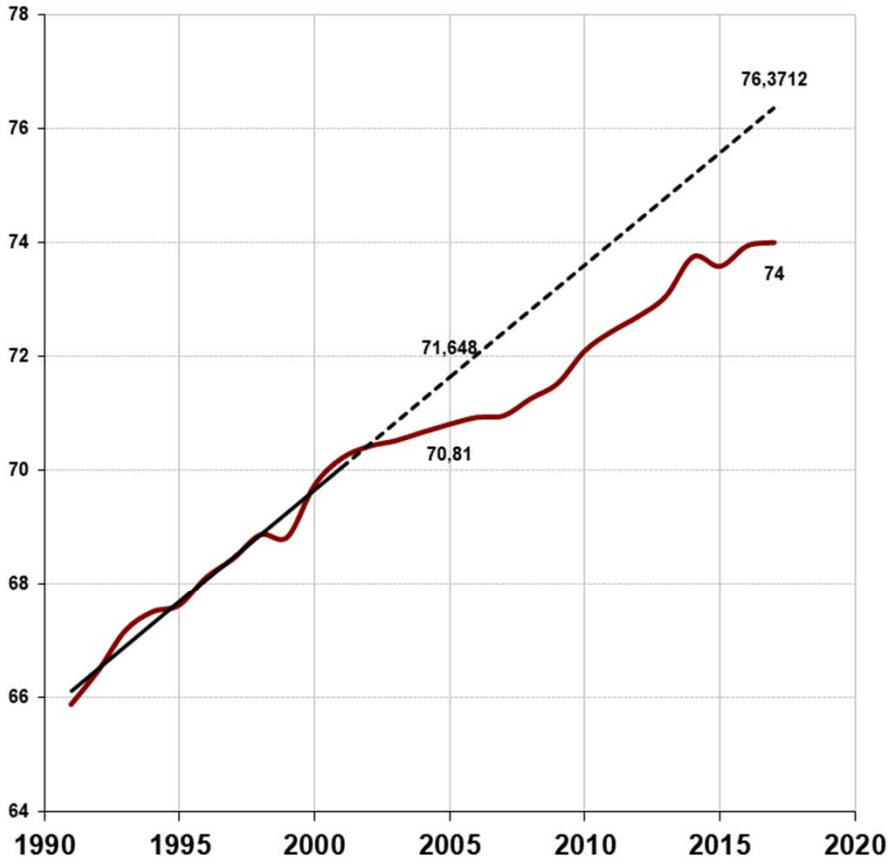




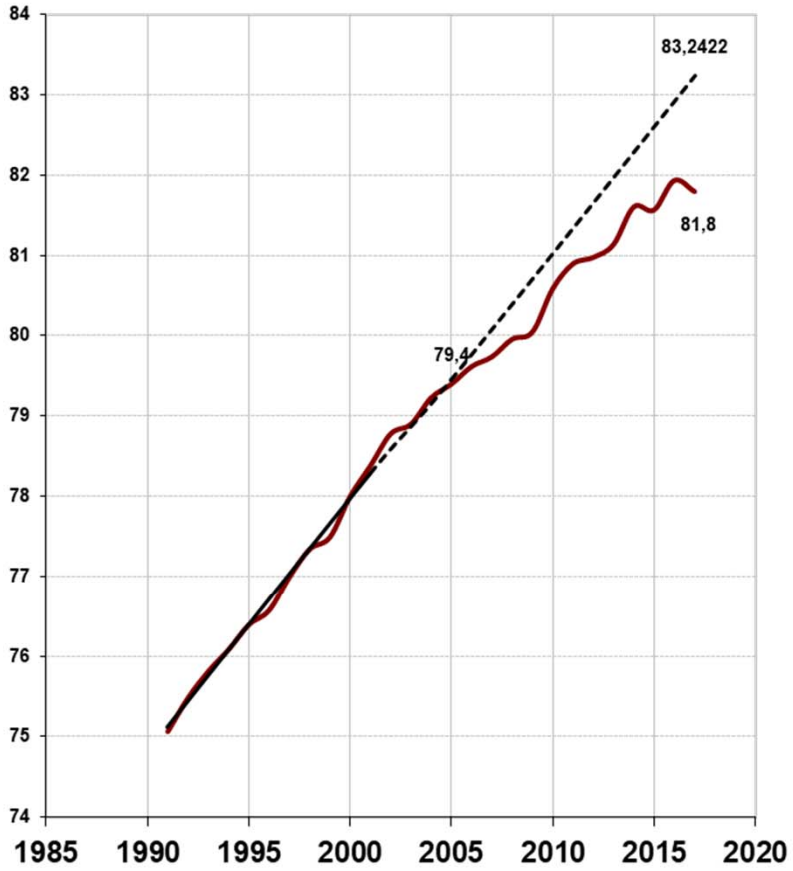
Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Life expectancy at birth in Poland, 1991-2017

