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BLINDNESS PREVENTION

The prevalence of blindness and visual impairment is alarmingly high. In 2010 in the Western Pacific Region, 90 million people were visually impaired and more than 10 million were blind. Studies show that 80% of visual impairment and blindness among adults can be treated or prevented. Despite this, blindness remains a public health problem that requires a stronger response from the health sector and the rest of society.

Several World Health Assembly resolutions highlight the importance of consolidating efforts to eliminate avoidable blindness. In 2009, resolution WHA62.1 endorsed the *Action plan for the prevention of avoidable blindness and visual impairment 2009–2013*. At its 130th session in 2012, the Executive Board adopted decision EB130(1) calling for a new action plan. Recently, *Universal Eye Health: A Global Action Plan 2014–2019* was endorsed by the World Health Assembly in May 2013.

To support the global plan, the draft *Towards Universal Eye Health: A Regional Action Plan for the Western Pacific (2014–2019)* (see Annex) is presented for endorsement to provide a regional context for WHO support to address specific needs in Asia and the Pacific.

1. CURRENT SITUATION

The prevalence of blindness and visual impairment is alarmingly high. WHO estimated in 2010 that 285 million people were visually impaired, including 39 million blind people. Nine out of 10 visually impaired people in the world live in developing countries. Also in 2010 the Western Pacific was estimated to have 90 million visually impaired people, including more than 10 million blind people.

Visual impairment and blindness may cause dependency on others and are debilitating to individuals and their families. Educational opportunities, gainful employment and productivity are severely compromised by the loss of sight or poor vision. Blindness and visual impairment impact economic growth and development in countries. The global economic loss from visual impairment was estimated to be US$ 42 billion per year in 2000. The loss is expected to rise to US$ 110 billion by 2020.

Generating data and good surveillance in low- and middle-income countries have been a challenge. While up to 80% of blindness and visual impairment can be treated or prevented, many policy-makers are not aware of the benefits and cost-effectiveness of simple interventions. Efforts to address blindness and visual impairment are often fragmented. Linkages should be strengthened between prevention efforts in the community and referral systems.

Several World Health Assembly resolutions highlight the importance of consolidating efforts to eliminate avoidable blindness as a public health problem. In 2009, resolution WHA62.1 endorsed the *Action plan for the prevention of avoidable blindness and visual impairment 2009–2013*. At its 130th session in 2012, the Executive Board adopted decision EB130(1) calling for a new action plan for the prevention of avoidable blindness and visual impairment. *Universal Eye Health: A Global Action Plan 2014–2019* was endorsed by the World Health Assembly in May 2013.

To support the global plan, a draft *Towards Universal Eye Health: A Regional Action Plan for the Western Pacific (2014–2019)* (see Annex) was developed in 2013. The action plan will provide a regional context for WHO support to help address specific needs in Asia and the Pacific. The draft plan provides a menu of actions for Member States and WHO that can be prioritized and adapted in consultation with Member States to accommodate different contexts and settings in the Region.

2. ISSUES

To support the work of Member States, the draft *Towards Universal Eye Health: A Regional Action Plan for the Western Pacific (2014–2019)* was developed with emphasis on the following important principles:

2.1 Positioning blindness and visual impairment prevention higher in the public health agenda.

This is a key issue and challenge for Member States as stronger advocacy efforts are needed to convince decision-makers to invest in prevention measures that can be integrated into national health plans. In order to explain the benefits of an enhanced response to blindness and visual impairment, additional efforts are needed to determine the magnitude of the problem in each country. Generation of data on blindness and visual impairment needs to be integrated into health information systems.

The social and economic benefits of prevention need to be more clearly articulated to decision-makers. For example, cataract surgery is highly effective, resulting in almost immediate visual rehabilitation. Interventions to treat refractive error are also highly cost effective. Spectacles, more commonly referred to as eyeglasses, are the simplest and safest way to correct refractive error. Today, quality spectacles can be purchased for less than US$ 5 in most countries.

2.2 Development of cost-effective, integrated and comprehensive interventions for prevention and management of blindness and visual impairment.

