

Fire safety

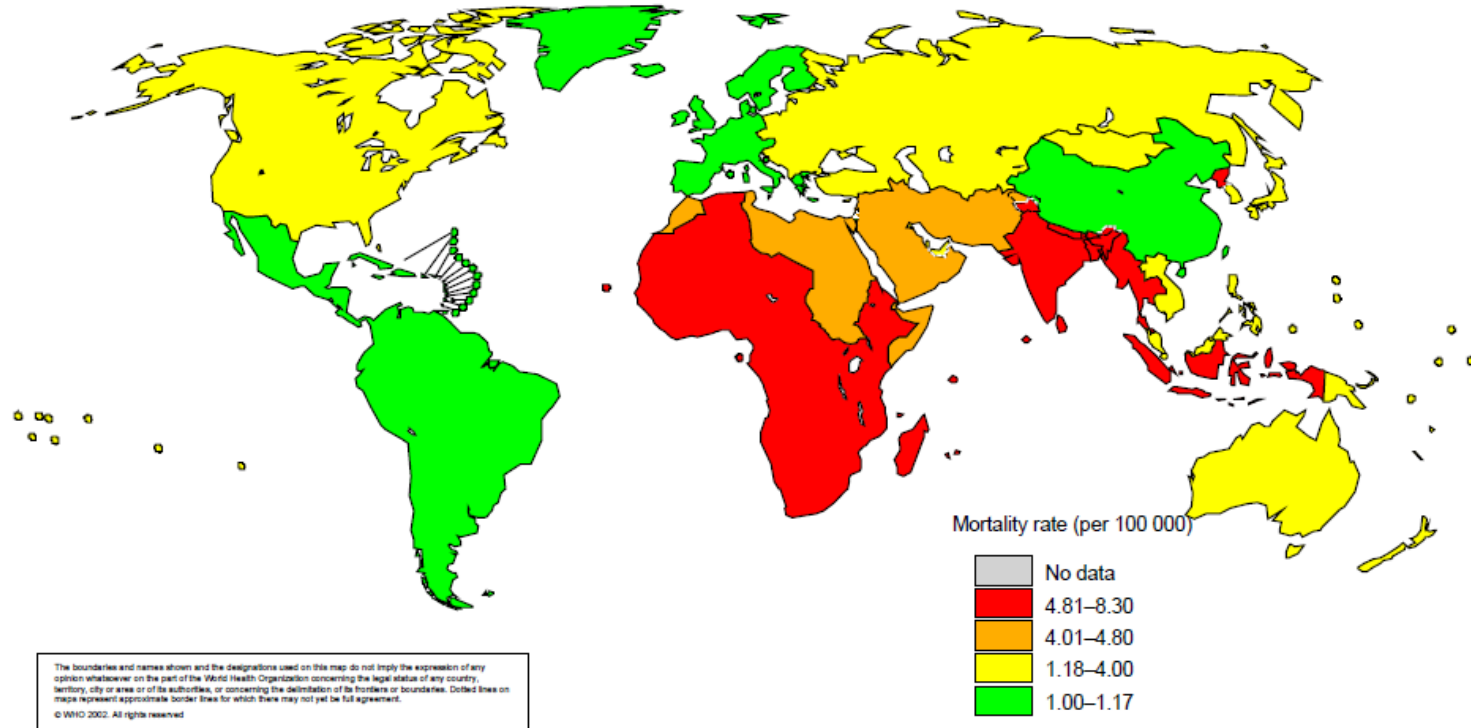
– a global public health concern

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The overall fire and burn problem