Men

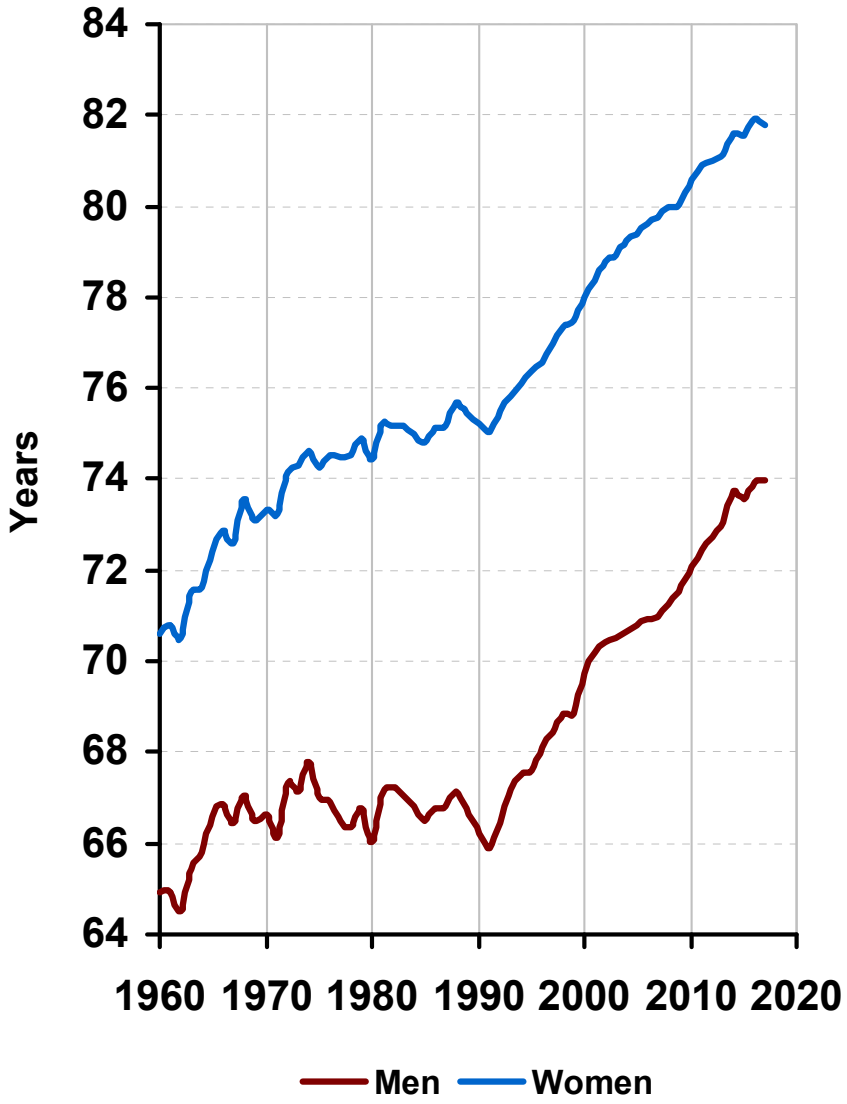


Women



Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Life expectancy at birth in Poland, 1960-2017

