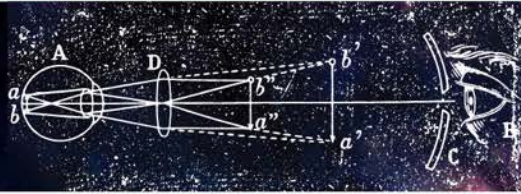


Serge Resnikoff

Global Public Health Crisis What's in Sight?

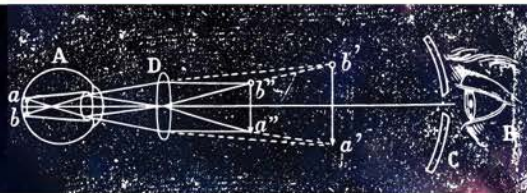


Brien Holden®
VISION INSTITUTE



Preamble

Global Burden of Disease and WHO Global Target



Global Burden of Disease Study – Systematic Review

Levels of visual acuity estimated in this study

International Classification
ICD-10

Visual Impairment = BL + MSVI
= < than 20/70

**Level
of impairment**

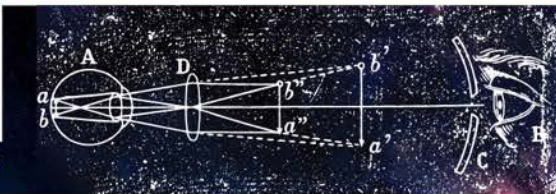
**Presenting
VA**

Moderate &
Severe vision