In many contexts and settings, the elimination of avoidable blindness can be achieved by improving overall health systems, particularly in relation to maternal and child care programmes (for example, prevention of premature births, provision of quality early newborn care, immunization against rubella and vitamin A supplementation or fortification). Enhanced efforts to prevent and control diabetes can spare hundreds of thousands of people from visual impairment from diabetic retinopathy, particularly in Pacific island countries and areas. Safe water and improved hygiene and sanitation are key interventions to address infections that result in blinding trachoma, which is still a public health problem in 11 countries in Asia and the Pacific. Programmes to prevent and manage hypertension, including tobacco control and smoking cessation, can also slow the degenerative processes that lead to retinopathy.

2.3 Strengthened health systems approach to blindness and visual impairment prevention with an emphasis on primary and secondary care.

Community and village health workers can play an important role in the delivery of eye health care at the primary level, particularly in islands and low-resource settings. Health campaigns and awareness-raising in the community need to be complemented by improved capacity within health systems for early detection and referral, as well as treatment and management. District level eye-care services should be strengthened. Well-trained, mid-level personnel are important to achieve high numbers of successful cataract surgeries at the secondary and tertiary level of health services. Refractive and optical services need to be integrated within national health systems, including sustained training of personnel. Sustainable supplies of locally affordable spectacles are also needed.

2.4 Enhanced monitoring, evaluation and reporting.

National policies and subnational action plans are best integrated into overall national health and development plans. Ministries of health play a lead role in implementation as well as strategic direction to enhance progress that will be monitored and evaluated periodically. Toward this end, important indicators recommended at the global and regional levels may also be appropriate at the national level. These include: the prevalence and causes of visual impairment; the number of eye-care personnel; and cataract surgery rate and coverage. The first indicator relates to a global target: the reduction in prevalence of avoidable visual impairment by 25% by 2019 (from the 2010 baseline).

2.5 Expansion of partnerships and networking with stakeholders.

Engagement with sectors outside of health will help address causes related to poverty and social determinants of health. Education is critical in addressing blindness and visual impairment as a public health problem. School systems provide a platform for advocacy of early detection and management of visual impairment risks to children, families and communities. Educational campaigns also highlight the need for services for older people and other healthy ageing initiatives.

3. ACTIONS PROPOSED

The Regional Committee is requested to review and consider for endorsement the draft *Towards Universal Eye Health: A Regional Action Plan for the Western Pacific (2014–2019).*

ANNEX

Draft plan
Towards Universal Eye Health: Regional Action Plan for the Western Pacific (2014–2019)

WHO Regional Office for the Western Pacific
Manila, Philippines

World Health Organization
Western Pacific Region

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1. Why the prevention and treatment of visual impairment matters

The ability to see is taken for granted. But for many people, poor vision or blindness is a reality that is debilitating to themselves and their families. Individuals affected by the loss of vision are likely to require support within their household and within their community. Educational opportunities, gainful employment and productivity are severely compromised by poor vision or blindness. These problems are more pronounced among the poor, who do not have access to basic eye-care or rehabilitation services.

The lack of universal access to eye-care services has varying causes across the Western Pacific Region. Some countries lack the capacity to provide specialized health services and might have a shortage of trained eye-care personnel. As a result, eye-care services might only be available in urban centres, out of reach for many people who cannot travel far distances. Other countries might have adequate numbers of trained eye-care personnel and the required infrastructure to provide comprehensive service, but these eye- care services might be privatized and unaffordable to the poor, who are most in need.

Consequently, approaches to improve the provision of quality eye-care services will differ among countries and even within countries. Some priority interventions, however, are relevant to most countries in the Region, especially low- and middle-income countries, including treatment for cataracts and refractive error. Eyeglasses and contact lenses are typically used to correct refractive error.

Globally, three quarters of visual impairment is caused by uncorrected refractive error (42%) and cataracts (33%). Cataract surgery and the provision of appropriate eyeglasses are among the most cost-effective health interventions and can bring immediate sight restoration.

Vision loss from diabetes represents a growing challenge in the Region and diabetic retinopathy ranks among the leading causes of vision impairment in Pacific islands countries and areas. Advocacy is required to improve screening methods and preventative approaches.