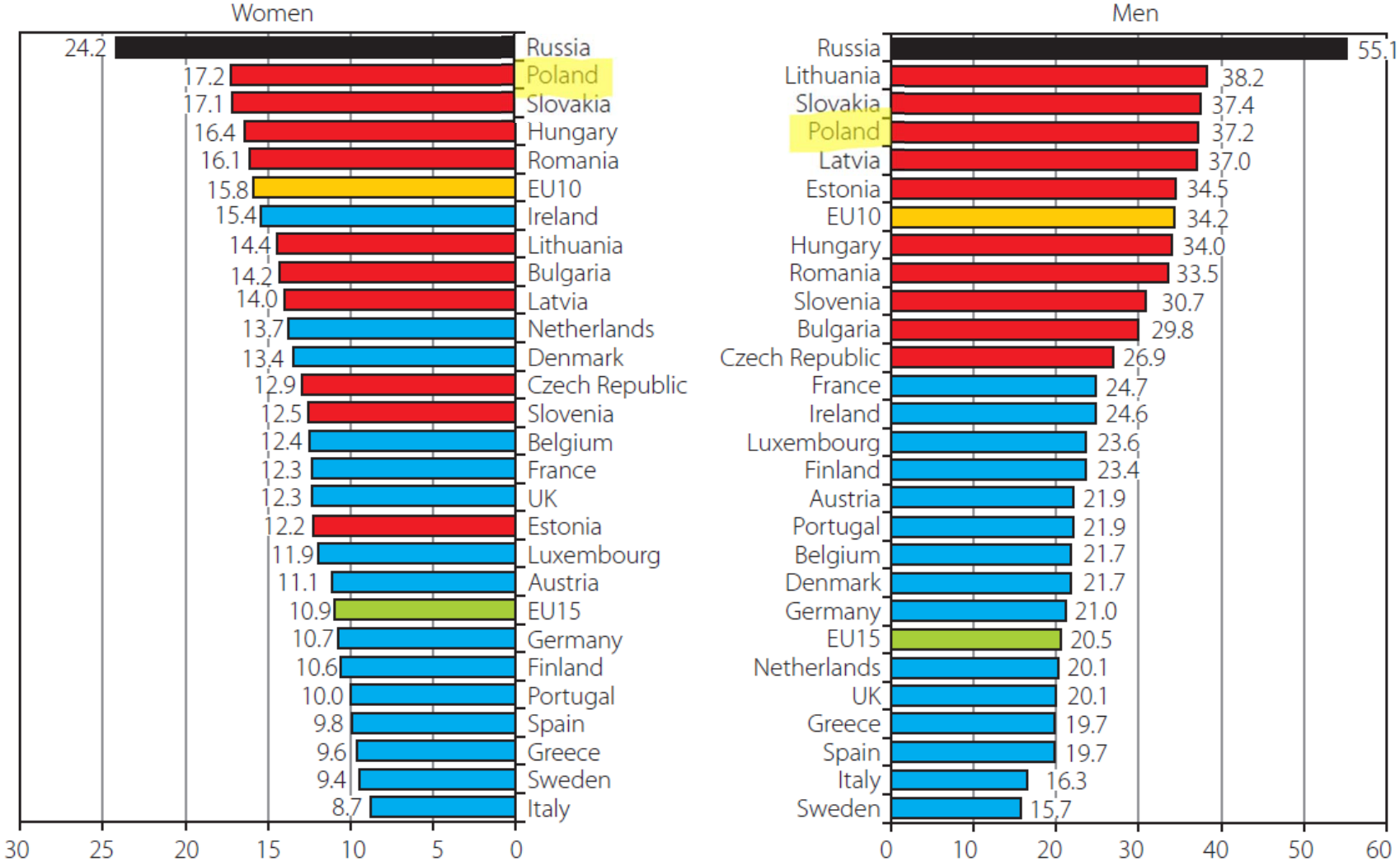


Annual change (women):
1991-2002: 5,0%
2003-2007: 0,2%
2008-2014: 0,3%
2014-2018: no change

