



WHO PROGRAMME FOR THE PREVENTION OF BLINDNESS

AVAILABLE DATA ON BLINDNESS (UPDATE 1987)

INTRODUCTION

In 1978 the Advisory Meeting on Programme Development for the Prevention of Blindness emphasized the need to collect information on the number of blind and their geographical distribution, as well as on the main causes of blindness. Following a Task Force meeting on Data on Blindness (November 1978), a first compilation of information available to WHO on the prevalence and causes of blindness throughout the world was prepared. A Blindness Data Bank was subsequently set up in the WHO Programme for the Prevention of Blindness (PBL) in Geneva.

1. THE BLINDNESS DATA BANK

Since the outset, one difficulty in managing the Blindness Data Bank has been the multiplicity of definitions used by different countries. The definition of categories of blindness recommended by WHO, and incorporated in the International Classification of Diseases (ICD, Ninth Revision), has gradually gained international acceptance.

The compilation of data consists of an open-ended country file for the collection, storage and dissemination of data on blindness. The file, organized in alphabetical sequence by area and country in accordance with the United Nations Demographic Yearbook, includes articles, papers, reports and other available information. A summary form is filled in for each country, which includes information listed under seven headings as follows:

- country, region
- source of data
- date of data collection
- type of data (registration, survey, census, estimate, etc.)
- definition of blindness used
- prevalence rates of low vision and blindness
- causes of blindness.

2. REVIEW OF DATA

Statistics on blindness available from various countries differ widely in reliability and comprehensiveness. The above-mentioned Task Force on Data on Blindness considered it impossible to reach an accurate total number of blind in the world, and therefore recommended concentration on those statistics which had been reliably ascertained. These may be used to elaborate a statistical model which would be likely to be generally valid in areas at a similar stage of development (especially with regard to eye care services), and with a similar age structure and pattern of eye diseases.

In relation to the prevalence of blindness, countries were broadly grouped as follows:

(a) Countries where, at least among the rural majority, eye care facilities have not yet reached an adequate level. Blindness rates reach the proportion of overburden because of the massive prevalence of trachoma, and/or xerophthalmia, and/or onchocerciasis, and/or cataract. In these countries the blindness prevalence rates are likely to range between 1% and 1.5%.



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(b) Countries at an interim stage of development, where the blindness rate is not massively augmented by the major causes mentioned above. Blinding infections are still only partially controlled, and people can remain blind from surgically curable conditions because such treatment is not readily available. In these countries the blindness rate is likely to range from 0.40% to 0.65%.

(c) Countries with advanced medical services, where blinding infections are under control, where most curable blindness is treated and where the main causes of blindness are age-related (i.e., glaucoma, macular degeneration, diabetic retinopathy). The blindness prevalence rates are likely to range from 0.15% to 0.25%.

Applying the above criteria, it was estimated in 1978 that there were some 28 million blind people in the world, if the definition of blindness were set at a visual acuity of less than 3/60, or its equivalent. If the definition of blindness as visual acuity of less than 6/60 were to be applied, the total number of blind people would be about 42 million.

3. REVISION OF DATA

These estimates from 1978 have been revised as and when better and more comprehensive figures become available, such as results of national population-based surveys. For this purpose, an attempt has been made to collect and include all data published after 1970, excluding data where the definition of blindness is not clearly given, or where rough estimates, not founded on any definite criteria, are advanced.

More than 150 references have been analysed for a total of 90 countries (or territories) as a basic source of information on the worldwide prevalence of blindness. To ensure better comparability an attempt was first made to adopt the criteria defined by the Task Force and to use the same statistical pattern. This approach has been abandoned because of the difficulty encountered in grouping countries in (a) and (b) as mentioned above. For the calculation of the estimates presented below, the division of the world into 8 macro-regions and 21 regions has been followed in accordance with the presentation in the UN Demographic Yearbook. For each region, UN estimates of the mid-year population for 1984 were available.

Since the most reliable source of information concerning the prevalence of blindness is through population-based surveys with a randomized sampling procedure, one or more countries were selected in each region where sample surveys have been carried out during the last six years using the ICD classification of visual impairment. Their blindness prevalence rates defined as a confidence interval (minimum and maximum within which the true overall rate is likely to be) were used as standard rates for the whole region.

For the computation of the number of blind if the definition of blindness is less than 6/60, or its equivalent, the estimates presented here are based on the gross assumption that the number of cases in categories 2, 3, 4 and 5 of the ICD classification of visual impairment (less than 6/60) is approximately 50% greater than that of those in categories 3, 4 and 5 (less than 3/60).

Applying these new criteria, the gross estimate may be made from available data that, in 1984, there were between 27 and 35 million blind people in the world with a visual acuity less than 3/60.

Table 1. Estimates of blindness prevalence (absolute numbers) in different Regions. (1984)

REGIONS	POPULATION 1984 (x 10 ⁶)	NUMBER OF BLIND (x 10 ³)			
		3/60		6/60	
		Min.	Max.	Min.	Max.
<u>Africa</u>	539	5 250	6 810	7 950	10 175
<u>America</u>					
North	260	390	650	575	975
Latin	397	1 760	2 315	2 670	3 500
<u>Asia</u>					
China	1 052	4 200	5 260	6 300	7 900
Japan	119	180	300	270	450
East Asia (others)	67	245	300	360	460
Southern	1 429	13 250	15 650	19 900	23 250
Western	110	900	1 125	1 350	1 700
<u>Europe</u>	490	865	1 350	1 300	2 040
<u>Oceania</u>					
Australia + New Zealand	19	28	50	40	75
Others	6	23	30	35	45
<u>USSR</u>	276	550	825	825	1 250
TOTAL	4 764	27 000	- 35 000	41 000	- 52 000

The statistical analysis of data is an important element for the planning and evaluation of many activities in eye health care and for a prevention of blindness programme. Reliable statistics on demography, ocular morbidity and visual loss are very useful tools for epidemiological and preventive ophthalmology, and they are essential for the monitoring and evaluation of progress made in national blindness prevention programmes. It would therefore be of great interest to develop further the collection and analysis of data, as described above, to be able to assess trends with regard to eye diseases and visual loss in the world.

In the analysis of this kind of data, careful consideration must be given to all variables, and the reliability, or accuracy, of their assessment. No direct comparisons can be made between the figures for the blind in 1978 (28 and 42 million) and those obtained in 1986 (27 to 35 million and 41 to 52 million respectively), as the methods used for estimation have been different. It is also obvious that important demographic changes have taken place over the period from 1975 to 1984, in particular a pronounced increase of the population in developing countries, as seen in Table 2. Furthermore, the proportion of the elderly population is rapidly increasing in all countries, and again, particularly in developing countries. This emphasizes the need for continuous monitoring of data on blindness and its causes in developing and developed countries. It is also of importance to be able to forecast correctly the expected future need for eye care, particularly in relation to provision of services, such as for cataract surgery.