impairment

**<20/70 →
≥ 20/400**

Blindness

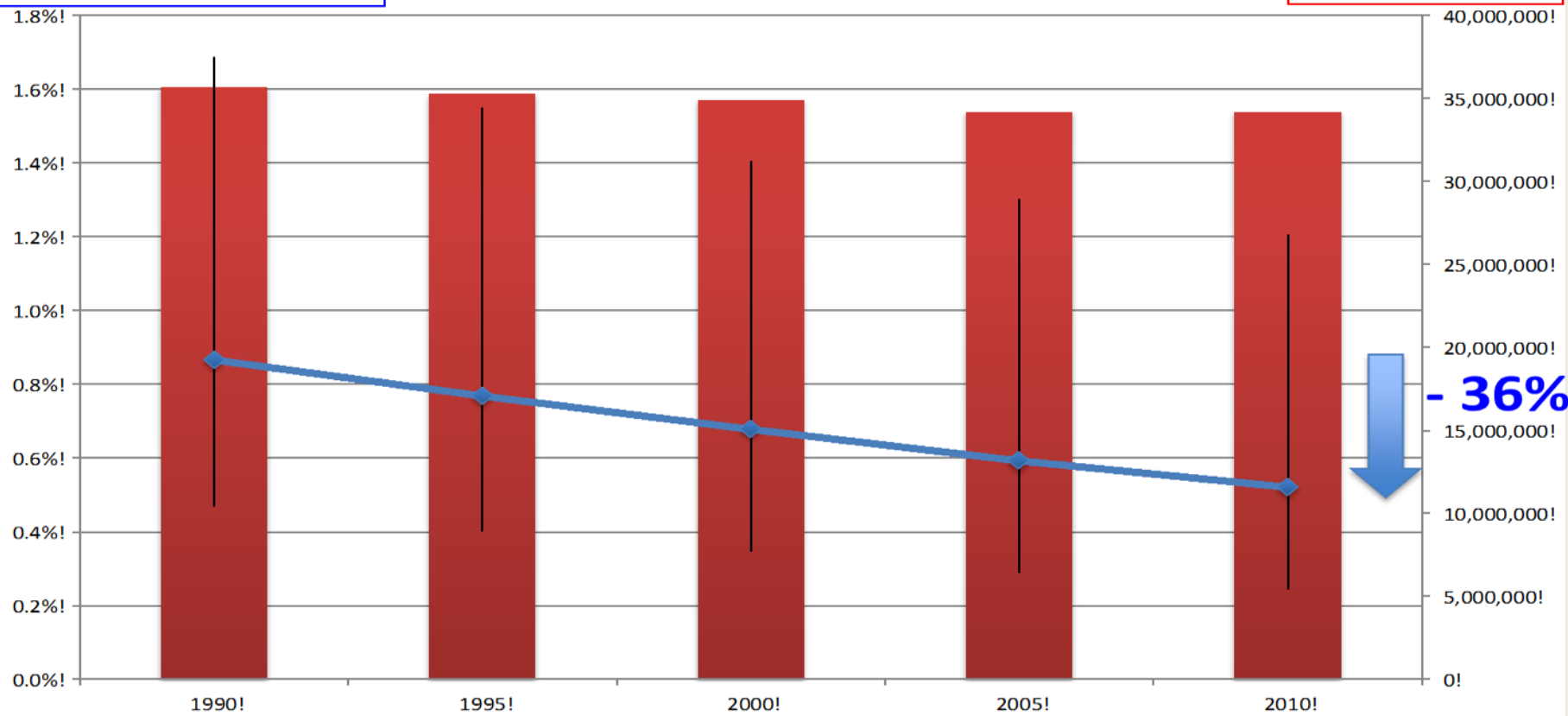
< 20/400

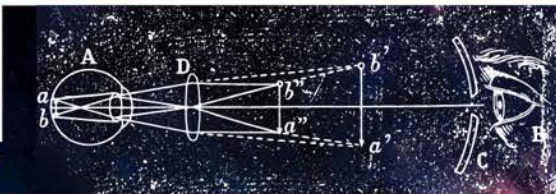


Global burden: Blindness (PVA <20/400) 1990 - 2010

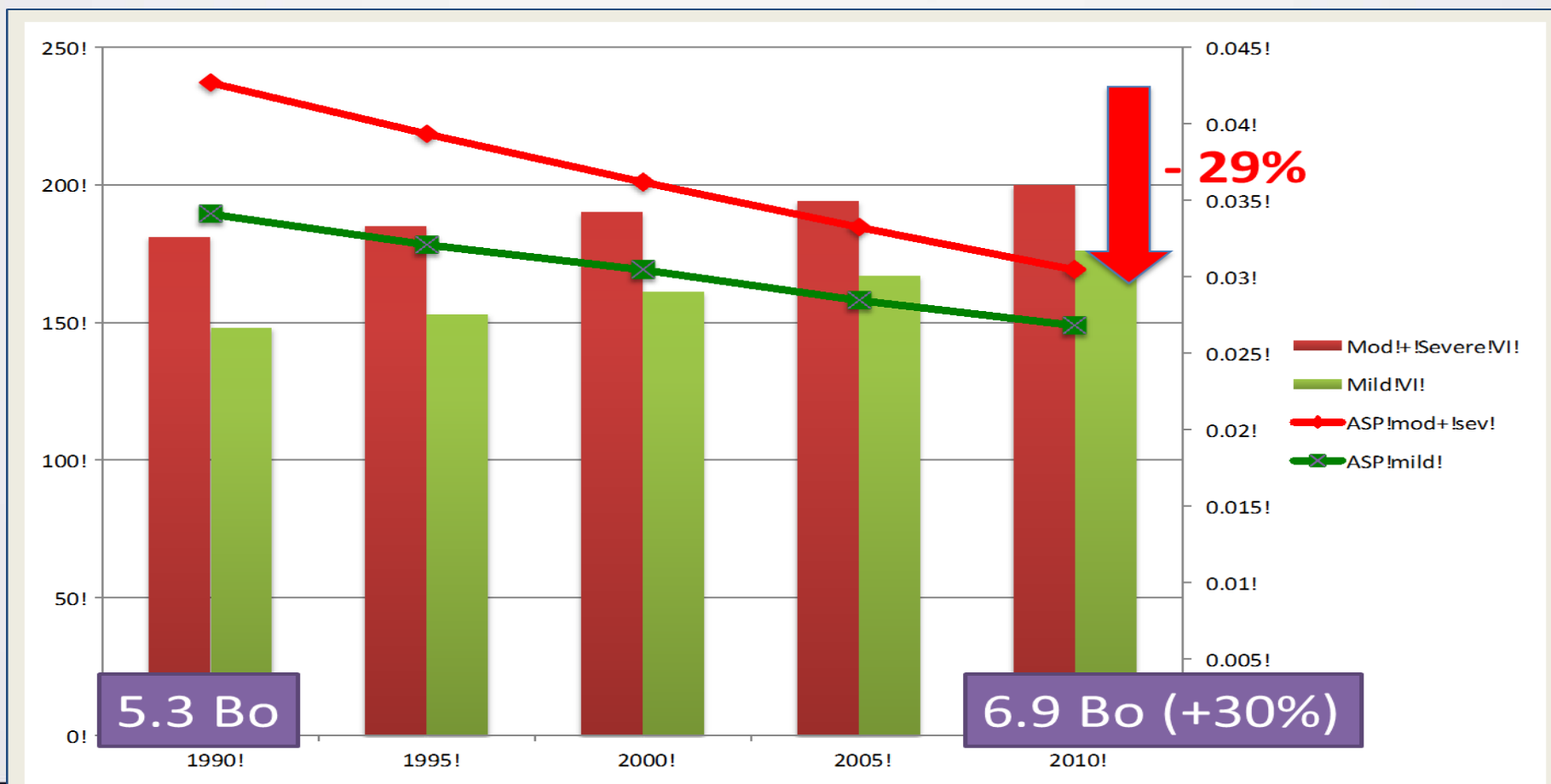
Age-stand. Prevalence

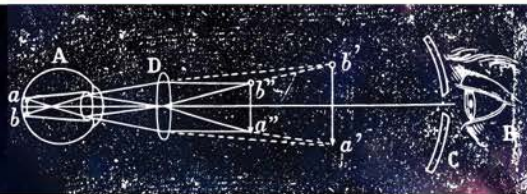
Number Blind



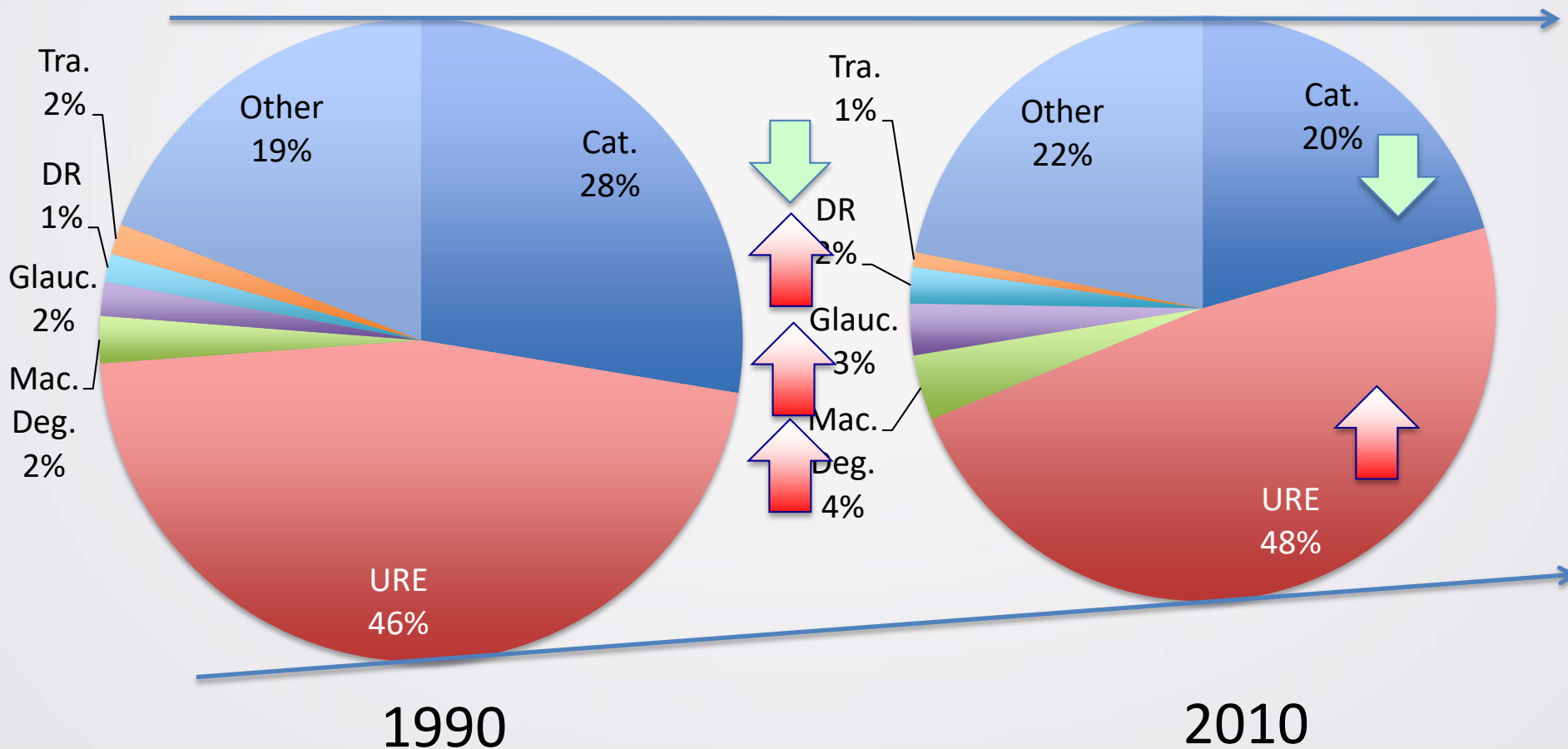


Global burden: Blindness (PVA <20/400) 1990 - 2010²



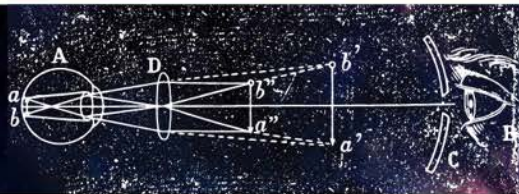


Causes of Vision Impairment 1990 – 2010 PVA < 20/70



1990

2010



Universal

As a global target, the **reduction in prevalence of avoidable visual impairment by 25% by 2019** from the baseline of 2010 has been selected for this action plan.

*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%***



Universal eye health: a global action plan 2014-2019

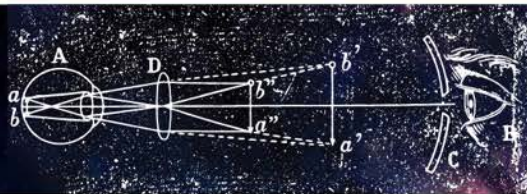
surgery. Further details are provided in Appendix 4.

- **Prevalence and causes of visual impairment.** It is important to understand the magnitude and causes of visual impairment and trends over time. This