Annual change (men):
1991-2002: 6,9%
2003-2007: 0,1%
2008-2014: 0,6%
2014-2018: no change

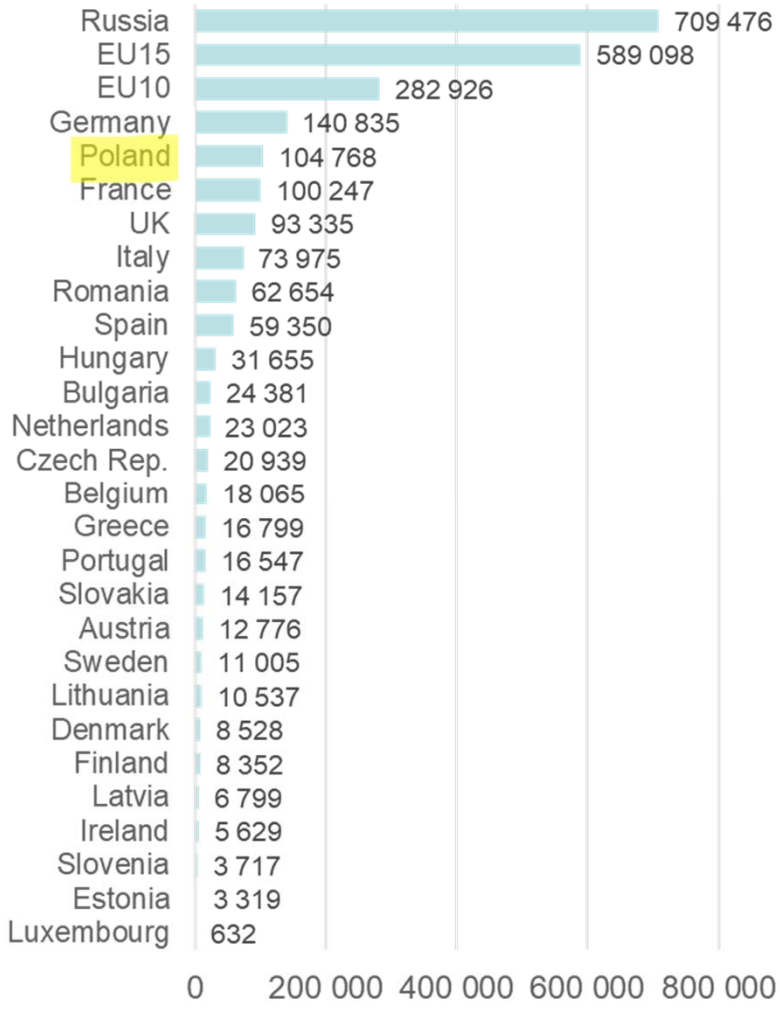
Sources: Central Statistical Office, Poland.; Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).

Percentage of deaths in European countries in 2014 which occur in men and women under the age of 65



