

56°CONGRESSO NAZIONALE SITI 2-5 Maggio 2023 ROMA

Inequalities in the burden of noncommunicable diseases across European countries: a systematic analysis of the 2019 Global Burden of Disease Study

Carlos A. S. Andrade





Opportunities to Focus on the Public's Health.



Inequalities in the burden of noncommunicable diseases across European countries: a systematic analysis of the 2019 Global Burden of Disease Study

56°CONGRESSO NAZIONALE SITI







STATEMENT SLIDE

I have no conflicts of interest to disclose







Opportunities to Focus on the Public's Health

NCDs

- Chronic diseases such as CVDs, cancers, DM, and respiratory diseases.
- Risk factors such as smoking, harmful alcohol consumption, unhealthy diet, and physical inactivity.
- 74% of all deaths in 2019 globally.

Health inequalities

- Unjust and avoidable differences in people's health status.
- Inequalities in health cause more than 700,000 deaths.
 - · 33 million cases of illness across the entire EU.

GBD study

- DALY: to quantify health effects while integrating information on mortality, morbidity, and disability.
- 87% of disease burden in member states of the EU.
- lack of studies about health inequalities related to NCDs

in EEA.





Objectives

• The overall goal of the present systematic analysis was to determine health inequalities in age-standardized DALY rate for NCDs overall

and 12 specific NCDs across 30 EEA countries between 1990 and 2019.

- 1. provide a description of age-standardized NCDs DALY rate by country and sex for 2019;
- 2. present an age-standardized NCDs DALY rate for each country between 1990 and 2019 by sex,
- 3. determine age-standardized NCDs DALY rate ratios by country and sex between 1990 and 2019, and
- 4. assess health inequalities of NCDs by calculating Gini coefficient (GC) and Slope Index of Inequality (SII) between 1990 and 2019.





Created with mapchart ne

A WORLD IN TURMOIL:

Opportunities to Focus on the Public's Health

Material and Methods

- $\frac{Higher \ ranking \ age \ standardized \ DALY \ rate}{Lower \ ranking \ age \ standardized \ DALY \ rate} = Ratio$
 - Values closer to "1" indicate equality
 - Values above "1" indicate inequality
- $exponential(\beta coefficient(LN[X])) 1) = Annual rate of change$
 - The lower the annual rate of change, the greater the decline in the DALY rate between 1990 and 2019.
- Statistical difference was considered for 95% UI (uncertainty interval) non-overlap
- The GC was used to measure the DALY rate inequalities across countries.
 - It ranges from 0 to 1, in which 0 represents perfect equality and 1 means total inequality.
- The SII was used as an additional measure of health inequality, that was used to estimate the average absolute difference in DALY rate across countries.