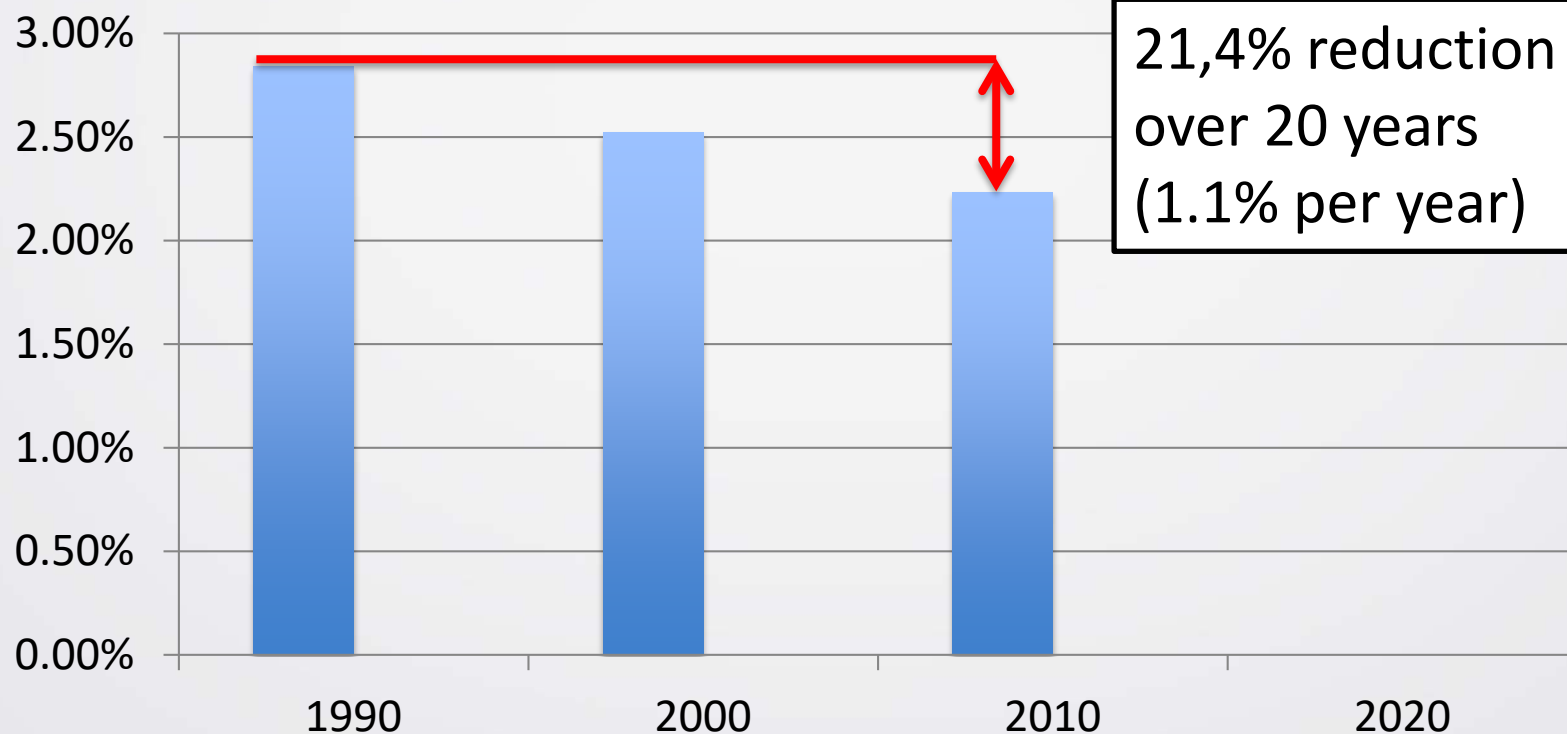
10. For the first of these indicators there is a **global target**. It will provide an overall measure of the impact of the action plan. As a global target, the **reduction in prevalence of avoidable visual impairment by 25% by 2019** from the

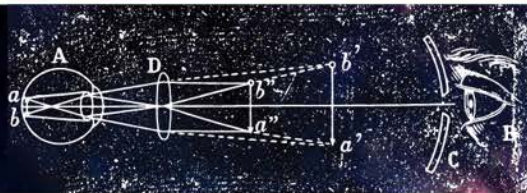
Member States have data on the prevalence and causes of visual impairment, coverage for cataract surgery can be calculated; it is an important measure that provides information on the degree to which cataract surgical services are meeting needs.

plan for the prevention and control of noncommunicable diseases 2013-2020, and global efforts to eliminate trachoma suggest the target, albeit ambitious, is achievable. In addition, wider health gains coming from the expected increase in the