Trachoma is the most common infectious cause of blindness. Although progress has been made towards elimination of the disease in some Asian countries, data from some Pacific islands countries and areas suggest the disease continues to be a public health problem.

Vitamin A deficiency (VAD) is a public health problem in many low-income countries in the region, especially in Pacific island countries and areas, hitting hardest young children and pregnant women. VAD is the leading cause of preventable blindness in children, yet uptake of highly cost-effective vitamin A supplementation is often minimal.

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An issue commonly neglected in the Region is the lack of support to people with irreversible visual impairment. Few low-vision and rehabilitation services are available, especially in low- and middle-income countries. Where services exist, low awareness among patients and service providers commonly leads to underutilization and a poor continuum of care.

The economic burden of visual impairment is substantial. In 2000, it was estimated that the global economic loss from visual impairment was US$ 42 billion per year, and the loss is expected to rise to US$ 110 billion by 2020.

With cost-effective strategies available in the Region to reduce the main burden of unnecessary visual impairment, eye health requires the promotion of social and economic development, human rights and equity. Efforts to improve eye health should be integrated within general approaches for health systems strengthening to ensure cross-cutting benefits beyond a single disease focus, especially in low-income countries.

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2. Towards Universal Eye Health: Regional Action Plan for the Western Pacific (2014–2019)

2.1 Overview

In line with *Towards Universal Eye Health: A Global Action Plan 2014–2019*, which was endorsed by the Sixty-sixth session of the World Health Assembly in May 2013, the vision of the draft regional action plan, *Towards Universal Eye Health: A Regional Action Plan for the Western Pacific 2014–2019*, is a world in which no one is needlessly visually impaired, those with unavoidable vision loss can achieve their full potential and there is universal coverage of comprehensive eye-care services.

The draft regional action plan aims to sustain and expand efforts by Member States, the WHO Secretariat and international partners to further improve eye health and to work towards attaining the vision outlined in the plan. The goal of the regional action plan is to reduce avoidable visual impairment as a global public health problem and to secure access to low-vision and rehabilitation services for the visually impaired.[1] The purpose of the regional action plan is to achieve this goal by improving access to comprehensive eye-care services that are integrated into health systems. Further details are provided in Appendix 1. Five principles and approaches underpin the plan: universal coverage and equity, human rights, evidence-based practice, a life-course approach, and empowerment of people with visual impairment.

Proposed actions for Member States, international partners and the WHO Secretariat are structured around three objectives:

Objective 1 addresses the need for generating evidence on the magnitude and causes of visual impairment and on eye-care services and using the evidence to advocate greater political and financial commitment to eye health by Member States.

Objective 2 encourages the development and implementation of integrated national eye health policies, plans and programmes to enhance universal eye health with activities in line with the

[1] Visual impairment includes moderate and severe visual impairment as well as blindness. "Blindness" is defined as a presenting visual acuity of worse than 3/60 or a corresponding visual field loss to less than 10 degrees in the better eye. "Severe visual impairment" is defined as a presenting visual acuity of worse than 6/60 and equal to or better than 3/60. "Moderate visual impairment" is defined as a presenting visual acuity in the range from worse than 6/18 to 6/60 (WHO. Definitions of blindness and visual impairment. Geneva, World Health Organization, 2012. http://www.who.int/blindness/Change%20the%20Definition%20of%20Blindness.pdf, accessed 12 March 2013) The regional action plan uses the term visual impairment.

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WHO framework for action, *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes*.[2]

Objective 3 addresses multisectoral engagement and effective partnerships to strengthen eye health.

Each of the three objectives has a set of metrics to gauge progress. There are three indicators at the goal and purpose levels to measure progress at the national level, although many Member States may wish to collect data for additional indicators. The three indicators comprise: (i) the prevalence and causes of visual impairment; (ii) the number of eye-care personnel per population; and (iii) cataract surgery rates and cataract coverage. Further details are provided in Appendix 1.

- *Prevalence and causes of visual impairment.* It is important to understand the magnitude and causes of visual impairment and trends over time. This information is crucial for resource allocation, planning and developing synergies with other programmes.