Countries			Austri	Belgiu	Bulgar	Croati	Cypru	Czechi	Denm	Estoni	Finlan	Ennes	Germa	Greec	Hunga	Icelan	Incloud	Itala	Tatala	Lithua	Luxe	Malta	Nether	Norwa	Polan	Portug	Roma	Slovak	Sloven	Casia	Swede	TIZ
			a	m	ia	a	S	a	ark	a	d	France	ny	e	ry	d	Ireland	italy	Latvia	nia	mbour	Maita	lands	у	d	al	nia	ia	ia	spam	n	UK
	Fem	ale	16009	16314	20822	16161	16589	15642	17194	16414	15845	15322	17077	16777	17989	14816	16896	15771	17803	17208	15964	16000	16545	15894	15821	16190	17920	16769	13910	15301	15707	17766
		Male	16716	16931	28589	20315	16599	19000	17301	22234	17243	15831	17713	17835	23763	15033	16779	15977	24497	24160	15675	16136	16044	15551	21445	17412	23955	21341	16812	15864	15115	18370
Austria	16009	16716	1.00	1.02	1.30	1.01	1.04	1.02	1.07	1.03	1.01	1.04	1.07	1.05	1.12	1.08	1.06	1.02	1.11	1.07	1.00	1.00	1.03	1.01	1.01	1.01	1.12	1.05	1.15	1.05	1.02	1.11
Belgium	16314	16931	1.01	1.00	1.28	1.01	1.02	1.04	1.05	1.01	1.03	1.06	1.05	1.03	1.10	1.10	1.04	1.03	1.09	1.05	1.02	1.02	1.01	1.03	1.03	1.01	1.10	1.03	1.17	1.07	1.04	1.09
Bulgaria	20822	28589	<u>1.71</u>	<u>1.69</u>	1.00	1.29	1.26	1.33	1.21	1.27	1.31	1.36	1.22	1.24	1.16	1.41	1.23	1.32	1.17	1.21	1.30	1.30	1.26	1.31	1.32	1.29	1.16	1.24	<u>1.50</u>	1.36	1.33	1.17
Croatia	16161	20315	1.22	1.20	1.41	1.00	1.03	1.03	1.06	1.02	1.02	1.05	1.06	1.04	1.11	1.09	1.05	1.02	1.10	1.06	1.01	1.01	1.02	1.02	1.02	1.00	1.11	1.04	1.16	1.06	1.03	1.10
Cyprus	16589	16599	1.01	1.02	<u>1.72</u>	1.22	1.00	1.06	1.04	1.01	1.05	1.08	1.03	1.01	1.08	1.12	1.02	1.05	1.07	1.04	1.04	1.04	1.00	1.04	1.05	1.02	1.08	1.01	1.19	1.08	1.06	1.07
Czechia	15642	19000	1.14	1.12	<u>1.50</u>	1.07	1.14	1.00	1.10	1.05	1.01	1.02	1.09	1.07	1.15	1.06	1.08	1.01	1.14	1.10	1.02	1.02	1.06	1.02	1.01	1.04	1.15	1.07	1.12	1.02	1.00	1.14
Denmark	17194	17301	1.03	1.02	<u>1.65</u>	1.17	1.04	1.10	1.00	1.05	1.09	1.12	1.01	1.02	1.05	1.16	1.02	1.09	1.04	1.00	1.08	1.07	1.04	1.08	1.09	1.06	1.04	1.03	1.24	1.12	1.09	1.03
Estonia	16414	22234	<u>1.33</u>	1.31	1.29	1.09	1.34	1.17	1.29	1.00	1.04	1.07	1.04	1.02	1.10	1.11	1.03	1.04	1.08	1.05	1.03	1.03	1.01	1.03	1.04	1.01	1.09	1.02	1.18	1.07	1.05	1.08
Finland	15845	17243	1.03	1.02	<u>1.66</u>	1.18	1.04	1.10	1.00	1.29	1.00	1.03	1.08	1.06	1.14	1.07	1.07	1.00	1.12	1.09	1.01	1.01	1.04	1.00	1.00	1.02	1.13	1.06	1.14	1.04	1.01	1.12
France	15322	15831	1.06	1.07	<u>1.81</u>	1.28	1.05	1.20	1.09	<u>1.40</u>	1.09	1.00	1.11	1.09	1.17	1.03	1.10	1.03	1.16	1.12	1.04	1.04	1.08	1.04	1.03	1.06	1.17	1.09	1.10	1.00	1.03	1.16
Germany	17077	17713	1.06	1.05	<u>1.61</u>	1.15	1.07	1.07	1.02	1.26	1.03	1.12	1.00	1.02	1.05	1.15	1.01	1.08	1.04	1.01	1.07	1.07	1.03	1.07	1.08	1.05	1.05	1.02	1.23	1.12	1.09	1.04
Greece	16777	17835	1.07	1.05	<u>1.60</u>	1.14	1.07	1.07	1.03	1.25	1.03	1.13	1.01	1.00	1.07	1.13	1.01	1.06	1.06	1.03	1.05	1.05	1.01	1.06	1.06	1.04	1.07	1.00	1.21	1.10	1.07	1.06
Hungary	17989	23763	<u>1.42</u>	<u>1.40</u>		1.17	<u>1.43</u>	1.25	<u>1.37</u>	1.07	<u>1.38</u>	<u>1.50</u>	1.34	<u>1.33</u>	00.1	1.21	1.06	1.14	1.01	1.05	1.13	1.12	1.09	1.13	1.14	1.11	1.00	1.07	1.29	1.18	1.15	1.01
Iceland	14816	15033	1.11	1.13	<u>1.90</u>	1.35	1.10	1.26	1.15	<u>1.48</u>	1.15	1.05	1.18	1.19	<u>1.58</u>	00.1	1.14	1.06	1.20	1.16	1.08	1.08	1.12	1.07	1.07	1.09	1.21	1.13	1.07	1.03	1.06	1.20
Ireland	16896	16779	1.00	1.01		1.21	1.01	1.13	1.03	1.33	1.03	1.06	1.06	1.06	<u>1.42</u>	1.12	00:1	1.07	1.05	1.02	1.06	1.06	1.02	1.06	1.07	1.04	1.06	1.01	1.21	1.10	1.08	1.05
Italy	15771	15977	1.05	1.06	<u>1.79</u>	1.27	1.04	1.19	1.08	1.39	1.08	1.01	1.11	1.12	<u>1.49</u>	1.06	1.05	00.1	1.13	1.09	1.01	1.01	1.05	1.01	1.00	1.03	1.14	1.06	1.13	1.03	1.00	1.13
Latvia	17803	24497	<u>1.47</u>	<u>1.45</u>	1.17	1.21	<u>1.48</u>	1.29	<u>1.42</u>	1.10	<u>1.42</u>	<u>1.55</u>	<u>1.38</u>	<u>1.37</u>	1.03	<u>1.63</u>	<u>1.46</u>	<u>1.53</u>	1.00	1.03	1.12	1.11	1.08	1.12	1.13	1.10	1.01	1.06	1.28	1.16	1.13	1.00
Lithuania	17208	24160	<u>1.45</u>	<u>1.43</u>	1.18	1.19	<u>1.46</u>	1.27	<u>1.40</u>	1.09	<u>1.40</u>	<u>1.53</u>	<u>1.36</u>	<u>1.35</u>	1.02	1.61	<u>1.44</u>	<u>1.51</u>	1.01	00.1	1.08	1.08	1.04	1.08	1.09	1.06	1.04	1.03	1.24	1.12	1.10	1.03
uxembour	15964	15675	1.07	1.08	<u>1.82</u>	1.30	1.06	1.21	1.10	<u>1.42</u>	1.10	1.01	1.13	1.14	<u>1.52</u>	1.04	1.07	1.02	<u>1.56</u>	<u>1.54</u>	1.00	1.00	1.04	1.00	1.01	1.01	1.12	1.05	1.15	1.04	1.02	1.11
Malta	16000	16136	1.04	1.05	<u>1.77</u>	1.26	1.03	1.18	1.07	1.38	1.07	1.02	1.10	1.11	1.47	1.07	1.04	1.01	<u>1.52</u>	<u>1.50</u>	1.03	1.00	1.03	1.01	1.01	1.01	1.12	1.05	1.15	1.05	1.02	1.11
Netherland	16545	16044	1.04	1.06	1.78	1.27	1.03	1.18	1.08	1.39	1.07	1.01	1.10	1.11	1.48	1.07	1.05	1.00	<u>1.53</u>	<u>1.51</u>	1.02	1.01	1.00	1.04	1.05	1.02	1.08	1.01	1.19	1.08	1.05	1.07
Norway	15894	15551	1.07	1.09	1.84	1.31	1.07	1.22	1.11	<u>1.43</u>	1.11	1.02	1.14	1.15	1.53	1.03	1.08	1.03	1.58	1.55	1.01	1.04	1.03	1.00	1.00	1.02	1.13	1.06	1.14	1.04	1.01	1.12
Poland	15821	21445	1.28	1.27	1.33	1.06	1.29	1.13	1.24	1.04	1.24	1.35	1.21	1.20	1.11	1.43	1.28	1.34	1.14	1.13	1.37	1.55	1.34	1.38	1.00	1.02	1.13	1.06	1.14	1.03	1.01	1.12
Portugal	16190	1/412	1.04	1.03	1.04	1.17	1.05	1.09	1.01	1.28	1.01	1.10	1.02	1.02	1.30	1.10	1.04	1.09	<u>1.41</u>	1.39	1.11	1.08	1.09	1.12	1.23	1.00	1.11	1.04	1.10	1.06	1.03	1.10
Romania	1/920	23955	1.43	1.41	1.19	1.18	1.44	1.20	1.38	1.08	1.39	1.51	1.35	1.34	1.01	1.39	1.43	1.50	1.02	1.01	1.53	1.48	1.49	1.54	1.12	1.38	1.00	1.07	1.29	1.17	1.14	1.01
Slovakia	10/09	21341	1.28	1.20	1.54	1.05	1.29	1.12	1.23	1.04	1.24	1.35	1.20	1.20	1.11	1.12	1.27	1.54	1.15	1.13	1.30	1.32	1.33	1.37	1.00	1.23	1.12	1.00	1.21	1.10	1.07	1.00
Slovenia	15201	10812	1.01	1.01	1.00	1.21	1.01	1.13	1.03	1.32	1.03	1.00	1.05	1.00	1.41	1.12	1.00	1.05	1.40	1.44	1.07	1.04	1.05	1.08	1.28	1.04	1.44	1.27	1.00	1.10	1.13	1.28
Spain	15301	15115	1.05	1.07	1.80	1.28	1.05	1.20	1.09	1.40	1.09	1.00	1.12	1.12	1.50	1.00	1.00	1.01	1.54	1.54	1.01	1.02	1.01	1.02	1.55	1.10	1.51	1.55	1.00	1.00	1.03	1.10
sweden	13/0/	10110	1.11	1.12	1.89	1.34	1.10	1.20	1.14	1.4/	1.14	1.03	1.1/	1.18	1.3/	1.01	1.11	1.00	1.02	1.00	1.04	1.07	1.00	1.03	1.42	1.13	1.38	1.41	1.11	1.05	1.00	1.13
UK	1//66	18370	1.10	1.09	1.56	1.11	1.11	1.03	1.06	1.21	1.07	1.16	1.04	1.03	1.29	1.22	1.09	1.15	1.33	1.32	1.17	1.14	1.14	1.18	1.17	1.06	1.30	1.16	1.09	1.16	1.22	1.00