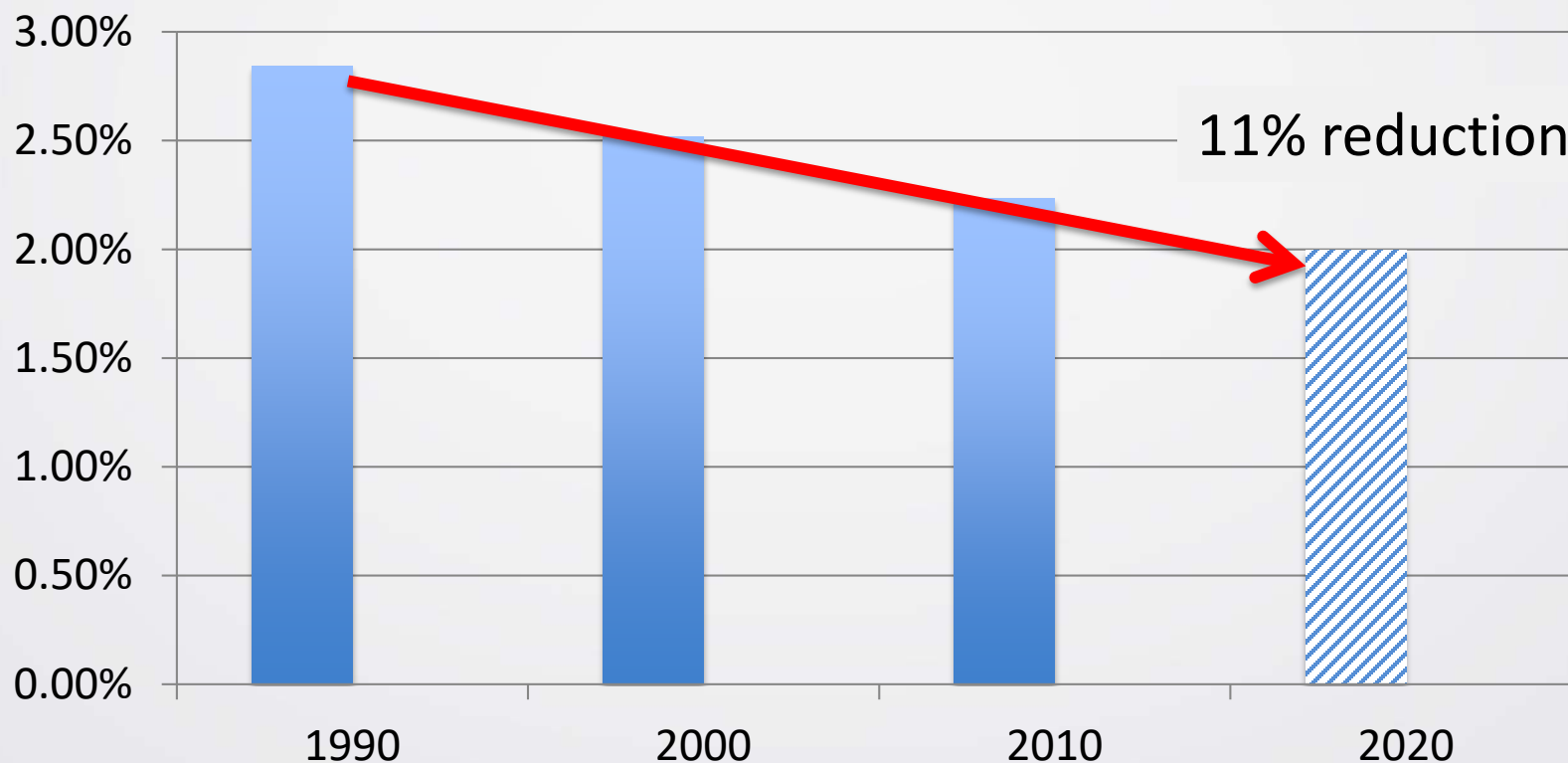


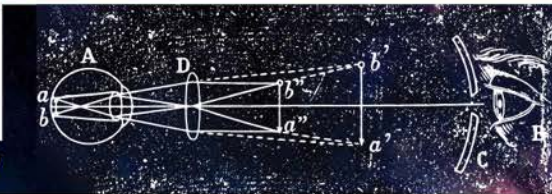
Changes in prevalence of Avoidable Visual Impairment, 1990 - 2010