- *Number of eye-care personnel, broken down by cadre.* This parameter is important in determining the availability of the eye health workforce. Gaps can be identified and human resource plans adjusted accordingly.

- *Cataract surgery rate* (number of cataract surgeries performed per year per million population) and *cataract coverage* (number of individuals with bilateral cataracts causing visual impairment, who have received cataract surgery in one or both eyes). Knowledge of the surgery rate is important for monitoring surgical services for one of the leading causes of blindness globally. In addition, the rate also provides a valuable proxy indicator for eye-care service provision. Where Member States have data on the prevalence and causes of visual impairment, coverage for cataract surgery can be calculated; it is an important measure that provides information on the degree to which cataract surgical services are meeting needs.

For the first of these indicators there is a global target. It will provide an overall measure of the impact of the regional action plan. As a global target, the reduction in the prevalence of avoidable visual impairment by 25% by 2019 from the global baseline of 2010 has been selected for the global action plan.[3] In meeting this target, the expectation is that the greatest gains will come through the reduction in the prevalence of avoidable visual impairment in the population over the age of 50 years. As described above, cataract and uncorrected refractive errors are the two principal causes of avoidable visual impairment,

[2] *Everybody's business: strengthening health systems to improve health outcomes: WHO's framework for action*. World Health Organization. Geneva, 2007. http://www.who.int/healthsystems/strategy/everybodys_business.pdf (accessed 12 March 2013).

[3] The global prevalence of avoidable visual impairment in 2010 was 3.18%. A 25% reduction means that the prevalence by 2019 would be 2.37%.

representing 75% of all visual impairment, and are more frequent among older age groups. By 2019, it is estimated 84% of all visual impairment will be among those aged 50 years or more.

Expanding comprehensive integrated eye-care services that respond to the major causes of visual impairment—along with the health improvement that can be expected from implementing wider development initiatives, including strategies such as the draft global *Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020*, as well as global efforts to eliminate trachoma—suggest that the target, while ambitious, is achievable. In addition there will be wider health gains that will have the effect of reducing visual impairment that will come from the expected increase in the gross domestic product in low- and middle-income countries.[4]

2.2 Vision, goal and purpose

Vision

A Region in which no one is needlessly visually impaired, those with unavoidable vision loss can achieve their full potential and there is universal access to comprehensive eye-care services.

Goal

All Member States to achieve the target of a 25% reduction in the prevalence of avoidable visual impairment by 2019 from a baseline of 2010.

Purpose

To improve access to comprehensive eye-care services that are integrated into health systems.

2.3 Cross-cutting principles and approaches

Universal access and equity

All people should have equitable access to health care and opportunities to achieve or recover the highest attainable standard of health, regardless of age, gender, race, geography or social position.

[4] According to the International Monetary Fund, by 2019 the average gross domestic product per capita based on purchasing power parity will grow by 24% in low- and lower-middle-income countries, by 22% in upper-middle-income countries and by 14% in high-income countries (http://www.imf.org/external/pubs/ft/weo/2012/02/weodata/index.aspx; accessed 12 March 2013).

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Human rights

Strategies and interventions for the treatment of eye diseases and the prevention and promotion of eye health must be compliant with international human rights conventions and agreements.

Evidence-based practice

Strategies and interventions for the treatment of eye disease and the prevention and promotion of eye health need to be based on scientific evidence and good practice.

Life-course approach

Eye health and related policies, plans and programmes need to take account of health and social needs at all stages of the life-course.

Empowerment of people with blindness and visual impairment

People who are blind or who have low vision are empowered to be able to fully participate in the social, economic, political and cultural aspects of life.

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3. Objectives

3.1 Objective 1

Evidence generated and used to advocate for increased political and financial commitment of Member States for eye health.

Actions for Member States

1. Undertake population-based surveys on the prevalence of visual impairment and its causes in collaboration with partners to support planning of national eye-care programmes. Where possible, integrate eye health within wider health surveys. Allocate resources as required.