Countries	Countries		Austri	Belgiu	Bulgar	Croati	Cypru	Czechi	Denm	Estoni	Finlan	F	Germa	Greec	Hunga	Icelan	T11	Testa	Tetele	Lithua	Luxe	16.14	Nether	Norwa	Polan	Portug	Roma	Slovak	Sloven	Quein	Swede	TITZ
			a	m	ia	a	S	a	ark	a	d	France	ny	e	ry	d	Ireland	Italy	Latvia	nia	mbour	Malta	lands	у	d	al	nia	ia	ia	Spain	n	UK
	Fem	ale	16009	16314	20822	16161	16589	15642	17194	16414	15845	15322	17077	16777	17989	14816	16896	15771	17803	17208	15964	16000	16545	15894	15821	16190	17920	16769	13910	15301	15707	17766
		Male	16716	16931	28589	20315	16599	19000	17301	22234	17243	15831	17713	17835	23763	15033	16779	15977	24497	24160	15675	16136	16044	15551	21445	17412	23955	21341	16812	15864	15115	18370
Austria	16009	16716	1.00	1.02	1.30	1.01	1.04	1.02	1.07	1.03	1.01	1.04	1.07	1.05	1.12	1.08	1.06	1.02	1.11	1.07	1.00	1.00	1.03	1.01	1.01	1.01	1.12	1.05	1.15	1.05	1.02	1.11
Belgium	16314	16931	1.01	1.00	1.28	1.01	1.02	1.04	1.05	1.01	1.03	1.06	1.05	1.03	1.10	1.10	1.04	1.03	1.09	1.05	1.02	1.02	1.01	1.03	1.03	1.01	1.10	1.03	1.17	1.07	1.04	1.09
Bulgaria	20822	28589	<u>1.71</u>	<u>1.69</u>	1.00	1.29	1.26	1.33	1.21	1.27	1.31	1.36	1.22	1.24	1.16	1.41	1.23	1.32	1.17	1.21	1.30	1.30	1.26	1.31	1.32	1.29	1.16	1.24	<u>1.50</u>	1.36	1.33	1.17
Croatia	16161	20315	1.22	1.20	1.41	1.00	1.03	1.03	1.06	1.02	1.02	1.05	1.06	1.04	1.11	1.09	1.05	1.02	1.10	1.06	1.01	1.01	1.02	1.02	1.02	1.00	1.11	1.04	1.16	1.06	1.03	1.10
Cyprus	16589	16599	1.01	1.02	<u>1.72</u>	1.22	1.00	1.06	1.04	1.01	1.05	1.08	1.03	1.01	1.08	1.12	1.02	1.05	1.07	1.04	1.04	1.04	1.00	1.04	1.05	1.02	1.08	1.01	1.19	1.08	1.06	1.07
Czechia	15642	19000	1.14	1.12	1.50	1.07	1.14	1.00	1.10	1.05	1.01	1.02	1.09	1.07	1.15	1.06	1.08	1.01	1.14	1.10	1.02	1.02	1.06	1.02	1.01	1.04	1.15	1.07	1.12	1.02	1.00	1.14
Denmark	17194	17301	1.03	1.02	<u>1.65</u>	1.17	1.04	1.10	1.00	1.05	1.09	1.12	1.01	1.02	1.05	1.16	1.02	1.09	1.04	1.00	1.08	1.07	1.04	1.08	1.09	1.06	1.04	1.03	1.24	1.12	1.09	1.03
Estonia	16414	22234	<u>1.33</u>	1.31	1.29	1.09	1.34	1.17	1.25	1.00	1.04	1.07	1.04	1.02	1.10	1.11	1.03	1.04	1.08	1.05	1.03	1.03	1.01	1.03	1.04	1.01	1.09	1.02	1.18	1.07	1.05	1.08
Finland	15845	17243	1.03	1.02	1.66	1.18	1.04	1.10	1.00	1.29	1.00	1.03	1.08	1.06	1.14	1.07	1.07	1.00	1.12	1.09	1.01	1.01	1.04	1.00	1.00	1.02	1.13	1.06	1.14	1.04	1.01	1.12
France	15322	15831	1.06	1.07	<u>1.81</u>	1.28	1.05	1.20	1	1.40	1.09	1.00	1.11	1.09	1.17	1.03	1.10	1.03	1.16	1.12	1.04	1.04	1.08	1.04	1.03	1.06	1.17	1.09	1.10	1.00	1.03	1.16
Germany	17077	17713	1.06	1.05	<u>1.61</u>	1.15	1.07	1.07	1.02	1.26	1.03	1.12	1.00	1.02	1.05	1.15	1.01	1.08	1.04	1.01	1.07	1.07	1.03	1.07	1.08	1.05	1.05	1.02	1.23	1.12	1.09	1.04
Greece	16777	17835	1.07	1.05	<u>1.60</u>	1.14	1.07	1.07	1.03	1.25	1.03	1.13	1.01	1.00	1.07	1.13	1.01	1.06	1.06	1.03	1.05	1.05	1.01	1.06	1.06	1.04	1.07	1.00	1.21	1.10	1.07	1.06
Hungary	17989	23763	<u>1.42</u>	1.40	1.20	1.17	<u>1.43</u>	1.25	<u>1.37</u>	1.07	1.38	<u>1.50</u>	1.34	<u>1.33</u>	1.00	1.21	1.06	1.14	1.01	1.05	1.13	1.12	1.09	1.13	1.14	1.11	1.00	1.07	1.29	1.18	1.15	1.01
Iceland	14816	15033		1.13	<u>1.90</u>	1.35	1.10	1.26	1.15	<u>1.48</u>	1.15	1.05	1.18	1.19	<u>1.58</u>	00.1	1.14	1.06	1.20	1.16	1.08	1.08	1.12	1.07	1.07	1.09	1.21	1.13	1.07	1.03	1.06	1.20