Table 2. World Population Trend (1975-1984) : in millions

	1975	1984	Increase %
Africa	413	539	30.5
America	560	657	17.3
North	239	260	9.2
Latin	321	397	23.7
Asia	2 354	2 777	17.9
Europe (incl. USSR)	728	766	5.2
Oceania	21	24.5	14.2
Total	4 076	4 763.5	16.8
Developed countries	1 102	1 178	6.8
Developing countries	2 974	3 585	20.5

In the future, a microcomputer will be available for the regular up-dating of the Blindness Data Bank.

EXPLANATORY NOTES TO THE DATA BANK

Continent; country or territory, (WHO Region) (column 1), are listed following the order in the Demographic Yearbook 1983 (United Nations, New York, 1985). If the country is a WHO Member State, the WHO Region covering this state is indicated in brackets, as follows :

- (AFR) : WHO Region for Africa
- (AMR) : WHO Region for the Americas
- (EMR) : WHO Region for the Eastern Mediterranean
- (EUR) : WHO Region for Europe
- (SEAR) : WHO Region for South-East Asia
- (WPR) : WHO Region for the Western Pacific.

Population estimates (column 2), in millions, are those for 1983, taken from the Demographic Yearbook (United Nations, New York, 1985).

Date of data (column 3) : Year when data were collected.

Type of data (column 4) : C = census; E = estimate; R = registration; S = survey (or special study).

Definitions of blindness (column 5) : Visual acuity with the best possible correction.

1. Totally blind (no light perception).
2. 1/60, or less.
3. Less than 1/60 or its equivalent.
4. 2/60, or less.
5. 3/60, or less.
6. Less than 3/60 or its equivalent.
7. 20/300, or less.
8. 6/60, or less.
9. Less than 6/18.
10. Other.

Note : The order in which the definitions are listed does not correspond to a progressive/regressive sequence of visual acuity.

Population covered (column 6) : Resumé of information concerning the location and number of people examined (actual figures).

Number of blind (column 7) : Number of blind reported in the document of reference.

Prevalence rate (column 8) : Blindness prevalence rate, as a percentage.

Main causes (column 9) : Major causes of blindness, as a percentage, when available.

Source of data (column 10)

AFRICA

- BEN - 1 WHO unpublished data, 1978-1985
- BOT - 1 WHO document PBL/AG/81.3
- BFA - 1 Cahiers ORSTOM, 1983, XIX, 3: 285-291
- BFA - 2 WHO unpublished data, OCP/EEV/75.1
- BFA - 3 WHO unpublished data; OCP, 1975-1984
- CHA - 1 WHO document, PBL/78.1
- CHA - 2 National Programme for the Prevention of Blindness, Ministry of Health, Ndjamena, 1985.
- EGY - 1 International Congress for the Prevention of Blindness, Cairo, 1974, pp. 19-20.
- EGY - 2 International Eye Foundation, Final Report Integrated Urban Primary Eye Care Project, Cairo, 1985.
- ETH - 1 Revue International du Trachome et de Pathologie oculaire tropicale et subtropicale et de Santé Publique. 1981, 3.
- ETH - 2 Revue International du Trachome et de Pathologie oculaire tropicale et subtropicale de santé publique. 1984, 2-3-4: 128-135.
- GAM - 1 National Survey on Blindness and Eye Disease in the Gambia, 1986 (unpublished report).
- GHA - 1 WHO unpublished data, OCP, 1976-1980.
- IVC - 1 WHO unpublished data, OCP, 1977-1979.
- KEN - 1 East African Medical Journal, 1976, 53: 64-73.
- KEN - 2 Survey results from the Kenya Rural Blindness Prevention Project, Nairobi, 1981 (unpublished report).
- LIB - 1 Zeitschrift für Tropenmedizin und Parasitologie 1973, 24: 339-357.
- LIB - 2 Tropenmedizin und Parasitologie, 1975, 26: 469-488.
- MAL - 1 British Journal of Ophthalmology, 1977, 61, 154-157.
- MAL - 2 Unpublished document, 1985.
- MAI - 1 WHO unpublished data, OCP, 1976-1977-1985.
- MAI - 2 WHO document, PBL/AG/81.7.
- MAI - 3 Ecole Nationale de Médecine et de Pharmacie du Mali, 1985.

- NIC - 1 WHO unpublished data, OCP, 1977.
NIG - 2 Unpublished document, Ministère de la Santé Publique et des Affaires sociales, Niamey, 1983.
NIE - 1 WHO document, VIR/PBL/75-1: 1-35.
NIE - 2 WHO unpublished document, 1977.
SEY - 1 Journal of Tropical Medicine and Hygiene, 1976, 79: 72-82.
SUD - 1 Bulletin of the Ophthalmological Society of Egypt, 1976, 69, 629-633.
SUD - 2 Social Science and Medicine, 1983, vol 17, 22: 1785-1788.
TOG - 1 WHO unpublished data, OCP, 1976-1982.
TOG - 2 National Survey on Blindness in Togo, 1983-1986. (unpublished report).
TUN - 1 British Journal of Ophthalmology, 1976, 60: 245
TUN - 2 Revue International du Trachome et de Pathologie oculaire tropicale et subtropicale et de santé publique. 1981, 1-2, 119-127.
UGA - 1 East African Medical Journal, 1970, 47: 30-37.
UGA - 2 AFRO/WHO unpublished data, 1977.
TAN - 1 Helen Keller International, 1984.
TAN - 2 Tropenmedizin und Parasitologie, 1986, 37: 35-38.
ZAI - 1 WHO unpublished data, 1976.
ZAM - 1 WHO unpublished data, 1978.
ZIM - 1 WHO unpublished data, 1981.

AMERICA, NORTH

- BAR - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:39.
CAN - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:48.
COR - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:48.
COR - 2 PAHO/WHO document, 1986, (personal communication).
ELS - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:49.
GUT - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:50-51.
HAI - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:52.
USA - 1 Public Health Reviews, 1974, 3: 5-37.
USA - 2 National Society for the Prevention of Blindness, New York, 1974.
USA - 3 Survey of Ophthalmology: "The Framingham Eye Study Monograph" 1980, vol 24 (suppl.)
USA - 4 Visual Impairment and Blindness, May 1978: 181-183.