Global Fire-related Burn Mortality

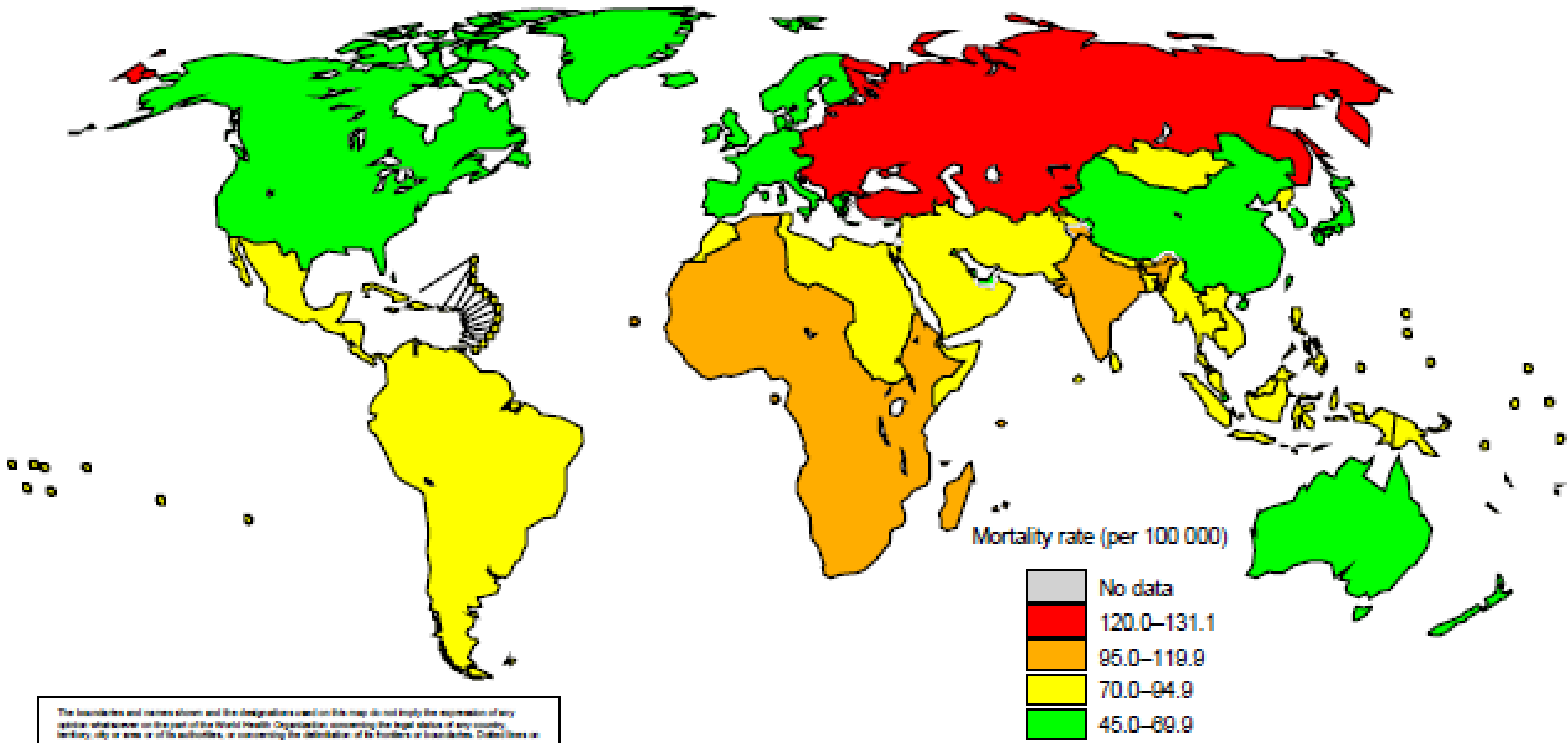


Fire-related burn mortality rates (per 100 000 population) in WHO regions, 2000

Africa		Americas		South-East Asia		Europe		Eastern Mediterranean		Western Pacific		
LMIC	HIC	LMIC	India	Other LMIC	HIC	LMIC	HIC	LMIC	HIC	China	Other LMIC	
5.5	1.3	1.17	8.3	8.2	1.0	4.0	1.5	4.8	1.5	1.1	2.0	

HIC, High-income countries; LMIC, Low- and middle-income countries.

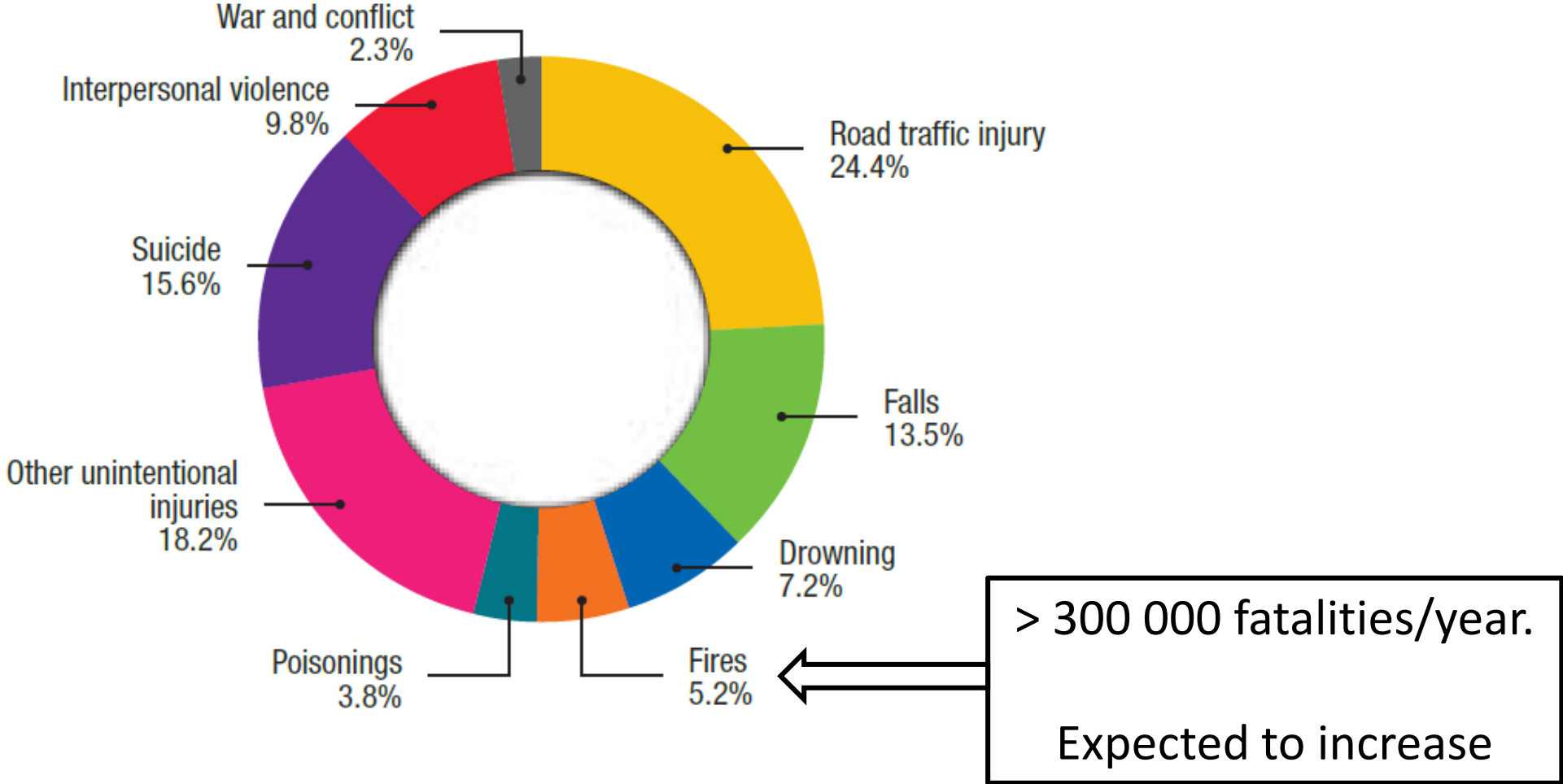
Global Injury-related Mortality



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More people killed in fires than in wars