Ireland	16896	16779	1.00	1.01	<u>1.70</u>	1.21	1.01	1.13	1.03	1.33	1.03	1.06	1.06	1.06	1.42	1.12	1.00	1.07	1.05	1.02	1.06	1.06	1.02	1.06	1.07	1.04	1.06	1.01	1.21	1.10	1.08	1.05
Italy	15771	15977	1.05	1.06	<u>1.79</u>	1.27	1.04	1.19	1.08	1.39	1.08	1.01	1.11	1.12	<u>1.49</u>	1.06	1.05	1.00	1.13	1.09	1.01	1.01	1.05	1.01	1.00	1.03	1.14	1.06	1.13	1.03	1.00	1.13
Latvia	17803	24497	<u>1.47</u>	<u>1.45</u>	1.17	1.21	<u>1.48</u>	1.29	<u>1.42</u>	1.10	<u>1.42</u>	<u>1.55</u>	<u>1.38</u>	<u>1.37</u>	1.03	<u>1.63</u>	<u>1.46</u>	<u>1.53</u>	1.00	1.03	1.12	1.11	1.08	1.12	1.13	1.10	1.01	1.06	1.28	1.16	1.13	1.00
Lithuania	17208	24160	<u>1.45</u>	1.43	1.18	1.19	1.46	1.27	<u>1.40</u>	1.09	<u>1.40</u>	<u>1.53</u>	1.36	1.35	1.02	1.61	1.44	<u>1.51</u>	1.01	1.00	1.08	1.08	1.04	1.08	1.09	1.06	1.04	1.03	1.24	1.12	1.10	1.03
uxembour	15964	15675	1.07	1.08	<u>1.82</u>	1.30	1.06	1.21	1.10	<u>1.42</u>	1.10	1.01	1.13	1.14	<u>1.52</u>	1.04	1.07	1.02	<u>1.56</u>	<u>1.54</u>	1.00	1.00	1.04	1.00	1.01	1.01	1.12	1.05	1.15	1.04	1.02	1.11
Malta	16000	16136	1.04	1.05	<u>1.77</u>	1.26	1.03	1.18	1.07	1.38	1.07	1.02	1.10	1.11	<u>1.47</u>	1.07	1.04		<u>1.52</u>	<u>1.50</u>	1.03	1.00	1.03	1.01	1.01	1.01	1.12	1.05	1.15	1.05	1.02	1.11
Vetherland	16545	16044	1.04	1.06	<u>1.78</u>	1.27	1.03	1.18	1.08	<u>1.39</u>	1.07	1.01	1.10	1.11	<u>1.48</u>	1.07	1.05	1.00	<u>1.53</u>	<u>1.51</u>	1.02	1.01	1:00	1.04	1.05	1.02	1.08	1.01	1.19	1.08	1.05	1.07
Norway	15894	15551	1.07	1.09	<u>1.84</u>	1.31	1.07	1.22	1.11	<u>1.43</u>	1.11	1.02	1.14	1.15	<u>1.53</u>	1.03	1.08	1.02	<u>1.58</u>	<u>1.55</u>	1.01	1.04	1.03	1.00	1.00	1.02	1.13	1.06	1.14	1.04	1.01	1.12
Poland	15821	21445	1.28	1.27	1.33	1.06	1.29	1.13	1.24	1.04	1.24	1.35	1.21	1.20	1.11	<u>1.43</u>	1.28	1.34	1.14	1.13	1.37	1.33	1.34	1.38	1.00	1.02	1.13	1.06	1.14	1.03	1.01	1.12
Portugal	16190	17412	1.04	1.03	<u>1.64</u>	1.17	1.05	1.09	1.01	1.28	1.01	1.10	1.02	1.02	1.36	1.16	1.04	1.09	<u>1.41</u>	<u>1.39</u>	1.11	1.08	1.09	1.12	1.23	1.00	1.11	1.04	1.16	1.06	1.03	1.10
Romania	17920	23955	<u>1.43</u>	<u>1.41</u>	1.19	1.18	<u>1.44</u>	1.26	1.38	1.08	<u>1.39</u>	<u>1.51</u>	<u>1.35</u>	<u>1.34</u>	1.01	<u>1.59</u>	<u>1.43</u>	<u>1.50</u>	1.02	1.01	<u>1.53</u>	<u>1.48</u>	<u>1.49</u>	<u>1.54</u>	1.1.	1.38	1.00	1.07	1.29	1.17	1.14	1.01
Slovakia	16769	21341	1.28	1.26	1.34	1.05	1.29	1.12	1.23	1.04	1.24	1.35	1.20	1.20	1.11	1.42	1.21	1.34	1.15	1.13	1.36	1.32	1.33	1.37	1.00	1.23	1.12	00.1	1.21	1.10	1.07	1.06
Slovenia	13910	16812	1.01	1.01	<u>1.70</u>	1.21	1.01	1.13	1.03	1.32	1.03	2	1.05	1.06	<u>1.41</u>	1.12	1.00	1.05	<u>1.46</u>	<u>1.44</u>	1.07	1.04	1.05	1.08	1.00	1.04	<u>1.42</u>	1.27	1.00	1.10	1.13	1.28
Spain	15301	15864	1.05	1.07	<u>1.80</u>	1.28	1.05	1.20	1.09	<u>1.40</u>	1.09	1.00	1.12	1.12	<u>1.50</u>	1.06	10	1.01	1.54	<u>1.52</u>	1.01	1.02	1.01	1.02	1.35	1.10	<u>1.51</u>	1.35	1.06	1.00	1.03	1.16
Sweden	15707	15115	1.11	1.12	<u>1.89</u>	1.34	1.10	1.26	1.14	<u>1.47</u>	1.14	1.05	1.17	1.18	<u>1.57</u>	1.01	1.11	1.06	<u>1.62</u>	1.60	1.04	1.07	1.06	1.03	1.42	1.15	<u>1.58</u>	<u>1.41</u>	1.11	1.05	1.00	1.13
UK	17766	18370	1.10	1.09	1.56	1.11	1.11	1.03	1.06	1.21	1.07	1.16	1.04	1.03	1.29	1.22	1.09	1.15	1.33	1.32	1.17	1.14	1.14	1.18	1.17	1.06	1.30	1.16	1.09	1.16	1.22	1.00