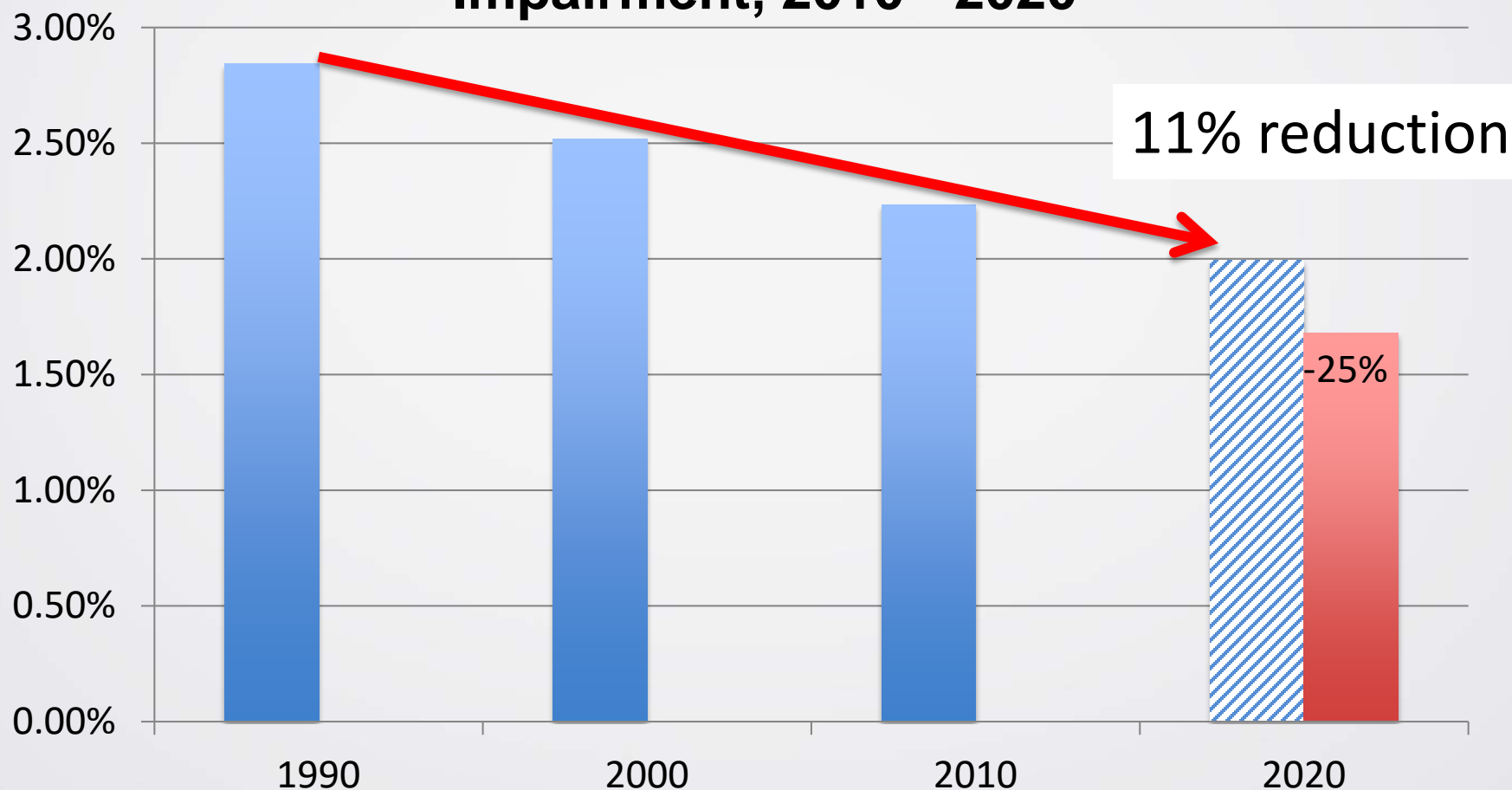


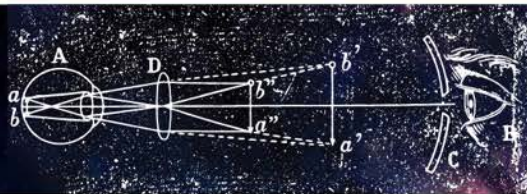
Projected reduction in prevalence of Avoidable Visual Impairment, 2010 - 2020



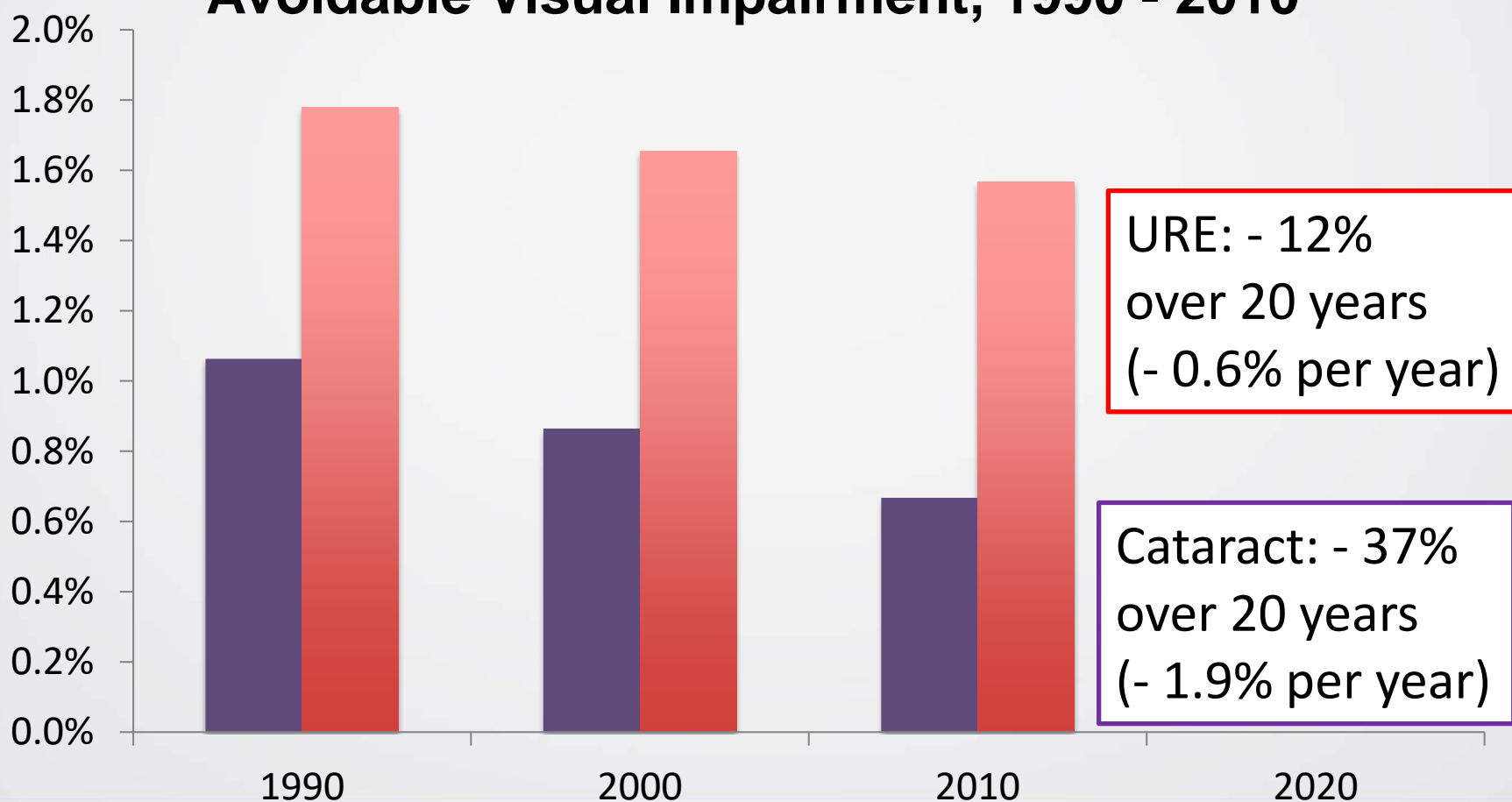


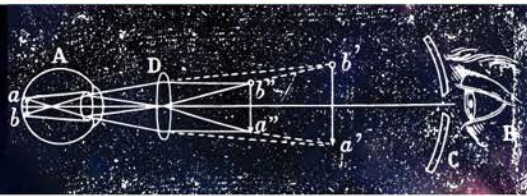
Projected reduction in prevalence of Avoidable Visual Impairment, 2010 - 2020