AMERICA, SOUTH

- ARG - 1 PAHO/WHO document, 1986 (personal communication).
BOL - 1 WHO document, PBL/85.10 (pp. 12-14).
BRA - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79: 41-42.
CHI - 1 PAHO/WHO unpublished data, 1977.
PER - 1 PAHO/WHO unpublished data, 1977.
PER - 2 XI Pan American Ophthalmology Conference, Santiago, Chile, 1977.
PER - 3 Helen Keller International, 1983.
PER - 4 Organización Peruana de Lucha contra la Ceguera, Lima, 1983.
VEN - 1 PAHO/WHO document, 1979, PAHO/DPC/PBL/1.0/79:60.
VEN - 2 PAHO/WHO document, 1986 (personal communication).

ASIA

- AFG - 1 WHO unpublished data, 1978.
AFG - 2 British Journal of Physiological Ophthalmology, 1979, 33(1): 1-40.
BAA - 1 WHO unpublished data, 1972.
BAN - 1 Bangladesh Medical Research Council Bulletin, 1976, 2: 71-74.
BAN - 2 WHO document, SEA/Ophthal/10, 1976.
BAN - 3 Acta Ophthalmologica Yugoslavica, 1977, 3-4, 193-199.
BAN - 4 WHO document, SEA/Ophthal/1980.
BAN - 5 Indian J. Medical Research, 1985, 82: 257-262.
BUR - 1 WHO document, SEA/Ophthal/10, 1976.
BUR - 2 Bulletin of the World Health Organization, 1978, 56: 945-955.
BUR - 3 WHO Weekly Epidemiological Record, 1984, 59: 313-317.

- CHN - 1 WHO Weekly Epidemiological Record, 1985, 60: 369-371.
 CYP - 1 American Journal of Ophthalmology, 1972, 74: 538-542.
 YEA - 1 WHO unpublished data, 1976.
 HOK - 1 Southeast Asian Journal of Tropical Medicine and Public Health, 1976, 7: 470-481.
 HOK - 2 WHO unpublished data, 1977.
 IND - 1 Conference for the Prevention of Impaired Vision and Blindness, Paris, 1974.
 IND - 2 Journal of the Indian Medical Association, 1976, 67: 234.
 IND - 3 Journal of Epidemiology and Community Health, 1978, 32: 131-135.
 IND - 4 Indian Journal of Ophthalmology, 1979, 27: 16-19.
 IND - 5 N.S.S.O. Survey, New Delhi, 1981.
 INO - 1 WHO unpublished document, WHO/PBL/85.10.
 IRA - 1 WHO document, EM/Ophthal/5, 1976.
 JPN - 1 WHO unpublished data, 1978.
 JPN - 2 World Council for the Welfare of the Blind, The Asian Blind, 1976, 9.
 JPN - 3 Ophthalmology in Japan, 1980, 55(3): 237.
 JPN - 4 Ophthalmology, 1985, 27(11): 1303-1312.
 LEB - 1 WHO unpublished document, A25/10, 1972.
 LEB - 2 American Journal of Ophthalmology, 1975, 79: 827-830.
 MAA - 1 WHO unpublished document, A25/10, 1972.
 MAV - 1 WHO unpublished document, A25/10, 1972.
 NEP - 1 WHO Weekly Epidemiological Record, 1983, 58: 321- 325.
 OMA - 1 WHO document, EM/Ophthal/7, 1976.
 PAK - 1 WHO document, EM/PBL/4, 1978.
 PAK - 2 WHO document, EM/Ophthal/5, 1976.
 PAK - 3 WHO document, EM/PBL/12, EM/Ophthal/19, 1981.
 PHL - 1 WHO document, WPR/WG/PBL/79.2, 1979.
 PHL - 2 WHO document data, 1983.
 PHL - 3 WHO unpublished data, 1983.
 QAT - 1 Ophthalmologica, 1977, 175: 215-221.
 KOR - 1 JKO. Soc., 1974, 15(1): 22-35.
 KOR - 2 Korean Institute of Health Development, 1980.
 SAA - 1 WHO unpublished data, 1979.
 SAA - 2 National Survey of Eye Disease and Visual Impairment, Kingdom of Saudi Arabia, 1984.
 SIN - 1 Conference for the Prevention of Impaired Vision and Blindness, Paris, 1974.
 VTN - 1 WHO document WPR/CD/FR/49, 1979.
 VIN - 2 WHO document WPR/PBL/INF/81.12, 1981.
 SRL - 1 WHO document SEA/Ophthal/10, 1976.
 SRL - 2 WHO document SEA/Ophthal/34, 1981.
 SRL - 3 WHO unpublished data, 1982.
 SYR - 1 International Congress for the Prevention of Blindness, Cairo, 1974: 19-20.
 THA - 1 National Statistical Office, Office of the Prime Minister, Thailand, 1977.
 THA - 2 WHO unpublished data, 1982.
 THA - 3 Thai Blindness Survey, 1983.

EUROPE

- BUL - 1 Conference for the Prevention of Impaired Vision and Blindness, Paris, 1974.
 DEN - 1 WHO document, A25/10: 28, 1972.
 FIN - 1 American Journal of Ophthalmology, 1970, 70: 422-426.
 FRA - 1 Organisation pour la Prévention de la Cécité, Paris, 1985.
 DEU - 1 Medizinische Klinik, 1973, 68: 279-282.
 DEU - 2 WHO unpublished data, 1977.
 HUN - 1 WHO document WHO/EURO/8401: 4, 1973.
 ICE - 1 Acta Ophthalmologica, 1980, 58(2): 237-242.
 ITA - 1 Survey on health status of the population, ISTAT, Roma, 1983.
 MAT - 1 WHO document, WHO/EURO 8404, 1974.
 NOR - 1 Tidsskrift for den Norske Lægerforening, 1976, 96: 365-368.
 POL - 1 Klinika Oczna, 1978, 48(80): 45.

- SWE - 1 Documenta Ophthalmologica, 1972, 31(1): 173-204.
SWE - 2 WHO unpublished data, (Socio medical register of the Swedish Federation of the Visually Handicapped) 1977.
UNK - 1 Department of Health and Social Security (Registered Blind and partially sighted persons), England, 1979.

OCEANIA

- AUS - 1 Australian Journal of Ophthalmology, 1977, 5: 155-157.
AUS - 2 WHO unpublished data, 1978.
AUS - 3 The Medical Journal of Australia, 1980, 6(1): 71-76.
COK - 1 WHO document - ICP/PBL/001, 1981.
FIJ - 1 WHO document WPR/WR/PBL/79.2, 1979.
FIJ - 2 WHO unpublished document, 1982.
FRP - 1 WHO document A 25/10, 1972.
NEC - 1 WHO document A 25/10, 1972.
KIR - 1 WHO document ICP/PBL/001, 1981.
KIR - 2 WHO document WPR/PBL/INF/81-12, 1981.
NEZ - 1 WHO document WPR/PBL/INF/81-7, 1981.
PNG - 1 Papua New Guinea Medical Journal, 1975, 18: 79-82.
PNG - 2 Australian Journal of Ophthalmology, 1981.
SOL - 1 WHO document WPR/PBL/INF/81-13, 1981.
TON - 1 WHO document ICP/PBL/001, 1981.
VAN - 1 WHO document ICP/PBL/001, 1981.