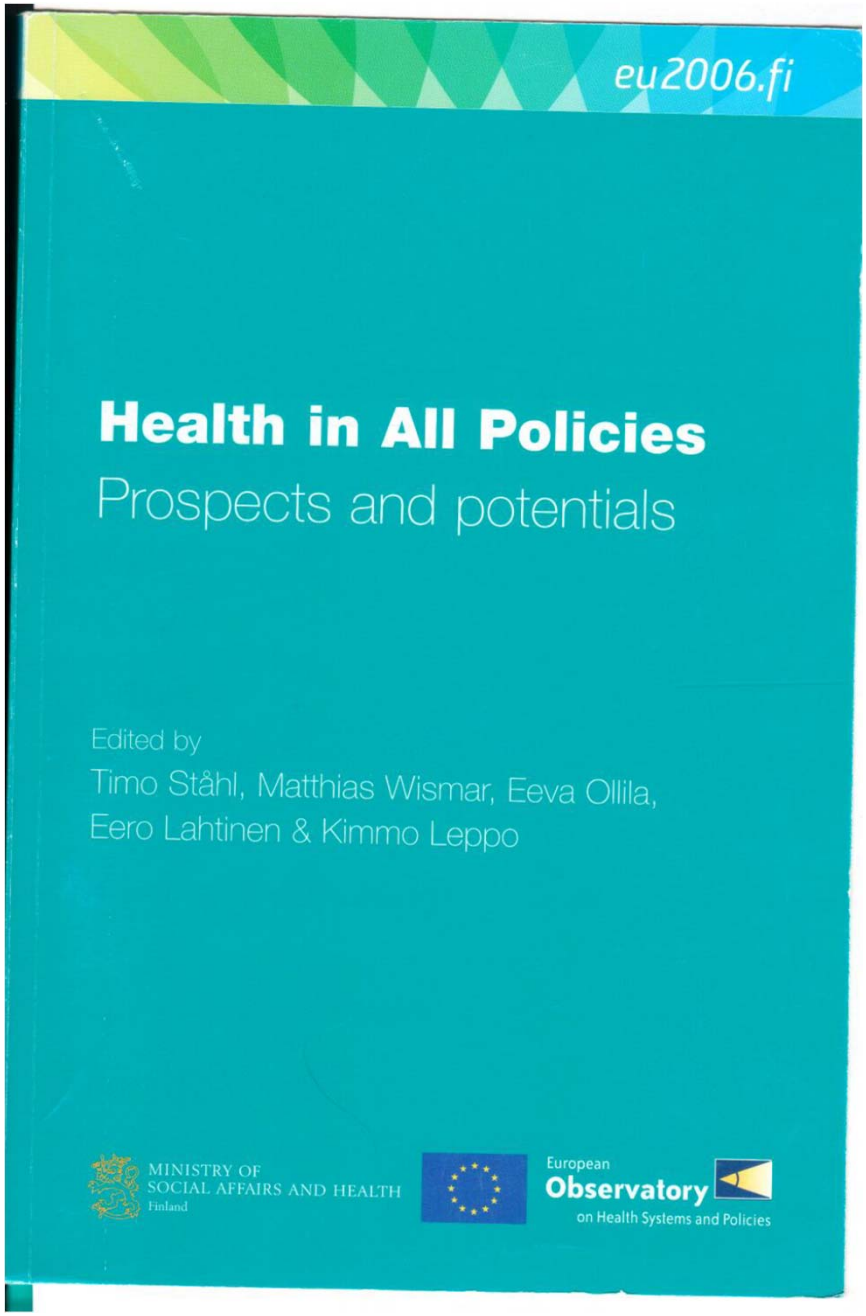
Source: Janik-Koncewicz K. Herbeć A, Zatoński M, Rosik K, Młoźniak I, Krajewski J, Wójcik I, Rosińczuk J, Szuba A, Zatoński WA . Building health literacy in a Polish region: protocol for the POWER project in Lower Silesia. J Health Inequal 2018; 4(1): 27-30.

Number of death before 65, 2015*, men and women



* 2014 for Bulgaria and Slovakia

Source: Zatoński W. One hundred years of health in Poland. J Health Inequal 2019; 5(1).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Health in All Policies
Prospects and potentials
Edited by
Timo Ståhl, Matthias Wismar, Eeva Ollila,
Eero Lahtinen & Kimmo Leppo
MINISTRY OF
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Observatory
on Health Systems and Policies