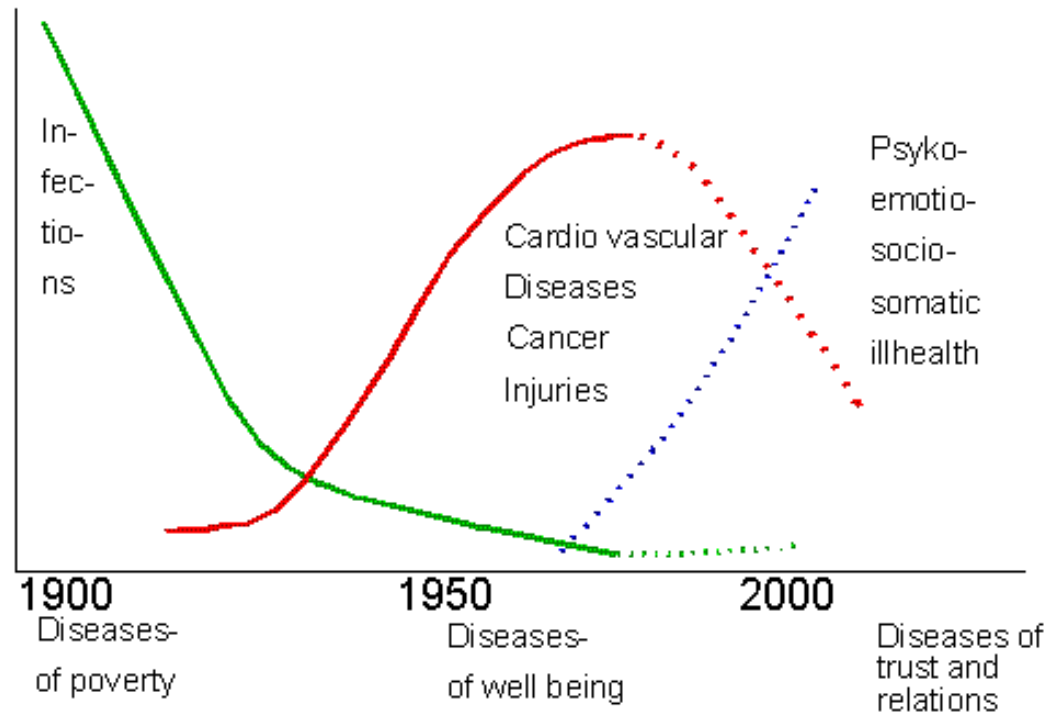
Figure 8.1
Leading causes among 5.1 million global deaths due to injuries and violence, 2012²