USSR

- SSR - 3 Vestnik oftal'mologii, 1978, 5, 77-78.
SSR - 1 Sovetskaya Meditsina, 1973, 36(6): 148-149.
SSR - 2 Vestnik oftal'mologii, 1978, 5, 77-78.

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Continent; country or territory (WHO Region)	Population estimate 1983 (in millions)	Date of data	Type of data	Definition of blindness	Population covered	Number of Blind	Prevalence rate %	Main Causes	Source of data
1	2	3	4	5	6	7	8	9	10
<u>AFRICA</u>									
Benin (AFR)	3.72	1978-1979	S	6	Onchocerciasis endemic areas, 14 956 from 52 villages.	175	1.2		BEN - 1
		1985	S	6	Onchocerciasis endemic areas. 3359 from 10 villages (Oti-Pendjeri).	38	1.1		BEN - 1
Botswana (AFR)	1.01	1980	E		Whole country.	10 000	1.4	Cataract 45% glaucoma 33% trauma 10% corneal scarring 7%.	BOT - 1
Burkina Faso (AFR)	6.61	1970-1975	C	?	Whole country 4 467 500.	22 775	0.5		BFA - 1
		1975	S	6	Onchocerciasis endemic areas. 3997 from 19 villages (East, Gaoua).	131	3.3		BFA - 2
		1975	S	6	Onchocerciasis endemic areas. 1170 from 6 villages (Volta-Noire).	30	2.6		BFA - 3
		1975	S	6	Onchocerciasis endemic areas. 3553 from 8 villages (Comoe - Leraba).	37	1.0		BFA - 3
		1984	S	6	Same areas after 10 years of vector control. 2882 from 11 villages.	22	0.8		BFA - 3
Chad (AFR)	4.79	1977	S	6	Rural areas in the south:				
					(a) onchocerciasis not endemic;	0.8	Corneal scarring 25% trachoma 17.8% cataract 42.9%.		
		(b) onchocerciasis endemic.	3.2	Onchocerciasis 58.7%.					
1985	S	6	Whole country: 5002 persons examined.	115	2.3	Corneal scarring 14% trachoma 23% cataract 48% glaucoma 15%.	CHA - 2		
Côte d'Ivoire (AFR)	9.16	1977	S	6	Onchocerciasis endemic areas. 2351 from 7 villages (Sassandra).		2.3		IVC - 1
		1977	S	6	Onchocerciasis endemic areas. 1637 from 9 villages (Marahoue).		2.4		IVC - 1
		1979	S	6	Onchocerciasis endemic areas. 3995 from 12 villages (Nzi - Bandama).		0.9		IVC - 1
Egypt (EMR)	44.53	1974	S	7	Northern Egypt:				
					(a) rural population	4.7	50% in rural areas and 30% in urban areas caused by trachoma and other infectious diseases.	EGY - 1	
(b) urban population	1.5								
1984	S	6	Urban (South Cairo).		3.3	Corneal scarring 5% trachoma 6.7% cataract 32% glaucoma 11.7%.	EGY - 2		

Continent; country or territory (WHO Region)	Population estimate 1983 (in millions)	Date of data	Type of data	Definition of blindness	Population covered	Number of Blind	Prevalence rate %	Main Causes	Source of data
1	2	3	4	5	6	7	8	9	10
Ethiopia (AFR)	33.68	1981	S	6	Rural areas (Awraja province): 1383 examined.		0.9	Trachoma 46.2% cataract 46.2% glaucoma 11.7%.	ETH - 1
		1982	S	6	Rural areas (7 provinces): 11 441 examined.		1.3		ETH - 2
Cambodia (AFR)	0.8	1986	S	6	Whole country: 8174 examined.		0.7	Corneal scarring 11% trachoma 17% cataract 55% phthisis bulbi 9%.	GAM - 1
Ghana (AFR)	12.70	1976	S	6	Onchocerciasis endemic areas, 3032 from 11 villages (Volta-Blanche).	79	2.6		GHA - 1
		1983	S	6	Same area after 7 years of vector control 1199 from 5 villages.	10	0.8		GHA - 1
		1980	S	6	Onchocerciasis endemic areas, 1400 from 8 villages (Volta Noire).	11	0.8		GHA - 1
Kenya (AFR)	18.78	1976	S	5	Rural areas (Machakos district) 895 examined; trachoma prevalence rate 44.7%.	10	1.1	Cataract 67% trachoma 33% glaucoma 10%.	KEN - 1
		1981	S	6	Whole country: 13 803 examined.		0.7	Trachoma 18.6% glaucoma 8.6% cataract 36% macular lesions 7.2%.	KEN - 2
Liberia (AFR)	2.06	1971	S	6	Onchocerciasis endemic areas, 2 285 examined (Bong Range).	27	1.2	Onchocerciasis 50% cataract 16% leucoma 13% phthisis bulbi 6% optic atrophy 6%.	LIB - 1
		1971	S	6	Whole country, 10 860 from 121 communities.	227	2.1	Cataract 45% onchocerciasis complications 25% other anterior segment lesions 14% phthisis bulbi 9% optic atrophy 6%.	LIB - 2
Malawi (AFR)	6.43	1975	R	3	Children under 5 years of age (205 800).			Infections 32% congenital cataract 14.7% other congenital conditions 16% optic atrophy 14.7% retinoblastoma 8% trauma 5.3%.	MAL - 1
		1983	S	6	Rural areas (Southern Lower Shire River Valley) 1574 six years and older. 5436 under six years of age.		1.3	Corneal scarring 30% cataract 40% other 30%.	MAL - 2
							0.1	Corneal scarring.	