2. Develop institutional capacity to plan and carry out population-based surveys, including for eye care.

3. Assess the country capacity to provide comprehensive eye-care services at all levels, inclusive of low-vision and rehabilitation services, and identify gaps.

4. Allocate resources as required to conduct assessments.

5. Raise community awareness of prevention strategies (e.g. face and hand washing, proper nutrition, avoiding diabetes) and treatment strategies (e.g. cataract services) for visual impairment by integrating eye health promotion messages into national and local health promotion activities.

Actions for WHO

1. Provide technical advice on the planning and implementation of surveys.

2. Provide technical advice on translating survey outcomes to inform national eye-care programmes.

3. Provide technical advice on the planning and implementation of country capacity assessments.

4. Provide technical advice on translating assessment outcomes to inform national eye-care programmes.

5. Provide Member States with WHO recommendations for delivery models, human resources, infrastructure, management, and the safety and quality of eye-care services.

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6. Provide technical support to Member States in developing relevant eye health promotion campaign messages and strategies.

7. Integrate eye health within existing WHO health promotion programmes implemented in various settings.

8. Provide opportunities to share experience and good practice.

Actions for international partners

1. Advocate on the need for surveys.

2. Identify and supply additional resources to complement government investments for surveys.

3. Support Member States in collection and dissemination of survey data.

4. Identify and supply additional resources to complement government investments in eye-care service assessments.

5. Advocate across sectors on the value of eye health promotion.

6. Strengthen the integration of eye health promotion activities within existing community programmes.

7. Provide financial and technical capacity to develop and implement eye health promotion activities.

3.2 Objective 2

National policies, plans and programmes for enhancing universal eye health developed and/or strengthened and implemented in line with the WHO framework for action, *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes*.

Actions for Member States

1. Develop/update, implement and monitor national and subnational policies, plans and programmes for eye health, low vision and rehabilitation, including indicators and targets, engaging key stakeholders.

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2. Integrate national and subnational eye health plans within national health plans to ensure that investment decisions for eye health are based on the burden of disease and cost-effectiveness of interventions.

3. Establish new and/or maintain existing coordinating mechanisms (e.g. national coordinator, eye health/prevention of blindness committee, other national/subnational mechanisms).

4. Undertake planning of human resources for eye care as part of wider human resources for health planning.

5. Provide standardized training and career development for eye health professionals within the health system, including capacity-building for refractive and optical service providers and low-vision and rehabilitation service providers.

6. Recognize and strengthen the role of community health workers in the delivery of eye care at the primary level.

7. Recognize and strengthen the role of mid-level eye-care personnel in the delivery of eye care at the secondary and tertiary levels.

8. Develop/strengthen appropriate integration of primary eye care within the primary health system.

9. Develop/strengthen district-level eye-care services and infrastructure supported by mid-level eye-care personnel.

10. Assess and monitor cataract surgical services and refractive services, including their availability, accessibility and quality.

11. Develop/strengthen national diabetes/noncommunicable disease (NCD) programmes and integrate systems to prevent visual loss due to diabetic retinopathy through periodic screening, timely referrals and appropriate treatment.

12. In suspected endemic countries, continue to assess the distribution and severity of trachoma and, where required, develop trachoma action plans.

13. In areas with suspected VAD, carry out assessments and inform short- and long-term interventions, including breastfeeding, supplementation, promotion of diets rich in vitamin A and food fortification.

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14. Ensure national lists of essential medical products, national diagnostics and treatment protocols, and relevant equipment, exists and are accessible and those for eye care are included.

15. Adopt a routine set of eye-care indicators and targets within national health information systems.

16. Support the financial coverage of essential eye-care, low-vision and rehabilitation services within national health financing approaches for universal health coverage.

Actions for WHO

1. Provide technical assistance for planning, implementing, monitoring and evaluating optimal eye-care services provision at all levels of the health system, with a focus on the primary level.

2. Provide technical assistance as required to develop national workforce targets and define roles and responsibilities of eye health professionals at every level of the health system.

3. Provide training on tools for cataract surgical outcomes monitoring, as required.

4. Promote successful models to integrate accessible and affordable refractive and optical service within national health systems.