Countries			Austri	Belgiu	Bulgar	Croati	Cypru	Czechi	Denm	Estoni	Finlan	Ennes	Germa	Greec	Hunga	Icelan	Incloud	Tesla	Latria	Lithua	Luxe	Malta	Nether	Norwa	Polan	Portug	Roma	Slovak	Sloven	Casia	Swede	TIZ
			a	m	ia	a	S	a	ark	a	d	France	ny	e	ry	d	Ireland	italy	Latvia	nia	mbour	Marta	lands	у	d	al	nia	ia	ia	Spain	n	UK
	Fem	ale	16009	16314	20822	16161	16589	15642	17194	16414	15845	15322	17077	16777	17989	14816	16896	15771	17803	17208	15964	16000	16545	15894	15821	16190	17920	16769	13910	15301	15707	17766
		Male	16716	16931	28589	20315	16599	19000	17301	22234	17243	15831	17713	17835	23763	15033	16779	15977	<mark>244</mark> 97	24160	15675	16136	16044	15551	21445	17412	23955	21341	16812	15864	15115	18370
Austria	16009	16716	1.00	1.02	1.30	1.01	1.04	1.02	1.07	1.03	1.01	1.04	1.07	1.05	1.12	1.08	1.06	1.02	1.11	1.07	1.00	1.00	1.03	1.01	1.01	1.01	1.12	1.05	1.15	1.05	1.02	1.11
Belgium	16314	16931	1.01	1.00	1.28	1.01	1.02	1.04	1.05	1.01	1.03	1.06	1.05	1.03	1.10	1.10	1.04	1.03	1.09	1.05	1.02	1.02	1.01	1.03	1.03	1.01	1.10	1.03	2	1.07	1.04	1.09
Bulgaria	20822	28589	<u>1.71</u>	<u>1.69</u>	1.00	1.29	1.26	1.33	1.21	1.27	1.31	1.36	1.22	1.24	1.16	1.41	1.23	1.32	1.17	1.21	1.30	1.30	1.26	1.31	1.32	1.29	1.16	1.24	<u>1.50</u>	1.36	1.33	1.17
Croatia	16161	20315	1.22	1.20	1.41	1.00	1.03	1.03	1.06	1.02	1.02	1.05	1.06	1.04	1.11	1.09	1.05	1.02	1.10	1.06	1.01	1.01	1.02	1.02	1.02	1.00	1.11	1.04	1.16	1.06	1.03	1.10
Cyprus	16589	16599	1.01	1.02	<u>1.72</u>	1.22	1.00	1.06	1.04	1.01	1.05	1.08	1.03	1.01	1.08	1.12	1.02	1.05	1.07	1.04	1.04	1.04	1.00	1.04	1.05	1.02	1.08	1.01	1.19	1.08	1.06	1.07
Czechia	15642	19000	1.14	1.12	<u>1.50</u>	1.07	1.14	1.00	1.10	1.05	1.01	1.02	1.09	1.07	1.15	1.06	1.08	1.01	1.14	1.10	1.02	1.02	1.06	1.02	1.01	1.04	1.15	1.07	1.12	1.02	1.00	1.14
Denmark	17194	17301	1.03	1.02	<u>1.65</u>	1.17	1.04	1.10	1.00	1.05	1.09	1.12	1.01	1.02	1.05	1.16	1.02	1.09	1.04	1.00	1.08	1.07	1.04	1.08	1.09	1.06	1.04	1.03	1.24	1.12	1.09	1.03
Estonia	16414	22234	<u>1.33</u>	1.31	1.29	1.09	1.34	1.17	1.29	1.00	1.04	1.07	1.04	1.02	1.10	1.11	1.03	1.04	1.08	1.05	1.03	1.03	1.01	1.03	1.04	1.01	1.09	1.02	1.18	1.07	1.05	1.08
Finland	15845	17243	1.03	1.02	<u>1.66</u>	1.18	1.04	1.10	1.00	1.29	1.00	1.03	1.08	1.06	1.14	1.07	1.07	1.00	1.12	1.09	1.01	1.01	1.04	1.00	1.00	1.02	1.13	1.06	1.14	1.04	1.01	1.12
France	15322	15831	1.06	1.07	<u>1.81</u>	1.28	1.05	1.20	1.09	<u>1.40</u>	1.09	1.00	1.11	1.09	1.17	1.03	1.10	1.03	1.16	1.12	1.04	1.04	1.08	1.04	1.03	1.06	1.17	1.09	1.10	1.00	1.03	1.16
Germany	17077	17713	1.06	1.05	<u>1.61</u>	1.15	1.07	1.07	1.02	1.26	1.03	1.12	1.00	1.02	1.05	1.15	1.01	1.08	1.04	1.01	1.07	1.07	1.03	1.07	1.08	1.05	1.05	1.02	1.23	1.12	1.09	1.04
Greece	16777	17835	1.07	1.05	<u>1.60</u>	1.14	1.07	1.07	1.03	1.25	1.03	1.13	1.01	1.00	1.07	1.13	1.01	1.06	1.06	1.03	1.05	1.05	1.01	1.06	1.06	1.04	1.07	1.00	1.21	1.10	1.07	1.06
Hungary	17989	23763	<u>1.42</u>	<u>1.40</u>	1.20	1.17	<u>1.43</u>	1.25	<u>1.37</u>	1.07	<u>1.38</u>	<u>1.50</u>	1.34	<u>1.33</u>	1.00	1.21	1.06	1.14	1.01	1.05	1.13	1.12	1.09	1.13	1.14	1.11	1.00	1.07	1.29	1.18	1.15	1.01
Iceland	14816	15033	1.11	1.13	<u>1.90</u>	1.35	1.10	1.26	1.15	<u>1.48</u>	1.15	1.05	1.18	1.19	<u>1.58</u>	00.1	1.14	1.06	1.20	1.16	1.08	1.08	1.12	1.07	1.07	1.09	1.21	1.13	1.07	1.03	1.06	1.20