Continent; country or territory (WHO Region)	Population estimate 1983 (in millions)	Date of data	Type of data	Definition of blindness	Population covered	Number of Blind	Prevalence rate %	Main Causes	Source of data
1	2	3	4	5	6	7	8	9	10
Mali (AFR)	7.53	1976	S	6	Onchocerciasis endemic areas. 1443 examined (Farako).		0.9		MAI - 1
		1977	S	6	Onchocerciasis endemic areas. 1861 examined (Baoulé).		4.0		MAI - 1
		1980	S	6	Rural areas (Sahel - Gao).		0.9-1.6	Anterior segment disorders 14.3% cataract 79.6% glaucoma and posterior segment disorders 6.1%.	MAI - 2
		1985	S	6	Onchocerciasis endemic areas. 2849 examined after 11 years of vector control (Farako).		0.7		MAI - 1
		1985	S	6	Rural areas 3538 examined (Kayes).		1.3	Corneal scarring 16.4% trachoma 28.4% cataract 32.8% glaucoma 9.5%.	MAI - 3
Niger (AFR)	5.77	1977	S	6	Onchocerciasis endemic areas. 1154 from 7 villages (Diamongou - Sirba).	43	0.9		NIG - 1
		1983	S	6	Rural areas 4112 examined (Niamey-Maradi)		1.7	Trachoma conjunctivitis cataract glaucoma.	NIG - 2
Nigeria (AFR)	89.02	1974	S	6	Rural areas 3517 examined (Northern - Garki District).		1.5	Trachoma 20% other corneal lesions 23% cataract 41% glaucoma 7%.	NIE - 1
		1974	S	6	Onchocerciasis endemic areas (Northern Hawal valley).		5.6	Onchocerciasis 75% corneal 8% cataract 12% glaucoma 6%.	NIE - 1
		1977	E		Whole country. Northern Nigeria. Southern Nigeria.	800 000	1.0 1.5 0.5		NIE - 3
Seychelles (AFR)	0.06	1974	R	8	Whole country, (blind population).	537	0.3	Cataract glaucoma trauma uveitis corneal scarring optic atrophy congenital abnormalities.	SEY - 1
Sudan (EMR)	20.36	1976	S	6	(1) Trachoma endemic areas. 95 000 (Northern Sudan).			Trachoma acute conjunctivitis cataract glaucoma trauma.	SUD - 1
					(a) rural areas; (b) urban areas.		4.5 1.4		
					(2) Trachoma non-endemic areas. 122 300 (Blue Nile Province).			Cataract infections glaucoma trauma.	
					(a) rural areas; (b) urban areas.		0.9 0.4		

Continent; country or territory (WHO Region)	Population estimate 1983 (in millions)	Date of data	Type of data	Definition of blindness	Population covered	Number of Blind	Prevalence rate %	Main Causes	Source of data
1	2	3	4	5	6	7	8	9	10
Sudan (cont'd)				(3) Onchocerciasis endemic areas. 45 000 (Bahr-el-Chezal).			5.1	Onchocerciasis infections cataract glaucoma trauma.	
		1983	S	8 Rural areas 1344 examined (Southern).		86	6.4	Corneal scarring 33% onchocerciasis 35% cataract 30%.	SUD - 2
Togo (AFR)	2.76	1976	S	6 Onchocerciasis endemic areas. 4709 examined from 10 villages (Kara/Oti/ Pendjari).		50	1.1		TOG - 1
		1982	S	6 Onchocerciasis endemic areas. 3786 from 6 villages after 6 years of vector control (Kara/Oti/ Pendjari).		40	1.1		TOG - 1
		1983	S	6 Rural areas 2657 examined (Tsévié).			0.7	Corneal scarring 7% cataract 69.8% glaucoma 7.9% onchocerciasis 4.6%.	TOG - 2
		1984	S	6 Rural areas 2758 examined (Dapango).			1.3	Corneal scarring 21.6% trachoma 5.6% cataract 45.3% glaucoma 6.8% onchocerciasis 3.9%.	TOG - 2
		1985	S	6 Rural areas 2931 examined (Sokodé).			1.0	Corneal scarring 16.7% trachoma 3.5% cataract 60.5% glaucoma 7.8% onchocerciasis 9.2%.	TOG - 2
		1986	S	6 Rural areas 2735 examined (Kara).			1.0	Corneal scarring 14.5% trachoma 11% cataract 39% glaucoma 3.5% onchocerciasis 29%.	TOG - 2
Tunisia (EMR)	6.89	1976	S	5 Rural areas 2799 examined in 2 villages; trachoma endemic among which 1173 adults above 30 years of age.			2.9-6.8		TUN - 1
							7.0-14.0		
		1980	S	5 Rural areas 8348 examined.		335	3.9	Corneal scarring 23% cataract 52.4% glaucoma 15.6% phthisis bulbi 5.4%.	TUN - 2
Uganda (AFR)	14.63	1970	S	? Rural areas 3146 examined (Bukedi district).		38	1.2	Trachoma 40.6% other corneal opacities 33.4% cataract 13.4% trauma 5.6% uveitis 2.8% optic atrophy 1.5% glaucoma 0.7%.	UGA - 1
			1977	E	? Whole country.		82 000	0.7	
United Republic of Tanzania (AFR)	20.38	1984	S	6 Rural areas 1789 examined (Kongwa).			1.6		TAN - 1
		1985	S	6 Rural areas (Tukuyu valley).			0.8		TAN - 2
				Onchocerciasis Medium endemicity			0.8		
				endemic areas: Low endemicity			1.0		
				Sporadic cases			0.7		

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1	2	3	4	5	6	7	8	9	10
Zaire (AFR)	31.15	1976	S		Rural areas 16 002 examined (Kasai-Oriental Province).	281	1.8		ZAI - 1
Zambia (AFR)	6.24	1978	S	6	Rural areas 876 examined (Western Province). 1118 examined (Southern Province). 1375 examined (Eastern Province).	20 13 11	2.3 1.2 0.8	Infections cataract glaucoma.	ZAM - 1
Zimbabwe (AFR)	7.14	1981	E	6	Whole country.		1.2	Cataract 40%, trachoma 20%, degenerative and con- genital disorders 15% infections 10% glaucoma 10% trauma 4%.	ZIM - 1
<u>AMERICA, NORTH</u>									
Barbados (AMR)	0.25	1975	S	8	Whole country.	1 255	0.5	Cataract glaucoma retinal diseases.	BAR - 1
Canada (AMR)	24.91	1979	E	8	Whole country.		0.2	Macular degeneration diabetic retinopathy glaucoma optic nerve atrophy cataract.	CAN - 1
Costa Rica (AMR)	2.44	1979	E	6	Whole country.	2 500	0.4	Glaucoma retinopathy cataract phthisis bulbi.	COR - 1
		1986	E	6	Whole country		0.2	Retinis pigmentosa cataract diabetic retinopathy glaucoma.	COR - 2
El Salvador (AMR)	5.23	1976	E	?	Whole country.	8 000	0.2		ELS - 1
Guatemala (AMR)	7.93	1979	E	5	Whole country.		0.4	Cataract trachoma onchocerciasis xerophthalmia,	GUT - 1
					Onchocerciasis endemic areas.		1.0-1.5		
					Trachoma endemic areas.		0.5-1.0		
Haiti (AMR)	5.20	1976	E	?	Whole country.	60 000	1.3		HAI - 1
United States of America (AMR)	233.70	1970	R	8	16 States: 30.1% of total population. (Model Reporting Area).	99 347	0.2	Retinal disease 25% cataract 13.1% glaucoma 11% optic nerve disease 9.2% uveitis 5.1% corneal/scleral involvement 4.7% myopia 3%.	USA - 1