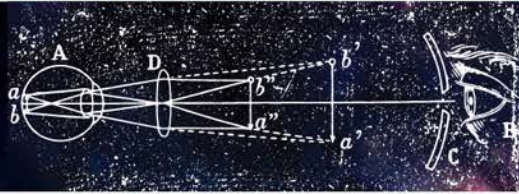


Changes in prevalence of Avoidable Visual Impairment, 1990 - 2010





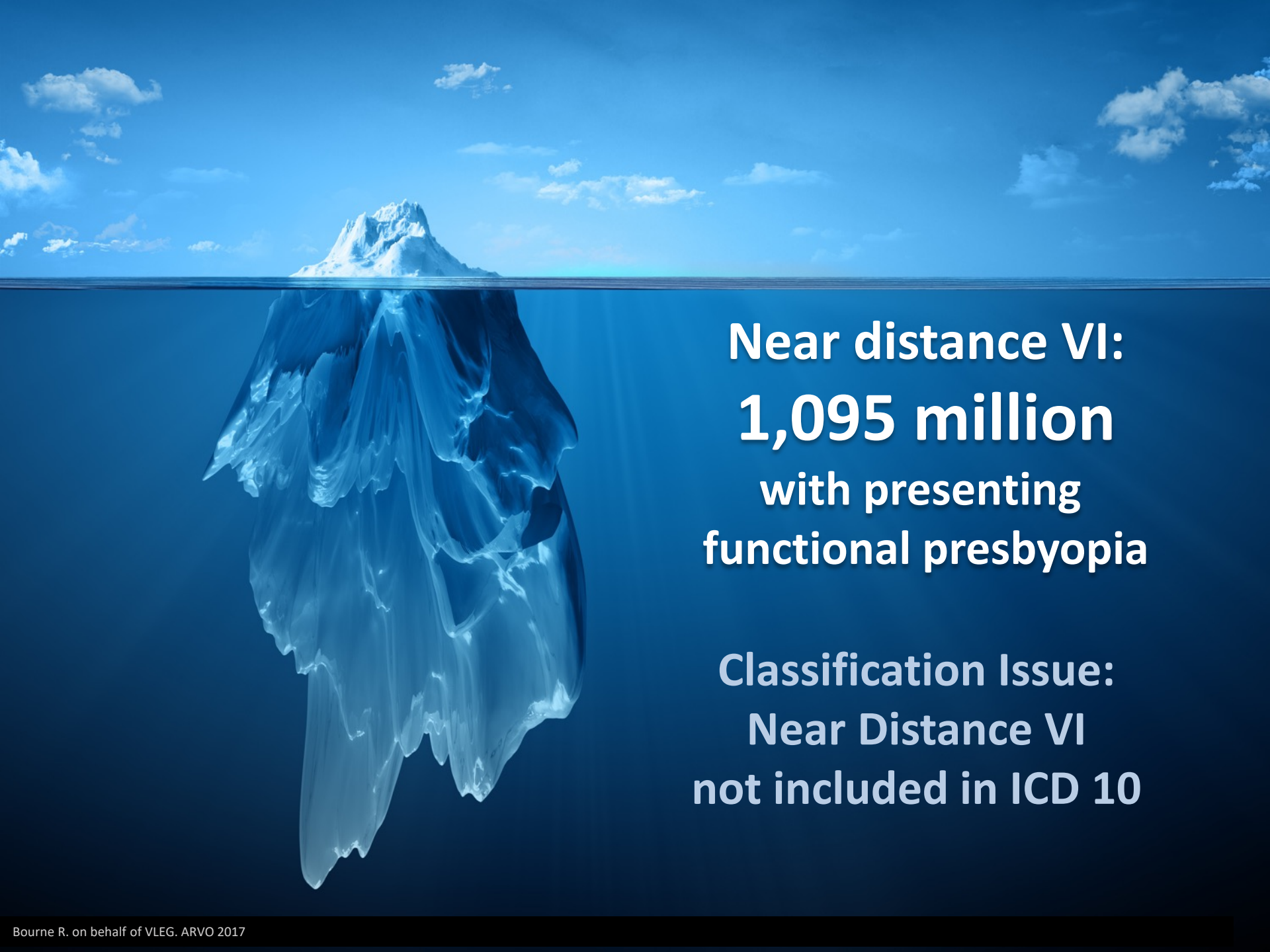
Global burden of Visual Impairment due to URE



UNCORRECTED REFRACTIVE ERRORS (108 million people in the world)

**6.8 million
Blind**

**101.2 million
MSVI**

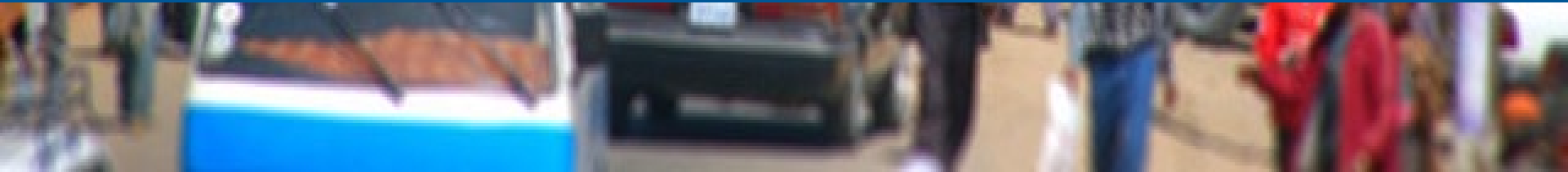
An iceberg floating in a blue ocean under a blue sky with scattered white clouds. The tip of the iceberg is above the water line, while the much larger, jagged body of the iceberg is submerged below the surface. The water is a deep blue, and the sky is a lighter blue with soft, white clouds.