Ireland	16896	16779	1.00	1.01	<u>1.70</u>	1.21	1.01	1.13	1.03	1.33	1.03	1.06	1.06	1.06	<u>1.42</u>	1.12	1:00	1.07	1.05	1.02	1.06	1.06	1.02	1.06	1.07	1.04	1.06	1.01	1.21	1.10	1.08	1.05
Italy	15771	15977	1.05	1.06	<u>1.79</u>	1.27	1.04	1.19	1.08	1.39	1.08	1.01	1.11	1.12	<u>1.49</u>	1.06	1.05	00.1	1.13	1.09	1.01	1.01	1.05	1.01	1.00	1.03	1.14	1.06	1.13	1.03	1.00	1.13
Latvia	17803	24497	<u>1.47</u>	<u>1.45</u>	1.17	1.21	<u>1.48</u>	1.29	<u>1.42</u>	1.10	<u>1.42</u>	<u>1.55</u>	<u>1.38</u>	<u>1.37</u>	1.03	<u>1.63</u>	<u>1.46</u>	<u>1.53</u>	00.1	1.03	1.12	1.11	1.08	1.12	1.13	1.10	1.01	1.06	1.28	1.16	1.13	1.00
Lithuania	17208	24160	<u>1.45</u>	<u>1.43</u>	1.18	1.19	<u>1.46</u>	1.27	<u>1.40</u>	1.09	<u>1.40</u>	<u>1.53</u>	<u>1.36</u>	<u>1.35</u>	1.02	<u>1.61</u>	<u>1.44</u>	<u>1.51</u>	1.01	00.1	1.08	1.08	1.04	1.08	1.09	1.06	1.04	1.03	1.24	1.12	1.10	1.03
uxembour	15964	15675	1.07	1.08	<u>1.82</u>	1.30	1.06	1.21	1.10	<u>1.42</u>	1.10	1.01	1.13	1.14	<u>1.52</u>	1.04	1.07	1.02	<u>1.56</u>	<u>1.54</u>	1.00	1.00	1.04	1.00	1.01	1.01	1.12	1.05	1.15	1.04	1.02	1.11
Malta	16000	16136	1.04	1.05	<u>1.77</u>	1.26	1.03	1.18	1.07	1.38	1.07	1.02	1.10	1.11	<u>1.47</u>	1.07	1.04	1.01	<u>1.52</u>	<u>1.50</u>	1.03	1.00	1.03	1.01	1.01	1.01	1.12	1.05	1.15	1.05	1.02	1.11
Netherland	16545	16044	1.04	1.06	<u>1.78</u>	1.27	1.03	1.18	1.08	<u>1.39</u>	1.07	1.01	1.10	1.11	<u>1.48</u>	1.07	1.05	1.00	<u>1.53</u>	<u>1.51</u>	1.02	1.01	1.00	1.04	1.05	1.02	1.08	1.01	1.19	1.08	1.05	1.07
Norway	15894	15551	1.07	1.09	<u>1.84</u>	1.31	1.07	1.22	1.11	<u>1.43</u>	1.11	1.02	1.14	1.15	<u>1.53</u>	1.03	1.08	1.03	1.58	1.55	1.01	1.04	1.03	1.00	1.00	1.02	1.13	1.06	1.14	1.04	1.01	1.12
Poland	15821	21445	1.28	1.27	1.33	1.06	1.29	1.13	1.24	1.04	1.24	1.35	1.21	1.20	1.11	1.43	1.28	1.34	1.14	1.13	1.37	1.33	1.34	1.38	1.00	1.02	1.13	1.06	1.14	1.03	1.01	1.12
Portugal	16190	17412	1.04	1.03	<u>1.64</u>	1.17	1.05	1.09	1.01	1.28	1.01	1.10	1.02	1.02	<u>1.36</u>	1.16	1.04	1.09	<u>1.41</u>	<u>1.39</u>	1.11	1.08	1.09	1.12	1.23	1.00	1.11	1.04	1.16	1.06	1.03	1.10
Romania	17920	23955	<u>1.43</u>	<u>1.41</u>	1.19	1.18	<u>1.44</u>	1.26	1.38	1.08	<u>1.39</u>	<u>1.51</u>	1.35	<u>1.34</u>	1.01	1.59	<u>1.43</u>	<u>1.50</u>	1.02	1.01	<u>1.53</u>	<u>1.48</u>	<u>1.49</u>	<u>1.54</u>	1.12	1.38	1:00	1.07	1.29	1.17	1.14	1.01
Slovakia	16769	21341	1.28	1.26	1.34	1.05	1.29	1.12	1.23	1.04	1.24	1.35	1.20	1.20	1.11	1.42	1.27	1.34	1.15	1.13	1.36	1.32	1.33	1.37	1.00	1.23	1.12	1.00	1.21	1.10	1.07	1.06
Slovenia	13910	16812	1.01	1.01	<u>1.70</u>	1.21	1.01	1.13	1.03	1.32	1.03	1.06	1.05	1.06	<u>1.41</u>	1.12	1.00	1.05	<u>1.40</u>	<u>1.44</u>	1.07	1.04	1.05	1.08	1.28	1.04	<u>1.42</u>	1.27	1.00	1.10	1.13	1.28
Spain	15301	15864	1.05	1.07	1.80	1.28	1.05	1.20	1.09	1.40	1.09	1.00	1.12	1.12	1.50	1.06	1.06	1.01	1.54	1.52	1.01	1.02	1.01	1.02	1.35	1.10	1.51	1.35	1.06	1.00	1.03	1.16
Sweden	15707	15115	1.11	1.12	1.89	1.34	1.10	1.26	1.14	<u>1.47</u>	1.14	1.05	1.17	1.18	1.57	1.01	1.11	1.06	1.62	1.60	1.04	1.07	1.06	1.03	1.42	1.15	1.58	<u>1.41</u>	1.11	1.05	1.00	1.13
UK	17766	18370	1.10	1.09	1.56	1.11	1.11	1.03	1.06	1.21	1.07	1.16	1.04	1.03	1.29	1.22	1.09	1.15	1.33	1.32	1.17	1.14	1.14	1.18	1.17	1.06	1.30	1.16	1.09	1.16	1.22	1.00