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1	2	3	4	5	6	7	8	9	10
United States of America (cont'd)		1974	R	8	Whole country.	482 850	0.2		USA - 2
		1973-1975	S	8	Framingham (Massachusetts) 2631 examined (52 to 85 years old).		0.6	Cataract glaucoma diabetic retinopathy senile macular degeneration.	USA - 3
		1978	R	8	Blind population, Massachusetts.	15 175		Macular and retinal degeneration 21.2% diabetic retinopathy 10.3% glaucoma 7.3% cataract 7.3% optic nerve atrophy 5.4% corneal affection 4.7% retinitis pigmentosa 4.4%.	USA - 4
AMERICA, SOUTH									
Argentina (AMR)	29.63	1986	E	?	Whole country.		0.2	Glaucoma cataract diabetic retinopathy trauma.	ARG - 1
Bolivia (AMR)	6.08	1985	E	?	Whole country.	60 000	0.2-1.0	Corneal scarring cataract glaucoma trauma.	BOL - 1
Brazil (AMR)	129.7	1971	S	8	Sao Paulo State 156 422.	96	0.3	Glaucoma 31.3% eye infections 12.5% cataract 10.4% optic atrophy 9.4%.	BRA - 1
Chile (AMR)	11.68	1976	E	?	Whole country.	100 000	0.6-1.0	Glaucoma diabetic retinopathy cataract trauma.	CHI - 1
Peru (AMR)	18.7	1976	E	?	Whole country.	30 000	0.2		PER - 1
		1976	R	5	Urban area. Blind population.	1 800		Corneal scarring 11.8% cataract glaucoma 10.6% retinal disorders 25.8% amblyopia 12.3%.	PER - 2
		1983	S	6	Rural area Southern Peru (Puno) 1600 examined.		1.0	Cataract 34%.	PER - 3
		1983	S	6	Jungle zone (Tingo Maria - Pucallpa)			Cataract 37% glaucoma 13.1% corneal scarring 8.3% retinal disorders 6.2% optic atrophy 3.8%.	PER - 4
Venezuela (AMR)	16.4	1979	E		Whole country.		1.0	Diabetic retinopathy glaucoma.	VEN - 1
		1985	E		Whole country.		0.6-0.9	Diabetic retinopathy glaucoma cataract trauma.	VEN - 2

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1	2	3	4	5	6	7	8	9	
<u>ASIA</u>									
Afghanistan (EMR)	17.22	1978	E+S	?	Whole country.		2.0	Trachoma cataract glaucoma trauma xerophthalmia.	AFG - 1
		1979	S	3	Hospital cases.	473	-	Cataract 31.1% corneal scarring 19.8% chorioretinal degeneration 6.8% glaucoma 6.6%	AFG - 2
Bahrain (EMR)	0.40	1972	E	?	Whole country.	5 400	2.0	Cataract trauma glaucoma corneal lesions and infections.	BAA - 1
Bangladesh (SEAR)	94.65	1974	S	5	Rural areas 114 624 examined.	1 085	0.9	<u>In adults:</u> cataract 32.7% glaucoma 16.3% corneal infections 14.7% trauma 10.2%. <u>In children:</u> corneal infection 30.4% trauma 26.7%.	BAN - 1
		1976	E		Whole country.	150 000- 200 000	0.2-0.3	Xerophthalmia 15% cataract 14% glaucoma 6% infections and trauma 18% uveitis 4%.	BAN - 2
		1976	S		20 523 children up to 6 years of age.	25	0.1		BAN - 2
		1977	E		Whole country.	1 000 000	1.2	Xerophthalmia cataract infections glaucoma.	BAN - 3
		1980	E	3	Whole country.	1 600 000 2 000 000	2.0		BAN - 4
		1981	S	3	Rural areas 183 001 examined.	1 021	0.6	Corneal opacity 43% cataract 46% glaucoma and retinal diseases 9.8%.	BAN - 5
Burma (SEAR)	37.55	1975	S	5	Rural areas 17 392 examined (central Burma).	354	2.0		BUR - 1
		1975	S		Rural areas 6063 examined. Trachoma endemic (88%).		1.8	Corneal scarring.	BUR - 2
		1982	S+R		Central Burma 817 716 examined.	9 948	1.2	Cataract glaucoma trauma corneal scarring.	BUR - 3

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1	2	3	4	5	6	7	8	9	10
China (WPR)	1039.7	1982	S	6	50 621 examined (Fujian Province).		0.2	Cataract 34.7% glaucoma 6.4% phthisis bulbi 11.3% keratomalacia 7.5%.	CHN - 1
		1982	S	6	21 869 examined (Sichuan Province).		0.3	Cataract 40.5% corneal disease 12.2% trachoma 14.9%.	CHN - 1
		1983	S	6	94 222 examined (Hunan Province).		0.3	Cataract 19.7% trachoma 20.7%.	CHN - 1
		1983	S	6	13 852 examined (Anhui Province).		0.7	Cataract 35.8% corneal disease 20% trachoma 8.9%.	CHN - 1
		1983	S	6	74 348 examined (Tianjin City).		0.3	Cataract 39.3% corneal disease 9.3% trachoma 9.2% glaucoma 7%.	CHN - 1
		1984	S	6	101 803 examined (Guangdong Province).		0.4	Cataract 57.1% corneal disease 12.3% trachoma 4.1% glaucoma 6.8%.	CHN - 1
		1984	S	6	26 210 examined (Guangxi Province).		0.5	Cataract 37% corneal disease 16% phthisis bulbi 17.4%.	CHN - 1
		1984	S	6	40 097 examined (Heilongjiang Province).		0.2	Cataract 39% trachoma 12% glaucoma 22%.	CHN - 1
		1984	S	6	10 063 examined (Huairou County; Beijing suburb).		0.5	Cataract 16.3% corneal disease 29.6% trachoma 26.5% glaucoma 10.2%.	CHN - 1
Cyprus (EMR)	0.65	1972	S		School for the blind.	112		Hereditary 79% postnatal 15% prenatal 4% perinatal 2%.	CYP - 1
Democratic Yemen (EMR)	2.16	1975	S		3042, rural areas.	108	3.6	Cataract 40.9% trachoma 17.4% glaucoma 14.7% corneal disorders 12% phthisis bulbi 8% amblyopia 4% uveitis 1.3% retinal detachment 0.7%.	YEA - 1
Hong Kong	5.31	1975	R		Whole country.	7 001	0.2	Cataract 34.3% glaucoma 18.3% corneal leucoma (trachoma) 10.3% retinal disorders 8.9% myopia 8% phthisis bulbi 7.9% optic atrophy 6% uveitis 4.5%.	HOK - 1
		1977	R	5	Whole country.	7 318	0.2		HOK - 1