Source: WHO

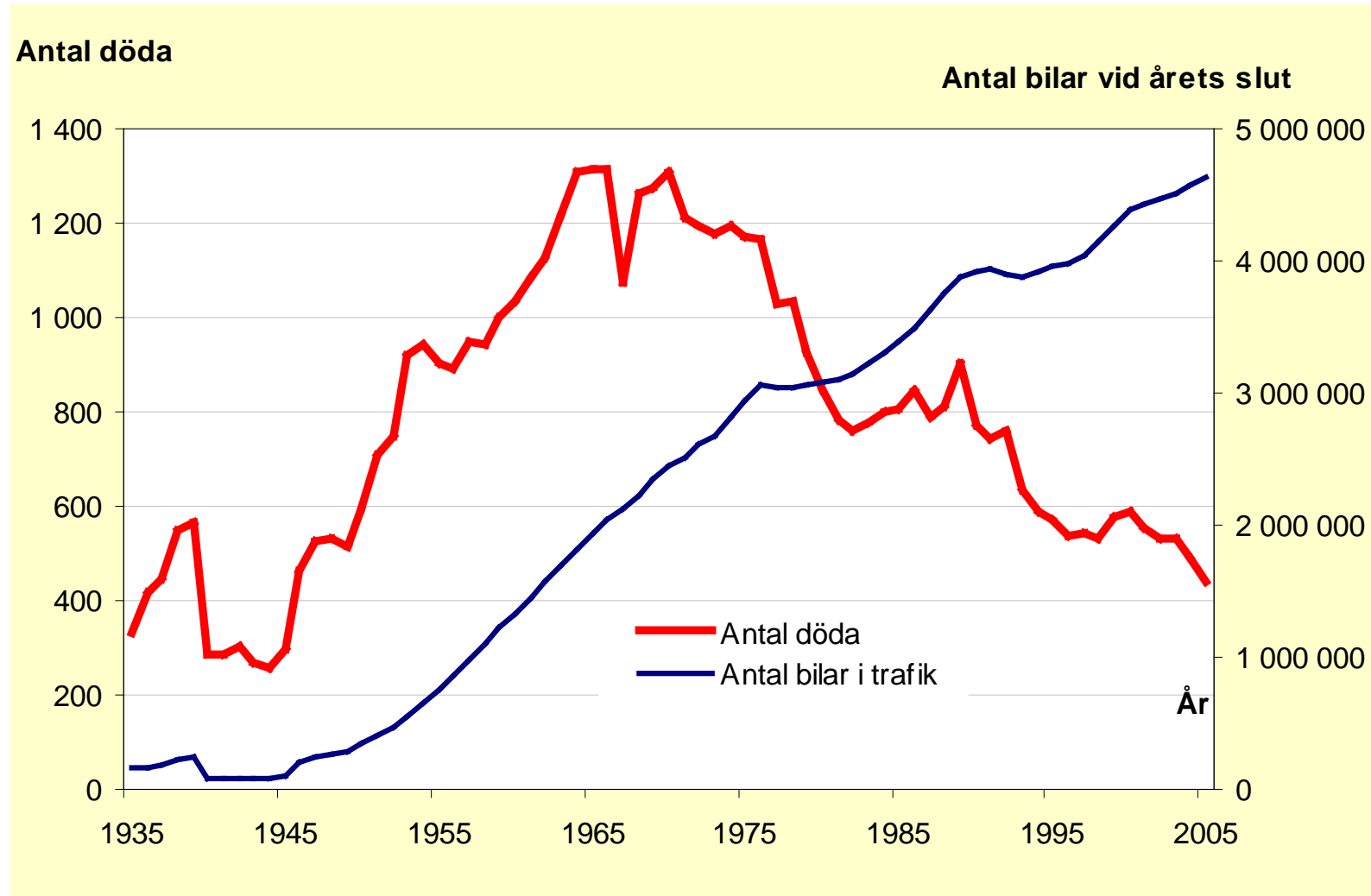


Health Transition Theory

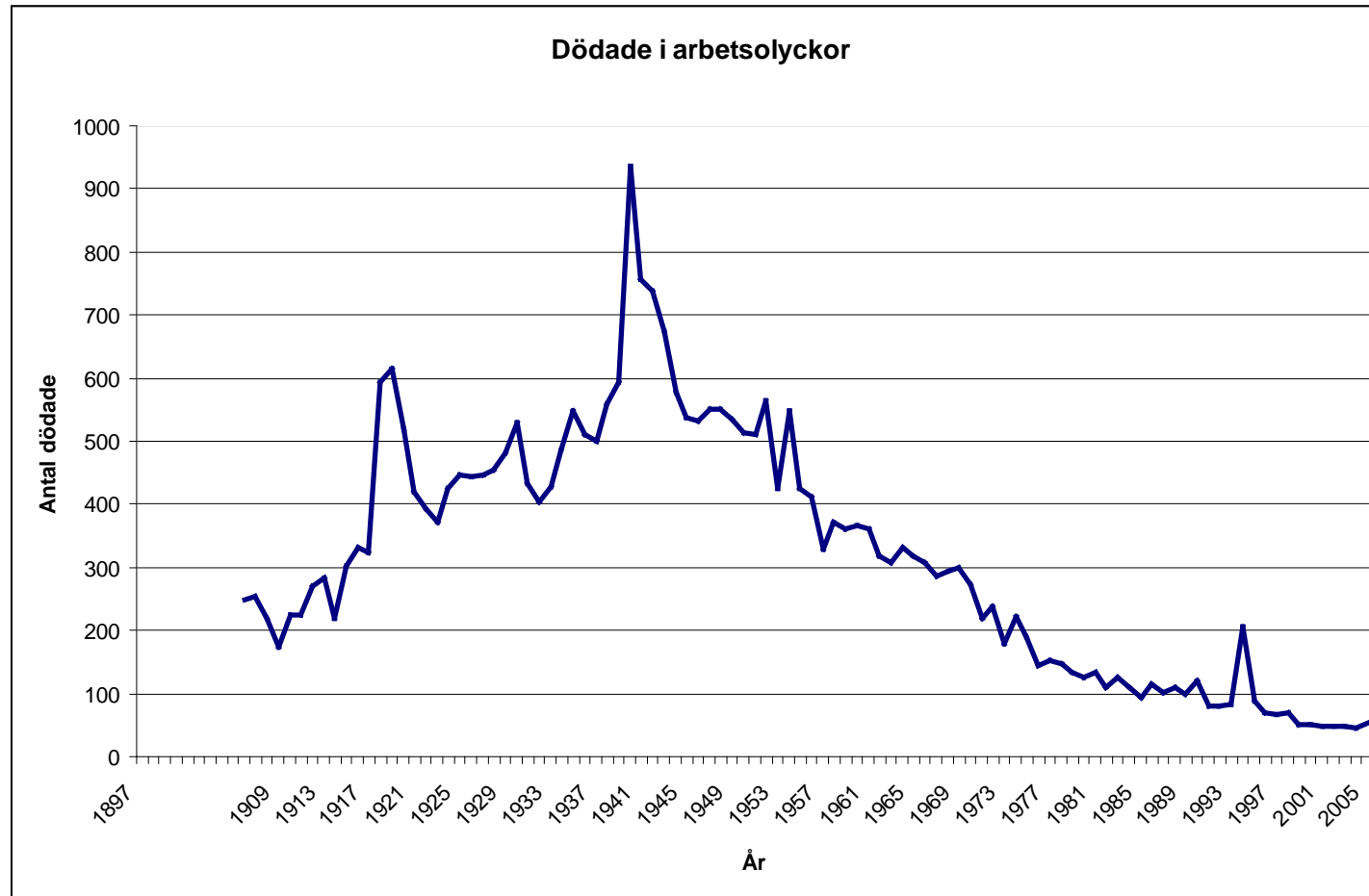


after Hjort P

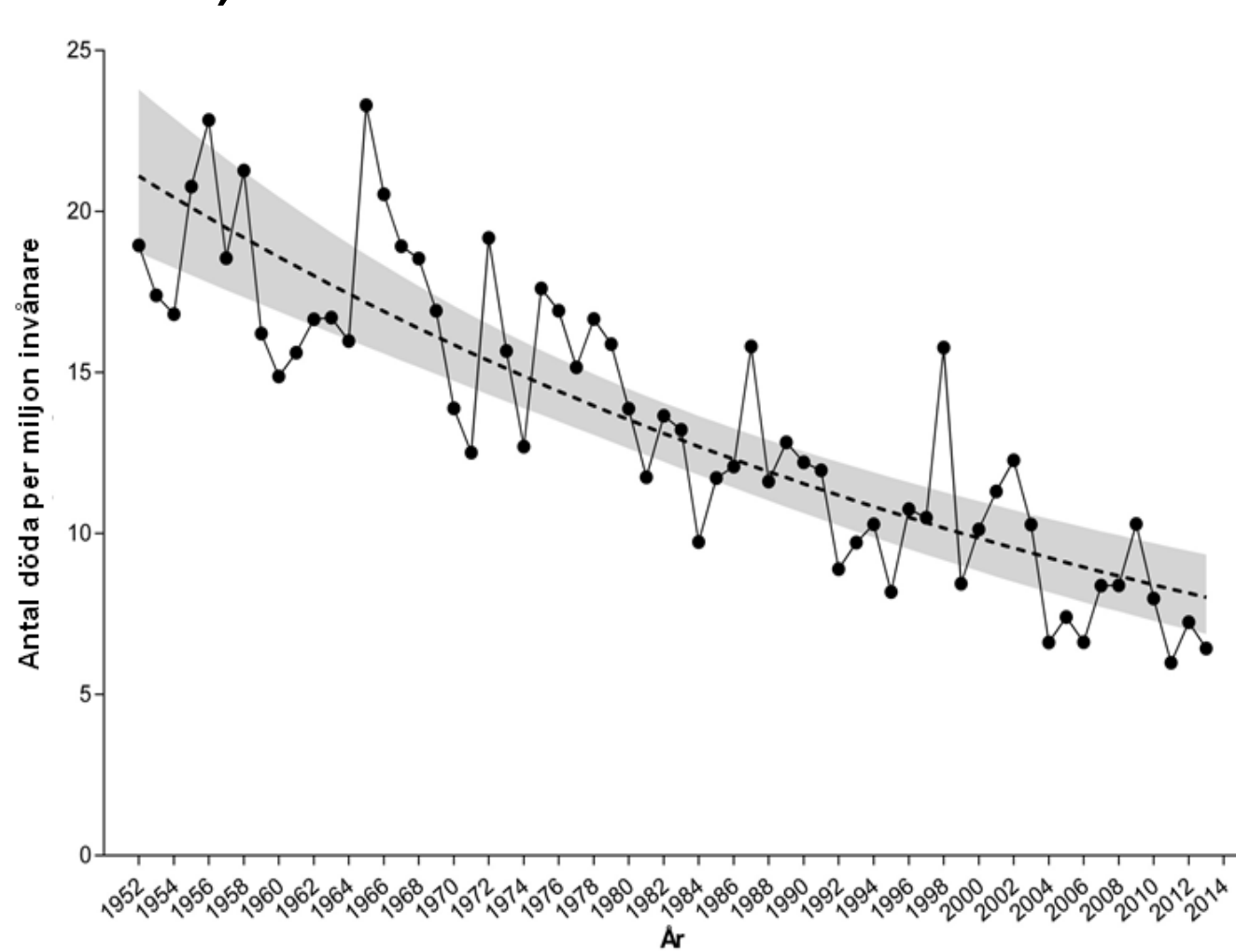