5. Advocate for guidelines to encourage regular eye check-ups for people with diabetes.

6. Support the development of appropriate models and guidelines for eye screening of people with diabetes.

7. Support the implementation of the *Regional Action Plan for Neglected Tropical Diseases in the Western Pacific (2012–2016).*

8. Advocate the link of childhood blindness and VAD, where appropriate.

9. Provide technical assistance to identify essential medicines, diagnostics and technologies for eye care to be included in national lists.

10. Provide technical support to define appropriate eye-care indicators and country-specific targets.

11. Collate and disseminate eye-care indicator data annually.

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Actions for international partners

1. Advocate national/subnational leadership for developing policies, plans and programmes.

2. Support national leadership in identifying financial and technical resources required for implementing the policies/plans.

3. Advocate for the importance of comprehensive and equitable eye-care services in relation to overall burden of disease in countries.

4. Support the provision of eye-care services, including rehabilitation services in line with national policies and plans through national coordination mechanisms.

5. Provide financial and technical support towards national assessments, training and equipment for agreed essential eye-care services.

6. Advocate the importance of a sustainable eye health workforce and support training and professional development through national coordination mechanisms.

7. Support the provision of essential medicines, diagnostics and health technologies for eye care in line with national policies.

8. Advocate on the importance of monitoring eye-care services using nationally agreed indicators and provide financial and technical support for data collection and dissemination.

9. Advocate for the importance of eye-care services coverage by insurance schemes.

3.3 Objective 3

Multisectoral engagement and effective partnerships for improved eye health strengthened.

Actions for Member States

1. Health ministries identify and engage non-health sectors, such as those under ministries of education (e.g. for training of eye-care personnel, school screening), finance, and welfare (e.g. for access to eye-care services for people with disabilities) in developing and implementing eye health policies and plans.

2. Promote, develop and enhance effective and coordinated partnerships for eye health.

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3. Ensure that people with avoidable and unavoidable visual impairment have access to educational opportunities, and that disability inclusion practices are developed, implemented and evaluated.

4. Facilitate and support intercountry collaboration and bilateral training partnerships.

5. Facilitate and support regional collaboration on evidence generation and implementation of national policies, plans and programmes for eye health.

Actions for WHO

1. Participate in and lead partnerships and alliances, including engaging other United Nations entities, that support, harmonize and are aligned with Member States' priorities.

2. Facilitate and support intercountry and regional collaboration.

Actions for international partners

1. Advocate across sectors on the added value of multisectoral work and the need for inclusive national coordinating mechanisms for eye health.

2. Provide financial and technical capacity to multisectoral activities (e.g. water and sanitation).

3. Support Member States in collecting and disseminating experiences on successfully engaging non-health sectors.

4. Strengthen partnerships with regional and international organizations to contribute to work on eye health.

APPENDIX 1: NATIONAL INDICATORS FOR PREVENTION OF AVOIDABLE BLINDNESS AND VISUAL IMPAIRMENT

1. Prevalence and causes of visual impairment

Purpose/rationale	To measure the magnitude of visual impairment, including blindness, and monitor progress in eliminating avoidable blindness and in controlling avoidable visual impairment.
Definition	Prevalence of visual impairment, including blindness, and its causes, preferably disaggregated by age and gender.
Preferred methods of data collection	Methodologically sound and representative surveys of prevalence provide the most reliable method. Additionally, the Rapid Assessment of Avoidable Blindness and the Rapid Assessment of Cataract Surgical Services are two standard methodologies for obtaining results for people in the age group with the highest prevalence of visual impairment, that is, those over 50 years of age.
Unit of measurement	Prevalence of visual impairment determined from population surveys.
Frequency of data collection	At national level at least every five years.
Source of data	Health ministry or national prevention of blindness/eye health coordinator/committee.
Dissemination of data	The WHO Secretariat periodically updates the global estimates on the prevalence and causes of visual impairment.