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1	2	3	4	5	6	7	8	9	10
India (SEAR)	732.26	1974	S	5	74 620 examined (Allahabad).	1 548	2.1	In children up to 15 years: infections 43.9% malnutrition 27.2% trauma 16.4% congenital disorders 4.3% hereditary conditions 4.3% neoplasms 3%.	IND - 1
		1976	S		Orissa: (a) rural population; (b) urban population.		3.6 2.2		IND - 2
		1976	S	6	Uttar Pradesh 20 134 examined. Rural area.	71	0.4	Cataract 32.4% glaucoma 25.4% smallpox 18.3% trachoma 8.5% other infectious diseases 7.1%.	IND - 3
		1975-78	S	8	Rural area, eye camp (Miraj).	2 468		Cataract 58.2% glaucoma 13% corneal lesions 12.2% retinopathies 5.5%.	IND - 4
		1981	S	6	Whole country.	3 470 000	0.5	Trachoma 20% cataract 55% malnutrition 2% injuries 1.2% glaucoma 0.5%.	IND - 5
Indonesia (SEAR)	159.43	1982	S	6	Whole country.		1.2	Corneal diseases 15.4% cataract 66.9% glaucoma 9.7% retinal disease 2.3% refractive blind 4% nutritional blindness 1.7%.	INO - 1
Iran, Islamique Republic of (EMR)	41.64	1976	E		Trachoma endemic areas.		4.5		IRA - 1
Japan (WPR)	119.26	1975	E		Whole country.	256 700	0.2	Microphthalmos 16.4% cataract 14.7% optic atrophy 11.6% myopia 8.4% retinitis pigmentosa 8.1% buphthalmos 7.1%.	JPN - 1
							7 200	0.02	
		1976	R	8	Whole country.	256 455	0.2		JPN - 2
		1980	S	8	Whole country.	335 760	0.3	Corneal lesions 23.2% lens disorders 23% chorioretinal affections 35.8% others 18%.	JPN - 3
	1980	R	8	Blind population rural (Toyama) urban (Chiba)	8 113	-	Congenital disorders 66.9% infections 1.7% trauma 2.9% intoxications 10.7% tumours 3.8% systemic diseases 4.3%.		

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1	2	3	4	5	6	7	8	9	10
Lebanon (EMR)	2.64	1970	E		Whole country.	5 000	0.2		LEB - 1
		1970-73	S	8	Schools for the blind.	203		Tapetoretinal degeneration 26.1% congenital glaucoma 17.7% congenital cataract 16.8% trauma 9.8% microphthalmia 6.4% keratitis 3.9% optic atrophy 3.9% uveitis 3.9%.	LEB - 2
Malaysia (WPR)	14.86	1971	E		Whole country.	22 300	0.2		MAA - 1
Maldives (SEAR)	0.17	1970	R		Whole country.	128	0.1		MAV - 1
Nepal (SEAR)	15.74	1980	S	6	Whole country. 39 887 examined.	335	0.8	Cataract 66.8% iatrogenic sequelae 5.3% retinal disease 3.3% glaucoma 3.2% trachoma 2.4% nutritional 0.9%.	NEP - 1
Oman (EMR)	1.13	1976	E+S		Whole country. 2340 examined.	82	3.4	Trachoma 70%.	OMA - 1
Pakistan (EMR)	89.73	1970	E	3	Whole country.	1 500 000	2.0	Corneal infections glaucoma cataract retinal lesions.	PAK - 1
		1976	E	?	Whole country, trachoma endemic rural areas.		4.3		PAK - 2
		1981	E	3, 6	Whole country.	1 447 400 2 894 800	2.4	Cataract 60% trachoma, infections and corneal scarring 25% malnutrition 5% glaucoma 2% others 8%.	PAK - 3
		1981	S	?	Lahore area.		2.3		PAK - 3
Philippines (WPR)	51.96	1970	E	5	Whole country.	780 000	2.1	Cataract trauma glaucoma corneal scarring retinal and optic nerve disease uveal disease.	PHL - 1
		1983	S	5	(Barangay) 2371 examined. Urban area.	13	0.8		PHL - 2
		1983	S	5	(Tambunting) 1309 examined. Urban area.	6	0.5		PHL - 3
Qatar (EMR)	0.28	1971	S	10	Hospital cases.	3 272		Trachoma 41.2% other infectious diseases 5.4% trauma 16.2% retinal disease 10.5% congenital mal- formations 2.4% cataract glaucoma.	QAT - 1

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1	2	3	4	5	6	7	8	9	10
Republic of Korea (WPR)	39.95	1974	R+E	6	Hospital case.		0.2-0.3	Corneal scarring cataract 36.1% refractive errors 8.2% glaucoma 7.9% retinal disorders 13.2% optic atrophy 9.3% nerve atrophy 13%.	KOR - 1
		1980	S	6	Whole country (20 000).		0.1		KOR - 2
Saudi Arabia (EMR)	10.42	1979	E		Whole country.	140 000	2.0	Trachoma eye infections corneal ulcers cataract glaucoma refractive errors trauma.	SAA - 1
		1984	S		Whole country. 16 810 examined.		1.5	Corneal 9.1% trachoma 10.1% glaucoma 3% cataract 55.1% refractive errors 9% iatrogenic complications 4.5%.	SAA - 2
Singapore (WPR)	2.50	1972	R	8	Whole country.	1 442	0.06	Retinal disorders 22% glaucoma 20% optic atrophy 20% corneal disorders 12.3%.	SIN - 1
Socialist Republic of Viet Nam (WPR)	57.18	1973	S	3	Rural areas 5 villages.	439	0.7	Trachoma 25% cataract 23% glaucoma 11% disease of the fundus 6% trauma 4% uveitis 4%.	VTN - 1
		1981	S	10	Whole country.	372 160	0.8	Cataract 39.4% trachoma 14.1% fundus pathology 8.9% glaucoma 6.3% pterygium 5.4% trauma 3.6%.	VTN - 2
Sri Lanka (SEAR)	15.42	1975	E	7	Whole country.	13 800	0.1	Cataract 45.8% corneal disorders 30% glaucoma 7.7% trauma 6.7%.	SRL - 1
		1981	E+S	7	Whole country.	274 600	2.0	Cataract 46%.	SRL - 2
		1982	S	6	Whole country. 116 827 examined.	401	0.3	Corneal opacities 4.2% phthisis bulbi 15% cataract 65.2% refractive errors 6.7% glaucoma 3.5% optic atrophy 3%.	SRL - 3
Syrian Arab Republic (EMR)	9.61	1973	S	1	49 500, trachoma endemic area.	152	0.3	Cataract 34.9% infections 27.1% glaucoma 19.7%.	SYR - 1