	Denni L'stoni I'nnan	Germa Greec Frunga Iceran	Italu I atuia Liulua Lu	uxe Netter N	Norwa Polan Portug Roma	Slovak Sloven Swede
a m ia a s a	ark a d	ny e ry d	nia mb	bour lands	y d al nia	ia ia Spain n OK
Female 16009 16314 20822 16161 16589 15642	17194 16414 15845 1532	17077 16777 17989 14816 16896	15771 17803 17208 159	964 16000 16545 1	15894 15821 16190 17920	16769 13910 15301 15707 17766
Male 16716 16931 28589 20315 16599 19000	17301 22234 17243 1583	17713 17835 23763 15033 16779	15977 24497 24160 156	675 2515 16044 1	15551 21445 17412 23955	21341 16812 15864 15115 18370
Austria 16009 16716 1.00 1.02 1.30 1.01 1.04 1.02	1.07 1.03 1.01 1.04	1.07 1.05 1.12 1.08 1.06	1.02 1.11 1.07 1.0	.00 1.00 1.03 1	1.01 1.01 1.01 1.12	1.05 1.15 1.05 1.02 1.11
Belgium 16314 16931 1.01 1.00 1.28 1.01 1.02 1.04	1.05 1.01 1.03 1.06	1.05 1.03 1.10 1.10 1.04	1.03 1.09 1.05 1.0	.02 1.02 1.01 1	1.03 1.03 1.01 1.10	1.03 1.17 1.07 1.04 1.09
Bulgaria 20822 28589 1.71 1.69 1.90 1.29 1.26 1.33	1.21 1.27 1.31 1.36	1.22 1.24 1.16 1.41 1.23	1.32 1.17 1.21 1.3	.30 1.30 1.26	1.31 1.32 1.29 1.16	1.24 <u>1.50</u> 1.36 1.33 1.17
Croatia 16161 20315 1.22 1.20 1.41 T.90 1.03 1.03	1.06 1.02 1.02 1.05	1.06 1.04 1.11 1.09 1.05	1.02 1.10 1.06 1.0	.01 1.01 1.02 1	1.02 1.02 1.00 1.11	1.04 1.16 1.06 1.03 1.10
Cyprus 16589 16599 1.01 1.02 1.72 1.22 1.00 1.06	1.04 1.01 1.05 1.08	1.03 1.01 1.08 1.12 1.02	1.05 1.07 1.04 1.0	.04 1.04 1.00 1	1.04 1.05 1.02 1.08	1.01 1.19 1.08 1.00 1.07
Czechia 15642 19000 1.14 1.12 1.50 1.07 1.14 1.90	1.10 1.05 1.01 1.02	1.09 1.07 1.15 1.06 1.08	1.01 1.14 1.10 1.0	.02 1.02 1.06	1.02 1.01 1.04 1.15	1.07 1.12 1.02 1.00 1.14
Denmark 17194 17301 1.03 1.02 <u>1.65</u> 1.17 1.04 1.10	1.00 1.05 1.09 1.12	1.01 1.02 1.05 1.16 1.02	1.09 1.04 1.00 1.0	.08 1.07 1.04	1.08 1.09 1.06 1.04	1.03 1.24 1.12 1.05 1.03
Estonia 16414 22234 <u>1.33</u> 1.31 1.29 1.09 1.34 1.17	1.29 1.00 1.04 1.07	1.04 1.02 1.10 1.11 1.03	1.04 1.08 105 1.0	.03 1.03 1.01	1.03 1.01 1.09	1.02 1.18 1.07 1.05 1.08
Finland 15845 17243 1.03 1.02 1.66 1.18 1.04 1.10	1.00 1.29 1.00 1.03	1.08 1.06 1.14 1.07 1.07	1.00 1.12 1.09 1.0	.01 1.01 1.04	1.00 1.00 1.02 1.13	1.06 1.14 1.04 1.01 1.12
France 15322 15831 1.06 1.07 1.81 1.28 1.05 1.20	1.09 <u>1.40</u> 1.09 1.00	1.11 1.09 1.17 1.03 1.10	1.03 1.16 1.12 1.0	.04 1.04 1.08	1.04 1.05 1.06 1.17	1.09 1.10 1.00 1.03 1.16
Germany 17077 17713 1.06 1.05 <u>1.61</u> 1.15 1.07 1.07	1.02 1.26 1.03 1.12	1.00 1.02 1.05 1.15 1.01	1.08 1.04 1.01 1.0	.07 1.07 1.03	1.07 1.08 1.05 1.05	1.02 1.23 1.12 1.09 1.04
Greece 16777 17835 1.07 1.05 <u>1.60</u> 1.14 1.07 1.07	1.03 1.25 1.03 1.13	1.01 1.00 1.07 1.13 1.01	1.06 1.06 1.03 1.0	.05 1.05 1.01 1	1.06 1.06 1.04 1.07	1.00 1.21 1.10 1.07 1.06
Hungary 17989 23763 <u>1.42</u> <u>1.40</u> 1.20 1.17 <u>1.43</u> 1.25	<u>1.37</u> 1.07 <u>1.38</u> <u>1.50</u>	1.34 <u>1.33</u> 1.00 1.21 1.06	1.14 1.01 1.05 1.1	.13 1.12 1.09	1.13 1.14 1.11 1.00	1.07 1.29 1.18 1.15 1.01
Iceland 14816 15033 1.11 1.13 <u>1.90</u> 1.35 1.10 1.26	1.15 <u>1.48</u> 1.15 1.05	1.18 1.19 <u>1.58</u> 1.00 1.14	1.06 1.20 1.16 1.0	.08 1.08 1.12	1.07 1.07 1.09 1.21	1.13 1.07 1.03 1.06 1.20
Ireland 16896 16779 1.00 1.01 <u>1.70</u> 1.21 1.01 1.13	1.03 1.33 1.03 1.06	1.06 1.06 <u>1.42</u> 1.12 1.90	1.07 1.05 1.02 1.0	.06 1.06 1.02	1.06 1.07 1.04 1.06	1.01 1.21 1.10 1.08 1.05
Italy 15771 15977 1.05 1.06 <u>1.79</u> 1.27 1.04 1.19	1.08 1.39 1.08 1.01	1.11 1.12 <u>1.49</u> 1.06 1.05	1.60 1.13 1.09 1.0	.01 1.01 1.05	1.01 1.00 1.03 1.14	1.06 1.13 1.03 1.00
Latvia 17803 24497 <u>1.47</u> <u>1.45</u> 1.17 1.21 <u>1.48</u> 1.29	<u>1.42</u> 1.10 <u>1.42</u> <u>1.55</u>	<u>1.38</u> <u>1.37</u> 1.03 <u>1.63</u> <u>1.46</u>	<u>1.53</u> 1.00 1.03 1.1	.12 1.11 1.08	1.12 1.13 1.10 1.01	1.06 1.28 1.16 1.13 1.00
Lithuania 17208 24160 <u>1.45</u> <u>1.43</u> 1.18 1.19 <u>1.46</u> 1.27	<u>1.40</u> 1.09 <u>1.40</u> <u>1.53</u>	<u>1.36</u> <u>1.35</u> 1.02 <u>1.61</u> <u>1.44</u>	<u>1.51</u> 1.01 1.00 1.0	.08 1.08 1.04	1.09 1.06 1.04	
uxembour 15964 15675 1.07 1.08 <u>1.82</u> 1.30 1.06 1.21	1.10 <u>1.42</u> 1.10 1.01	1.13 1.14 <u>1.52</u> 1.04 1.07	1.02 <u>1.56</u> <u>1.54</u> 1.5	.00 1.00 1.04	1.00 1.01 1.01 1.12	1.05 1.15 1.04 1.02 1.11
Malta 16000 16136 1.04 1.05 <u>1.77</u> 1.26 1.03 1.18	1.07 1.38 1.07 1.02	1.10 1.11 <u>1.47</u> 1.07 1.04	1.01 <u>1.52</u> <u>1.50</u> 1.0	.03 1.00 1.03	1.01 1.01 1.12	1.05 1.15 1.05 1.02 1.11
Netherland: 16545 16044 1.04 1.06 <u>1.78</u> 1.27 1.03 1.18	1.08 <u>1.39</u> 1.07 1.01	1.10 1.11 <u>1.48</u> 1.07 1.05	1.00 <u>1.53</u> <u>1.51</u> 1.0	.02 1.01 1.00	1.04 1.05 1.02 1.08	1.01 1.19 1.08 1.05 1.07
Norway 13894 13531 1.07 1.09 <u>1.84</u> 1.31 1.07 1.22	1.11 <u>1.43</u> 1.11 1.02	1.14 1.15 <u>1.33</u> 1.05 1.08	<u>1.05 <u>1.38</u> <u>1.35</u> <u>1.0</u></u>	.01 1.04 1.03	1.00 1.00 1.02 1.13	
Poland 15821 21445 1.28 1.27 1.55 1.06 1.29 1.15	1.24 1.04 1.24 1.33	1.21 1.20 1.11 <u>1.43</u> 1.28	1.34 1.14 1.13 1	.3/ 1.33 1.34	1.38 1.00 1.02 1.13	
Politigai 10190 17412 1.04 1.05 <u>1.04</u> 1.17 1.05 1.09 Pomania 17020 22055 1.42 1.41 1.10 1.18 1.44 1.26	1.01 1.20 1.01 1.10	1.02 1.02 1.02 1.00 1.10 1.04	1.09 <u>1.41</u> <u>1.39</u> 1.	52 1 49 1 40 1	1.12 1.23 1.00 1.11 1.54 1.12 1.28 1.00	1.04 1.10 1.00 1.03 1.10
Romania 1/920 23933 1.43 1.41 1.19 1.18 1.44 1.20 Slovalia 16760 21341 1.28 1.26 1.34 1.05 1.20 1.12	<u>1.30</u> 1.08 <u>1.39</u> <u>1.31</u>	<u>1.35</u> <u>1.34</u> 1.01 <u>1.39</u> <u>1.43</u>	<u>1.30</u> 1.02 1.01 <u>1.</u>	<u>26 122 122 1</u>	<u>1.34</u> 1.12 1.30 1.00	1.07 1.29 1.17 1.14 1.01
Slovania 10/09 21341 1.28 1.20 1.34 1.03 1.29 1.12 Slovania 13010 16812 1.01 1.01 1.70 1.21 1.01 1.13	1.23 1.04 1.24 1.33 1.03 1.03 1.06	1.20 1.20 1.11 1.22 1.27	1.05 1.46 1.44 1.0	07 1.04 1.05	1.37 1.00 1.23 1.12 1.08 1.28 1.04 1.42	1.00 1.21 1.10 1.07 1.00
Spain 15301 15864 1.05 1.07 1.80 1.22 1.05 1.20	1.09 1.02 1.03 1.00 1.00	112 112 150 106 106	1.01 1.54 1.52 1.0	01 1.02 1.01	1.00 1.20 1.04 <u>1.42</u> 1.02 1.35 1.10 1.51	135 106 100 1.13 1.20
Sweden 15707 15115 111 112 1.80 1.34 110 1.26	114 147 114 105	117 118 157 101 111	1.06 1.62 1.60 1.	04 107 106	103 142 115 158	141 111 105 100 113
UK 17766 18370 1.10 1.09 1.56 1.11 1.11 1.03	1.06 1.21 1.07 1.16	1.04 1.03 1.29 1.22 1.09	1.15 1.33 1.32 1	17 1.14 1.14	1.18 1.17 1.06 1.30	1.16 1.09 1.16 1.22 1.00