2.1 Number of eye-care personnel by cadre: ophthalmologists

Purpose/rationale	To assess availability of the eye health workforce in order to formulate a capacity-development response for strengthening national health systems. Ophthalmologists are the primary cadre that delivers medical and surgical eye-care interventions.
Definition	Number of medical doctors certified as ophthalmologists by national institutions based on government-approved certification criteria. Ophthalmologists are medical doctors who have been trained in ophthalmic medicine and/or surgery and who evaluate and treat diseases of the eye.
Preferred methods of data collection	Registers of national professional and regulatory bodies.
Unit of measurement	Number of ophthalmologists per 1 million population.
Frequency of data collection	Annually
Limitations	The number does not reflect the proportion of ophthalmologists who are not surgically active, clinical output (e.g. subspecialists), performance and quality of interventions. Unless disaggregated, the data do not reflect geographical distribution.
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee.
Dissemination of data	The WHO Secretariat annually issues a global update based on the national data provided by Member States.

2.2 Number of eye-care personnel by cadre: optometrists

Purpose/rationale	To assess availability of the eye health workforce in order to formulate a capacity-development response for strengthening national health systems. In an increasing number of countries, optometrists are often the first point of contact for people with eye diseases.
Definition	Number of optometrists certified by national institutions based on government-approved certification criteria.
Preferred methods of data collection	Registries of national professional and regulatory bodies.
Unit of measurement	Number of optometrists per 1 million population.
Frequency of data collection	Annually
Limitations	The number does not denote performance, especially the quality of interventions to reduce avoidable blindness. There is a wide variability in knowledge and skill of optometrists from one nation to another because educational curricula are not standardized. Numbers do not reflect the proportion of ophthalmic clinical officers, refractionists and other such groups who in some countries perform the role of optometrists where this cadre is short-staffed or does not exist.
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee.
Dissemination of data	The WHO Secretariat annually issues a global update based on the national data provided by Member States.

2.3 Number of eye care personnel by cadre: allied ophthalmic personnel

Purpose/rationale	To assess availability of the eye health workforce in order to formulate a capacity-development response for strengthening national health systems. Allied ophthalmic personnel may be characterized by different educational requirements, legislation, and practice regulations, skills and scope of practice among countries and even within a given country. Typically, allied ophthalmic personnel comprise opticians, ophthalmic nurses, orthoptists, ophthalmic and optometric assistants, ophthalmic and optometric technicians, vision therapists, ocularists, ophthalmic photographer/imagers, and ophthalmic administrators.
Definition	Numbers of allied ophthalmic personnel comprising professional categories, which need to be specified by a reporting Member State.
Preferred methods of data collection	Compilation of national data from subnational (district) data from government, nongovernmental and private eye-care service providers.
Unit of measurement	Number of allied ophthalmic personnel per 1 million population.
Frequency of data collection	Annually
Limitations	The numbers do not denote performance, especially the quality of interventions to reduce avoidable blindness. There is a wide variability in knowledge and skill. These data are useful for monitoring of progress in countries over time, but because of variation in nomenclature they cannot be reliably used for intercountry comparison.
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee.
Dissemination of data	The WHO Secretariat annually issues a global update based on the national data provided by Member States.

3.1 Cataract surgical rate

Purpose/rationale	Globally, cataract remains the leading cause of blindness. Visual impairment and blindness from cataracts are avoidable because an effective means of treatment (cataract extraction with implantation of an intraocular lens) is both safe and efficacious to restore sight. The cataract surgical rate is a quantifiable measure of cataract surgical service delivery. The rate can be used to set targets within countries rather than for intercountry comparisons. It is also often used as a proxy indicator for general eye-care service delivery.
Definition	The number of cataract operations performed per year per 1 million population.
Preferred methods of data collection	Government health information records and surveys.
Unit of measurement	Number of cataract operations performed per 1 million population.
Frequency of data collection	Annually at national level. In larger countries it is desirable to collate data at the subnational level.
Limitations	This indicator is meaningful only when it includes all cataract surgeries performed in a country, that is, those performed within the government and nongovernmental sectors.
Comments	For calculations, use official sources of population data (e.g. the United Nations).
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee.
Dissemination of data	The WHO Secretariat annually issues a global update based on the national data provided by Member States.