Killed in traffic, Sweden



Killed in occupational accidents, Sweden



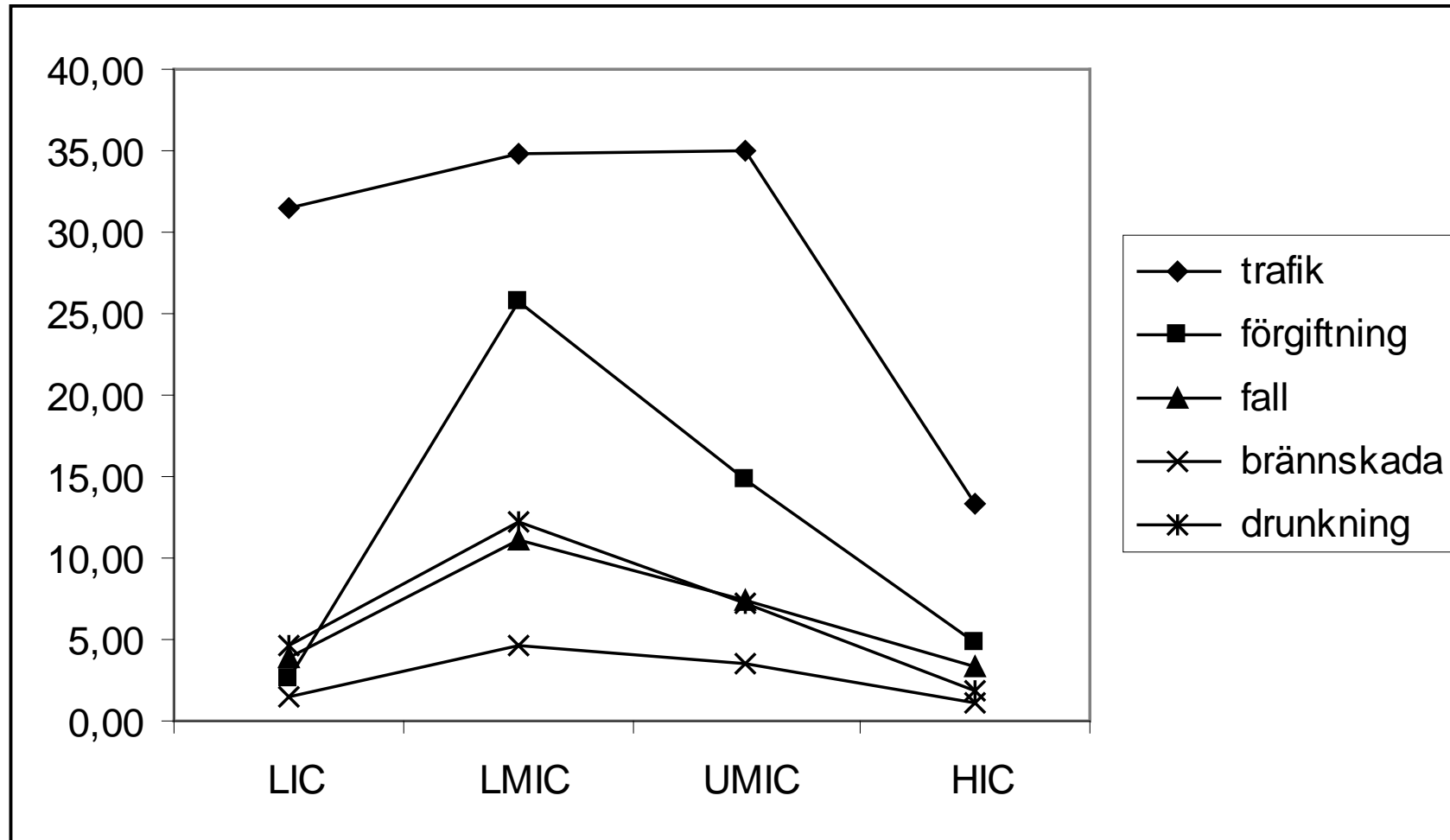
Killed in fires, Sweden



(Jonsson et al., 2015)