Opportunities to Focus on the Public's Health

Results II: Changes in NCDs DALY rate between 1990 and 2019







Results III: Annual rate of change in age-standardized NCDs DALY rates

- Level of change in females ranged from -0.12
 - (95% UI: -0.10 to -0.15) in the Netherlands to -
 - 0.28 (95% UI: -0.17 to -0.40) in Slovenia and
 - (95% UI: -0.21 to -0.35) Poland.

The change in males ranged from -0.10 (95% UI: 0.06 to -0.23) in Bulgaria to -0.40 (95% UI: -0.32 to -0.47) in Czechia.







Opportunities to Focus on the Public's Health

Results IV: NCDs DALYs rate ratios by level 2 NCD cause of disease



- Five NCDs had consistent ratios of 2.68 or higher:
 - Digestive diseases, DM and kidney diseases, substance use disorders, CVDs, and chronic respiratory diseases.
- For CVDs, the ratio increased from 3.66 (1990) to 5.88 (2019).
- For digestive diseases and DM and kidney diseases a decrease in ratio was observed between 1990 and 2019.
- For NCDs, musculoskeletal disorders, mental disorders, neoplasms, and sense organ diseases the DALY rate ratio was consistently lower than 2.23 between 1990 and 2019.





Opportunities to Focus on the Public's Health

Results V: Assessing health inequalities in NCDs by using Gini coefficient

- Low inequalities according to the GC between countries were found for NCD (level 1).
- The lowest GC were found between 2017 and 2019, between 0.064 (95% CI: 0.044 to 0.083) and 0.063 (95% CI: 0.040 0.086).
- The highest GC was observed in 1994 and 1995, which were 0.085 (95% CI: 0.065 to 0.106) and 0.084 (95% CI: 0.067 to 0.101).







Opportunities to Focus on the Public's Health

Results V: Assessing health inequalities in NCDs by using Gini coefficient

- Low inequalities according to the GC between countries were found for NCD (level 1).
- The lowest GC were found between 2017 and 2019, between 0.064 (95% CI: 0.044 to 0.083) and 0.063 (95% CI: 0.040 0.086).
- The highest GC was observed in 1994 and 1995, which were 0.085 (95% CI: 0.065 to 0.106) and 0.084 (95% CI: 0.067 to 0.101).
- The highest GCs are observed for CVD (0.283), chronic respiratory diseases (0.160), diabetes and kidney diseases (0.194), digestive diseases (0.244), and substance use disorders (0.224).







Opportunities to Focus on the Public's Health

Results VI: Assessing health inequalities in NCDs by using Slope Index of Inequality (SII)



- The SII was highest for level 1 NCDs:
 - 0.851 (95% CI: 0.730-0.972) in 1990 and 0.592 (95% CI: 0.470-0.715) in 2019
- Two peaks in 1994 and 2007.
- CVDs in 1990, 1994, 2007, and 2019: 0.852 (0.708 to 0.997), 0.997 (0.776 to 1.245), 0.784 (0.569 to 1.000), and 0.531 (0.381 to 0.681), respectively.
- For a group of level 2 diseases, the SII was very close to zero over the followup years.
- They ranged from 0.021 (neurological disorders in 1990) to 0.115 (digestive diseases in 1992).





Opportunities to Focus on the Public's Health

Conclusions

• NCDs with higher level of inequality across countries of EEA are CVDs, digestive diseases, diabetes and kidney diseases, substance

use disorders, and chronic respiratory diseases.

- GC analysis showed that the level 1 NCDs DALYs inequality within all included countries is narrow.
- DALY rate from NCDs decreased between 1990 and 2019 in all the 30 EEA member states.
- The rate of change varied between males and females and across regions and was larger for males and in Central European countries.
- Underlying social inequalities could be reduced through the right mix of policies that target modifiable risk factors.





Opportunities to Focus on the Public's Health

Presenter

- Carlos Alexandre Soares Andrade
- soares.andrade@med.unideb.hu
- Department of Public Health and Epidemiology, Faculty of Medicine, University of Debrecen Hungary

Authors

Carlos Andrade, Nour Mahrouseh, Brigid Unim, Sarah Cuschieri, Diana Grad, Isola Gaetano, Carl Baravelli, Florian Fischer, Periklis Charalampous, José Chen-Xu, Enkeleint A. Mechili, Romana Haneef, Nanna Weye, Jinane Ghattas, Tina Lesnik, Elena von der Lippe, Juanita Haagsma, Orsolya Varga.

Acknowledgements

This publication is based upon work from COST Action CA18218 (European Burden of Disease Network; www.burden-eu.net), supported by COST (European Cooperation in Science and Technology; www.cost.eu).



PCO

.TriumphGroup experience.emotion.events

www.wcph.org infowcph2023@thetriumph.com

SCIENTIFIC SECRETARIAT

World Federation of Public Health Associations

secretariat@wfpha.org