3.2 Cataract surgical coverage

Purpose/rationale	To assess the degree to which cataract surgical services are meeting the need.
Definition	Proportion of people with bilateral cataracts eligible for cataract surgery who have received cataract surgery in one or both eyes (at the 3/60 and 6/18 level).
Preferred methods of data collection	Calculation using data from methodologically sound and representative prevalence surveys. Additionally, calculation using data from the Rapid Assessment of Avoidable Blindness and the Rapid Assessment of Cataract Surgical Services, which are two standard methodologies to obtain results for people in the age group with the highest prevalence of blindness and visual impairment due to cataract, that is, those over 50 years of age.
Unit of measurement	Proportion
Frequency of data collection	Determined by the frequency of performing a national/district study on the prevalence of blindness and visual impairment and their causes.
Limitations	Requires population-based studies, which may be of limited generalization.
Comments	Preferably data are disaggregated by gender, age, and urban/rural location or district.
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee.
Dissemination of data	The WHO Secretariat periodically issues updates.

APPENDIX 2: MEANS OF VERIFICATIONS AND IMPORTANT ASSUMPTIONS

	Means of verification	Important assumptions
Goal: To reduce avoidable visual impairment as a global public health problem and secure access to rehabilitation services for the visually impaired.[5]	Collection of epidemiological data at national and subnational levels and development of regional and global estimates.	Human rights conventions implemented, equity across all policies achieved and people with visual impairment fully empowered. Sustained investment achieved by the end of the regional action plan.
Purpose: To improve access to comprehensive eye-care services that are integrated into health systems.	Reports summarizing national data provided by Member States.	Services accessed fully and equitably by all populations.
Objective 1: Evidence generated and used to advocate increased political and financial commitment of Member States for eye health.	Epidemiological and economic assessment on the prevalence and causes of visual impairment reported to the WHO Secretariat by Member States. Eye-care service assessment and cost-effectiveness research results used to formulate national and subnational policies and plans for eye health. Reports of national, regional and global advocacy and awareness-raising events.	Advocacy successful in increasing investment in eye health despite the current global financial environment and competing agendas.
Objective 2: National eye health policies, plans and programmes for enhancing universal eye health developed and/or strengthened and implemented in line with WHO's framework for action for strengthening health systems to improve health outcomes.	Reports summarizing data provided by Member States.	Policies, plans and programmes have sufficient reach for all populations. Services accessed by those in need.
Objective 3: Multisectoral engagement and effective partnerships for improved eye health strengthened.	Reports from Member States received and collated by the WHO Secretariat. Receipt of annual reports and publications from partnerships.	Non-health sectors invest in wider socioeconomic development, e.g. water and sanitation.

[5] The objective of the WHO Secretariat's programme for the prevention of blindness is "to prevent and control major avoidable causes of blindness and to make essential eye care available to all ... the long-term target being to reduce national blindness rates to less than 0.5%, with no more than 1% in individual communities". *Formulation and Management of National Programmes for the Prevention of Blindness*. Geneva, World Health Organization, 1990 (document WHO/PBL/90.18).

Appendix 2

APPENDIX 3: MEASURABLE INDICATORS

Objective 1

Measurable Indicators

1. Number (%) of Member States that have undertaken prevalence surveys and will have published results by 2019.
2. Number (%) of Member States completed and published an eye-care service assessment over the past five years as of 2019.
3. Observation of World Sight Day reported by Member States.

Objective 2

Measurable Indicators

1. Number (%) of Member States that report a national plan that includes human resources for eye health.
2. Number (%) of Member States reporting the implementation of policies, plans and programmes for eye health.
3. Number (%) of Member States with an eye health/prevention of blindness committee, and/or a national prevention of blindness coordinator, or equivalent mechanism in place.
4. Number (%) of Member States that include eye-care sections in their national lists of essential medicines, diagnostics and health technologies.

Objective 3

Measurable Indicators

1. Number (%) of Member States that refer to a multisectoral approach in their national eye health/prevention of blindness plans and policies.
2. The WHO Alliance for the Global Elimination of Blinding Trachoma achieving targets identified in its strategic plan for 2020.