Unintentional injury by national income status



Traffic
Poisoning
Fall
Burn
Drowning

Table 3. Leading Causes of Death, Males, 2000

<i>Rank</i>	<i>0-4 years</i>	<i>5-14 years</i>	<i>15-29 years</i>	<i>30-44 years</i>	<i>45-59 years</i>	<i>≥ 60 years</i>	<i>All Ages</i>
1	Lower respiratory infections 1 095 015	Childhood cluster diseases 100 000	HIV/AIDS 325 775	HIV/AIDS 695 268	Ischaemic heart disease 624 040	Ischaemic heart disease 2 820 403	Ischaemic heart disease 3 625 356
2	Diarrhoeal diseases 682 778	Drowning 78 226	Road traffic injuries 284 754	Road traffic injuries 281 785	Cerebrovascular disease 328 573	Cerebrovascular disease 1 954 213	Cerebrovascular disease 2 406 168
3	Childhood-cluster diseases 354 577	Road traffic injuries 69 126	Interpersonal violence 134 993	Tuberculosis 234 051	Tuberculosis 282 718	Chronic obstructive pulmonary disease 1 231 222	Lower respiratory infections 2 083 873
4	Low birth weight 328 732	Lower respiratory infections 46 017	Tuberculosis 129 863	Ischaemic heart disease 155 300	HIV/AIDS 220 672	Lower respiratory infections 717 098	HIV/AIDS 1 499 548
5	Malaria 432 460	Diarrhoeal diseases 18 342	Self-inflicted injuries 123 957	Self-inflicted injuries 134 400	Trachea, bronchus, lung cancer 206 946	Trachea, bronchus, lung cancer 655 580	Chronic obstructive pulmonary disease 1 367 451
6	Birth asphyxia and birth trauma 427 170	War injuries 18 036	War injuries 68 764	Interpersonal violence 120 003	Cirrhosis of the liver 164 001	Hypertensive heart disease 345 896	Diarrhoeal diseases 1 177 893
7	HIV/AIDS 215 088	Malaria 27 159	Drowning 60 069	Cirrhosis of the liver 100 496	Road traffic injuries 160 144	Tuberculosis 342 995	Tuberculosis 1 047 542
8	Congenital heart anomalies 148 158	Tropical cluster diseases 19 580	Poisonings 19 004	Cerebrovascular disease 85 849	Lower respiratory infections 135 522	Stomach cancer 325 400	Road traffic injuries 910 629
9	Protein-energy malnutrition 84 037	Tuberculosis 17 711	Lower respiratory infections 28 582	Liver cancer 62 326	Liver cancer 135 477	Diarrhoeal diseases 268 900	Trachea, bronchus, lung cancer 895 045
10	STD's excluding HIV 76 194	HIV/AIDS 15 134	Cirrhosis of the liver 27 640	Lower respiratory infections 61 618	Diarrhoeal diseases 131 097	Diabetes mellitus 247 222	Childhood-cluster diseases 693 005
11	Drowning 68 637	Leukaemia 14 052	Leukaemia 24 428	War injuries 58 374	Self-inflicted injuries 134 933	Prostate cancer 244 605	Cirrhosis of the liver 531 075
12	Road traffic injuries 42 049	Interpersonal violence 13 145	Ischaemic heart disease 23 876	Poisonings 56 616	Stomach cancer 108 523	Cirrhosis of the liver 232 993	Low birth weight 528 762
13	Meningitis 41 240	Poisonings 11 684	Rheumatic heart disease 22 954	Drowning 40 717	Chronic obstructive pulmonary disease 107 386	Colon and rectum cancers 225 205	Malaria 522 112
14	Tuberculosis 40 202	Congenital heart anomalies 11 149	Nephritis and nephrosis 22 403	Nephritis and nephrosis 39 411	Mouth and oropharynx cancer 88 180	Liver cancer 222 796	Self-inflicted injuries 509 404
15	Anencephaly 38 069	Self-inflicted injuries 10 454	Falls 22 178	Diarrhoeal diseases 39 642	Hypertensive heart disease 75 111	Oesophagus cancer 184 943	Stomach cancer 464 106

Table 5. Leading Causes of Death, Females, 2000

<i>Rank</i>	<i>0-4 years</i>	<i>5-14 years</i>	<i>15-29 years</i>	<i>30-44 years</i>	<i>45-59 years</i>	<i>≥ 60 years</i>	<i>All Ages</i>
1	Lower respiratory infections 1 039 215	Childhood cluster diseases 100 154	HIV/AIDS 529 630	HIV/AIDS 553 740	Ischaemic heart disease 307 226	Ischaemic heart disease 2 874 093	Ischaemic heart disease 3 264 700
2	Diarrhoeal diseases 632 633	Lower respiratory infections 66 722	Tuberculosis 108 158	Tuberculosis 134 449	Cerebrovascular disease 244 492	Cerebrovascular disease 2 358 164	Cerebrovascular disease 2 695 280
3	Childhood cluster diseases 554 088	Diarrhoeal diseases 50 087	Self-inflicted injuries 92 703	Self-inflicted injuries 76 862	Breast cancer 145 125	Chronic obstructive pulmonary disease 1 054 613	Lower respiratory infections 1 782 448
4	Low birth weight 496 755	Malaria 49 098	Road traffic injuries 69 938	Ischaemic heart disease 69 687	Tuberculosis 131 133	Lower respiratory infections 508 545	HIV/AIDS 1 443 313
5	Malaria 473 377	Road Traffic injuries 49 086	Maternal haemorrhage 59 456	Breast cancer 61 458	HIV/AIDS 112 323	Hypertensive heart disease 408 599	Chronic obstructive pulmonary diseases 1 155 531
6	Birth asphyxia and birth trauma 360 009	Drowning 59 057	Fires 42 004	Road traffic injuries 61 156	Cervix uteri cancer 97 815	Diabetes mellitus 365 504	Diarrhoeal diseases 946 138
7	HIV/AIDS 304 392	HIV/AIDS 50 887	Abortion 38 788	Cerebrovascular disease 60 115	Lower respiratory infections 90 583	Breast cancer 248 362	Childhood cluster diseases 692 369
8	Congenital heart anomalies 133 593	Fires 30 703	Lower respiratory infections 36 571	Maternal haemorrhage 60 013	Diarrhoeal diseases 79 897	Trachea, bronchus, lung cancers 231 207	Tuberculosis 612 868
9	Protein-energy malnutrition 18 492	Tuberculosis 18 650	Hypertensive disorders 34 951	Lower respiratory infections 40 812	Chronic obstructive pulmonary diseases 74 072	Colon and rectum cancers 216 756	Malaria 557 764
10	STD's excluding HIV 65 981	War injuries 13 635	Maternal sepsis 33 801	Cirrhosis of the liver 34 576	Trachea, bronchus, lung cancers 68 948	Stomach cancer 204 061	Low birth weight 496 821
11	Drowning 47 284	Tropical cluster diseases 12 265	Interpersonal violence 33 457	Rheumatic heart disease 34 497	Diabetes mellitus 66 704	Tuberculosis 193 308	Hypertensive heart disease 491 480
12	Anencephaly 47 177	Poisonings 11 609	War injuries 26 250	Maternal sepsis 34 089	Cirrhosis of the liver 62 973	Nephritis and nephrosis 175 199	Diabetes mellitus 464 793
13	Meningitis 35 609	Interpersonal violence 11 523	Rheumatic heart disease 25 107	Cervix uteri cancer 33 745	Hypertensive heart disease 60 783	Alzheimer and other dementias 169 091	Breast cancer 458 392
14	Road traffic injuries 33 660	Self-inflicted injuries 11 513	Diarrhoeal diseases 23 258	Nephritis and nephrosis 31 848	Road traffic injuries 51 895	Cirrhosis of the liver 152 493	Birth asphyxia and birth trauma 360 292
15	Endocrine disorders 29 635	Meningitis 10 481	Poisonings 22 861	Diarrhoeal diseases 28 435	Stomach cancers 51 617	Cervix uteri cancer 134 604	Road traffic injuries 329 209