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1	2	3	4	5	6	7	8	9	10
Thailand (SEAR)	49.46	1977	R	7	Whole country.	50 470	0.1		THA - 1
		1982	R	6	Hospital cases. Rural area.	679		Corneal disorders 6.9% cataract 4.2% glaucoma 36.6% optic nerve disorder 7.2% undetermined 26.3%.	THA - 2
		1983	S	6	Whole country. 19 265 examined.		1.1	Corneal diseases 3.2% cataract 56.6% refractive errors 4.2% glaucoma 2.2% optic atrophy 2% undetermined 25.5%.	THA - 3
<u>EUROPE</u>									
Bulgaria (EUR)	8.94	1970	S	4	Whole country.	3 312	0.01	Hereditary conditions 27% inflammatory diseases 18% glaucoma 16.3%.	BUL - 1
Denmark (EUR)	5.11	1970	R	8	Whole country.	9 350	0.2		DEN - 1
Finland (EUR)	4.86	1970	E		Whole country.		0.8	Trauma inflammatory diseases tapetoretinal degeneration glaucoma.	FIN - 1
France (EUR)	54.65	1985	S	6	Bouches du Rhône 69 354 persons.	133	0.2	Eye diseases 12% general diseases 17% accidents 15% congenital disorders 17% others 3% unknown 7%.	FRA - 1
Germany, Federal Republic of (EUR)	61.42	1971	S	2	Frankfurt/M. hospital cases.	731		Glaucoma 15.1% optic atrophy 10.3% trauma 9.9% diabetic retinopathy 9.2% corneal diseases 7.3% congenital disorders 7% myopia 6.6% uveitis 6.6% tapetoretinal degeneration 5.9% retinal detachment 5.5% optic nerve diseases 4.8% cataract 4% macular degeneration 3.7%.	DEU - 1
		1977	R	3	Whole country.	65 000	0.1		DEU - 2
Hungary (EUR)	10.69	1973	E		Whole country.	25 000	0.2		HUN - 1
Iceland (EUR)	0.24	1978	S	8	118 132, children under 15 years.	43	0.04	Optic nerve atrophy, cataract.	ICE - 1

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1	2	3	4	5	6	7	8	9	10
Italy (EUR)	56.6	1980	S	6		170 000	0.4		ITA - 1
Malta (EUR)	0.38	1973	R	Whole country.		565	0.2	Myopia 19.4% cataract 18.7% glaucoma 17.7% diabetes 14.9% trachoma 12.9% optic atrophy 7.5% uveitis 2.1% trauma 1.8%.	MAT - 1
Norway (EUR)	4.13	1972	S	8 Hedmark province.		288	0.2	Glaucoma 33% tapetoretinal degeneration 14.2% optic nerve disease 8.3% cataract 6.9% retinal diseases 6.9%.	NOR - 1
Poland (EUR)	36.57	1975-1976	S	School for the blind, Owinsk.		138		Cataract 28.3% optic atrophy 12.3% nyopia 11% tapetoretinal degeneration 9.4% congenital anomaly 7.2% amblyopia 6.5% fibroplasia retrolentaria 5.1% hydrophthalmia 4.3% corneal degeneration 3.6%.	POL - 1
Sweden (EUR)	8.33	1972	S	9 Visually handicapped children.		515		Frenatal influence 36% general diseases 21% accidents 12% infectious diseases 9%.	SWE - 1
		1977	R	9 Whole country.		27 650	0.3	Frenatal influence 58% accidents 18% infections 12 % general diseases 5%.	SWE - 2
United Kingdom of Great Britain and Northern Ireland (EUR)	55.61	1979	R	6 Whole country.		105 270	0.18		UNK - 1
<u>OCEANIA</u>									
Australia (WPR)	15.37	1977	S	12 500 aborigines, (central Australia).		220	0.8	Cataract 50% trauma 25% keratopathy 11% trachoma 7%.	AUS - 1
		1978	E	8 Whole country.		28 000	0.2		AUS - 2
		1980	S	8 5134 aborigines, (central and western Australia).		73	1.4	Cataract corneal diseases trachoma trauma.	AUS - 3
Cook Islands (WPR)	0.02	1981	E	Whole country.		100	0.5	Cataract.	COK - 1

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1	2	3	4	5	6	7	8	9	10
Fiji (WPR)		1978	R		Whole country, blind register.	425		Trachoma 19.7% glaucoma 14.6% corneal opacities 13.4% trauma 8.8% congenital disorders 8.4% optic atrophy 7.9% retinal diseases 6.2% diabetic retinopathy 4.3% cataract 3.3% uveitis 2.2%.	FIJ - 1
		1982	R	5	Whole country,	254		Trachoma 7.5% corneal opacities 7.9% cataract 5.7% glaucoma 20% optic atrophy 14.6% retinal diseases 8.7% congenital diseases 14.2% diabetic retinopathy 6.7% injuries 6.7%.	FIJ - 2
French Polynesia	0.14								FRP - 1
- Tahiti & Windward Islands		1970	R		70 000.	96	0.01		
- New Caledonia			R		110 000.	30	0.03		NEC - 1
Kiribati (WPR)	0.058	1981	E		Whole country.	200	0.3	Cataract trachoma.	KIR - 1
		1981	E		Whole country.	350	0.5	Cataract trachoma trauma.	KIR - 2
New Zealand (WPR)	3.20	1973	R	8	Whole country.	4 457	0.14	Macular degeneration cataract glaucoma.	NEZ - 1
Papua New Guinea (WPR)	3.2	1975	E	1	Whole country.	12 500	0.4		PNG - 1
		1979	S	6	3029 examined.	15	0.5		PNG - 2
Solomon Islands (WPR)	0.20	1981	E	6	Whole country.	1 000	0.5	Cataract trachoma trauma.	SOL - 1
Tonga (WPR)	0.09	1981	E		Whole country.	385	0.4	Cataract.	TON - 1
Vanuatu (WPR)	0.111	1981	E	6	Whole country.	390	0.35	Cataract trachoma.	VAN - 1

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1	2	3	4	5	6	7	8	9	10
<u>UNION OF SOVIET SOCIALIST REPUBLICS (EUR)</u>	272.50	1973	R	13	Whole country.		0.12	Trauma myopia glaucoma congenital diseases.	SSR - 1
		1974	S	12	Krasnojarsky region. Urban population, Rural population,		0.19 0.36	Cataract 0.16% corneal diseases 0.04% glaucoma 0.03% optic atrophy 0.03% retinal diseases 0.02% congenital disorders 0.02%.	SSR - 2
		1977	C		Byelorussian SSR, 9.04m. Urban and rural populations.	11 130	0.12	Trauma 39.4% eye diseases 22.9% (mainly eye infections) genetic and congenital conditions 10.3%.	SSR - 3