Table 15. Leading Causes of Death, Low- and Middle-Income Countries, Males, 2000

<i>Rank</i>	<i>0-4 years</i>	<i>5-14 years</i>	<i>15-29 years</i>	<i>30-44 years</i>	<i>45-59 years</i>	<i>≥ 60 years</i>	<i>All Ages</i>
1	Lower respiratory infections 1 093 930	Childhood-cluster diseases 99 999	HIV/AIDS 323 985	HIV/AIDS 683 264	Ischaemic heart disease 536 764	Ischaemic heart disease 2 175 396	Ischaemic heart disease 2 877 009
2	Diarrhoeal diseases 682 460	Drowning 73 699	Road traffic injuries 258 223	Tuberculosis 233 232	Cerebrovascular disease 301 326	Cerebrovascular disease 1 637 326	Cerebrovascular disease 2 053 937
3	Childhood-cluster diseases 554 531	Road traffic injuries 66 509	Interpersonal violence 146 988	Road traffic injuries 221 119	Tuberculosis 280 950	Chronic obstructive pulmonary diseases 1 073 084	Lower respiratory infections 1 912 358
4	Low birth weight 523 757	Lower respiratory infections 45 803	Tuberculosis 129 733	Ischaemic heart disease 139 901	HIV/AIDS 215 499	Lower respiratory infections 557 781	HIV/AIDS 1 479 441
5	Malaria 432 459	War 30 022	Self-inflicted injuries 107 814	Interpersonal violence 114 139	Trachea, bronchus, lung cancers 154 301	Trachea, bronchus, lung cancers 398 242	Chronic obstructive pulmonary diseases 1 201 486
6	Birth asphyxia and birth trauma 421 223	Malaria 27 159	War 68 734	Self-inflicted injuries 113 179	Road traffic injuries 144 189	Tuberculosis 334 123	Diarrhoeal diseases 1 175 844
7	HIV/AIDS 215 022	Tropical-cluster diseases 19 578	Drowning 57 847	Cirrhosis of the liver 89 724	Cirrhosis of the liver 134 301	Hypertensive heart disease 306 445	Tuberculosis 1 035 950
8	Congenital heart anomalies 143 153	Tuberculosis 17 707	Poisonings 36 240	Cerebrovascular disease 79 286	Diarrhoeal diseases 130 977	Diarrhoeal diseases 267 383	Road traffic injuries 841 851
9	Protein-energy malnutrition 81 018	HIV/AIDS 15 072	Lower respiratory infections 27 803	Liver cancer 60 170	Lower respiratory infections 128 124	Stomach cancer 246 476	Childhood-cluster diseases 682 856
10	STD's excluding HIV 76 190	Leukaemia 13 267	Cirrhosis of the liver 27 284	Lower respiratory infections 58 989	Liver cancer 122 001	Cirrhosis of the liver 190 292	Trachea, bronchus, lung cancers 578 957
11	Drowning 67 812	Interpersonal violence 12 739	Ischaemic heart disease 23 034	War injuries 58 340	Chronic obstructive pulmonary diseases 100 339	Diabetes mellitus 179 235	Low birth weight 523 786
12	Road traffic injuries 60 843	Poisonings 11 625	Rheumatic heart disease 22 881	Poisonings 49 976	Stomach cancer 94 195	Liver cancer 171 196	Malaria 522 025
13	Meningitis 60 744	Congenital heart abnormalities 10 815	Leukaemia 22 756	Diarrhoeal diseases 39 579	Self-inflicted injuries 90 768	Oesophagus cancer 152 512	Cirrhosis of the liver 447 527
14	Tuberculosis 60 185	Self-inflicted injuries 10 001	Nephritis and nephrosis 22 325	Nephritis and nephrosis 38 465	Mouth and oropharynx cancers 78 096	Nephritis and nephrosis 140 847	Birth asphyxia and birth trauma 421 552
15	Anencephaly 37 833	Fires 9 628	Falls 20 605	Drowning 38 574	Hypertensive heart disease 68 796	Prostate cancer 126 396	Self-inflicted injuries 417 916

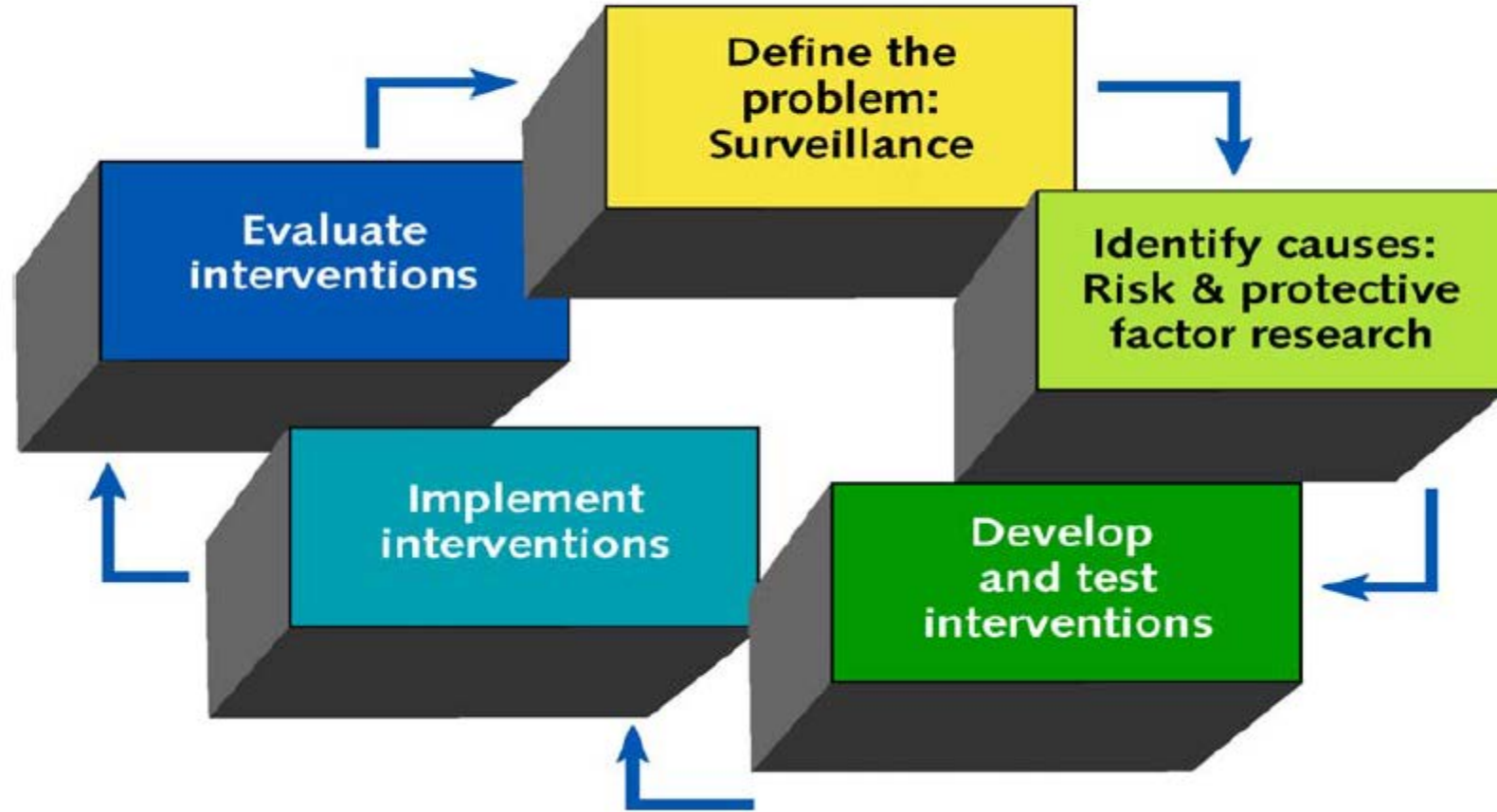
Table 17. Leading Causes of Death, Low- and Middle-Income Countries, Females, 2000

Rank	0-4 years	5-14 years	15-29 years	30-44 years	45-59 years	≥ 60 years	All Ages
1	Lower respiratory infections 1 034 343	Childhood-cluster diseases 100 131	HIV/AIDS 528 408	HIV/AIDS 550 444	Ischaemic heart disease 285 445	Ischaemic heart disease 2 211 101	Ischaemic heart disease 2 580 231
2	Diarrhoeal diseases 632 395	Lower respiratory infections 66 504	Tuberculosis 108 004	Tuberculosis 134 187	Cerebrovascular disease 228 292	Cerebrovascular disease 1 875 734	Cerebrovascular disease 2 190 866
3	Childhood-cluster diseases 354 071	Diarrhoeal diseases 50 079	Self-inflicted injuries 88 432	Self-inflicted injuries 69 522	Tuberculosis 130 725	Chronic obstructive pulmonary disease 944 135	Lower respiratory infections 1 579 373
4	Low birth weight 492 966	Malaria 49 098	Road traffic injuries 61 431	Ischaemic heart disease 66 260	HIV/AIDS 111 369	Hypertensive heart disease 335 137	HIV/AIDS 1 437 818
5	Malaria 473 376	Road traffic injuries 47 578	Maternal haemorrhage 29 411	Maternal haemorrhage 29 825	Breast cancer 108 199	Lower respiratory infections 312 222	Chronic obstructive pulmonary disease 1 040 147
6	Birth asphyxia and birth trauma 355 843	Drowning 38 812	Fires 41 747	Cerebrovascular disease 55 510	Cervix uteri cancer 93 240	Diabetes mellitus 268 419	Diarrhoeal diseases 943 324
7	HIV/AIDS 204 340	HIV/AIDS 30 826	Abortion 38 755	Road traffic injuries 34 793	Lower respiratory infections 86 918	Tuberculosis 181 471	Childhood-cluster diseases 692 171
8	Congenital heart disease 129 702	Fires 20 485	Lower respiratory infections 36 051	Breast cancer 50 372	Diarrhoeal diseases 79 829	Stomach cancer 151 183	Tuberculosis 607 201
9	Protein-energy malnutrition 88 480	Tuberculosis 18 643	Hypertensive disorders 34 834	Lower respiratory infections 39 293	Chronic obstructive pulmonary disease 69 626	Breast cancer 140 336	Malaria 557 732
10	STD's excluding HIV 63 982	War 13 627	Maternal sepsis 33 793	Rheumatic heart disease 34 222	Diabetes mellitus 60 149	Diarrhoeal diseases 129 347	Low birth weight 493 029
11	Anencephaly 46 904	Tropical-cluster diseases 12 264	Interpersonal violence 31 663	Maternal sepsis 34 080	Hypertensive heart disease 57 740	Nephritis and nephrosis 127 418	Hypertensive heart disease 414 233
12	Drowning 46 888	Poisonings 11 570	War 26 245	Nephritis and nephrosis 31 272	Cirrhosis of the liver 53 939	Cirrhosis of the liver 126 972	Diabetes mellitus 359 175
13	Meningitis 35 265	Self-inflicted injuries 11 321	Rheumatic heart disease 25 034	Cirrhosis of the liver 31 231	Trachea, bronchus, lung cancer 47 915	Cervix uteri cancer 125 377	Birth asphyxia and birth trauma 356 098
14	Road traffic injuries 32 780	Interpersonal violence 11 214	Diarrhoeal diseases 23 248	Cervix uteri cancer 31 008	Road traffic injuries 46 045	Trachea, bronchus, lung cancer 120 352	Breast cancer 302 039
15	Endocrine disorders 29 018	Meningitis 10 417	Obstructed labour 22 734	Diarrhoeal diseases 28 424	Stomach cancer 45 073	Colon and rectum cancers 105 771	Road traffic injuries 293 169

Facts in summary

- Injury, a global concern; 5 million deaths annually
- Fires kill ~ 300.000 people worldwide
- Low- and middle income countries are most at risk
- Injury mortality, incl. fire, disproportionately strikes younger and productive ages
- Socioeconomic development, a major determinant
 - Industrialization
 - Urbanization
 - Technology
 - Lifestyles
 - Health services
 - Ageing
- Magnitudes, patterns and causes differ between countries
- National strategies need to address national risk patterns

The Public Health Approach to Prevention



Centre for Injury Prevention and Research, Bangladesh (CIPRB)