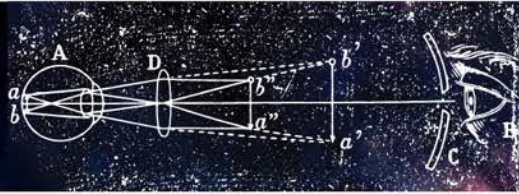
**Near distance VI:
1,095 million
with presenting
functional presbyopia**

**Classification Issue:
Near Distance VI
not included in ICD 10**

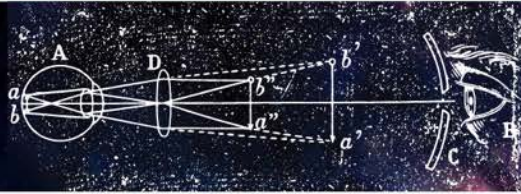


The Problem: 1.2 billion people are vision impaired simply because they don't have a pair of glasses.

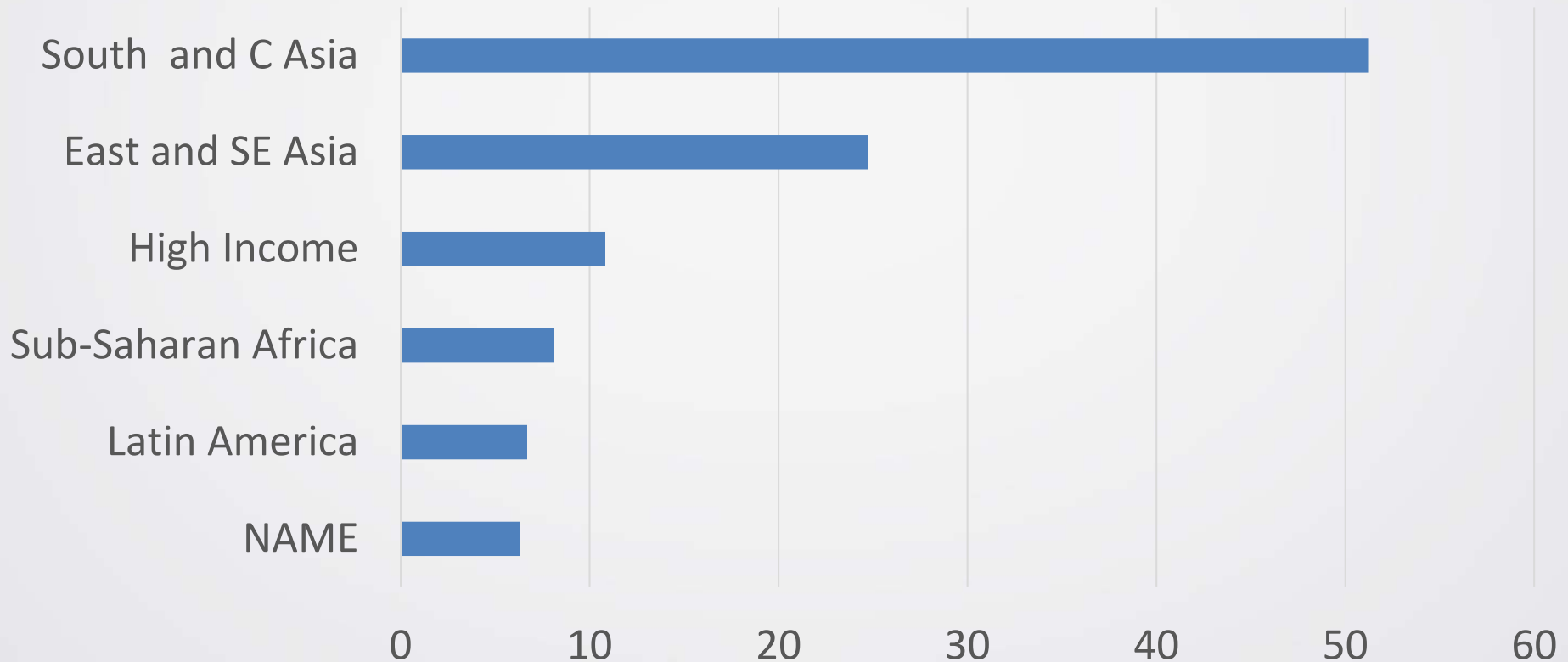


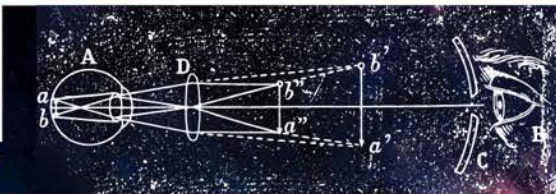


Global and Regional Prevalence of Visual Impairment due to URE

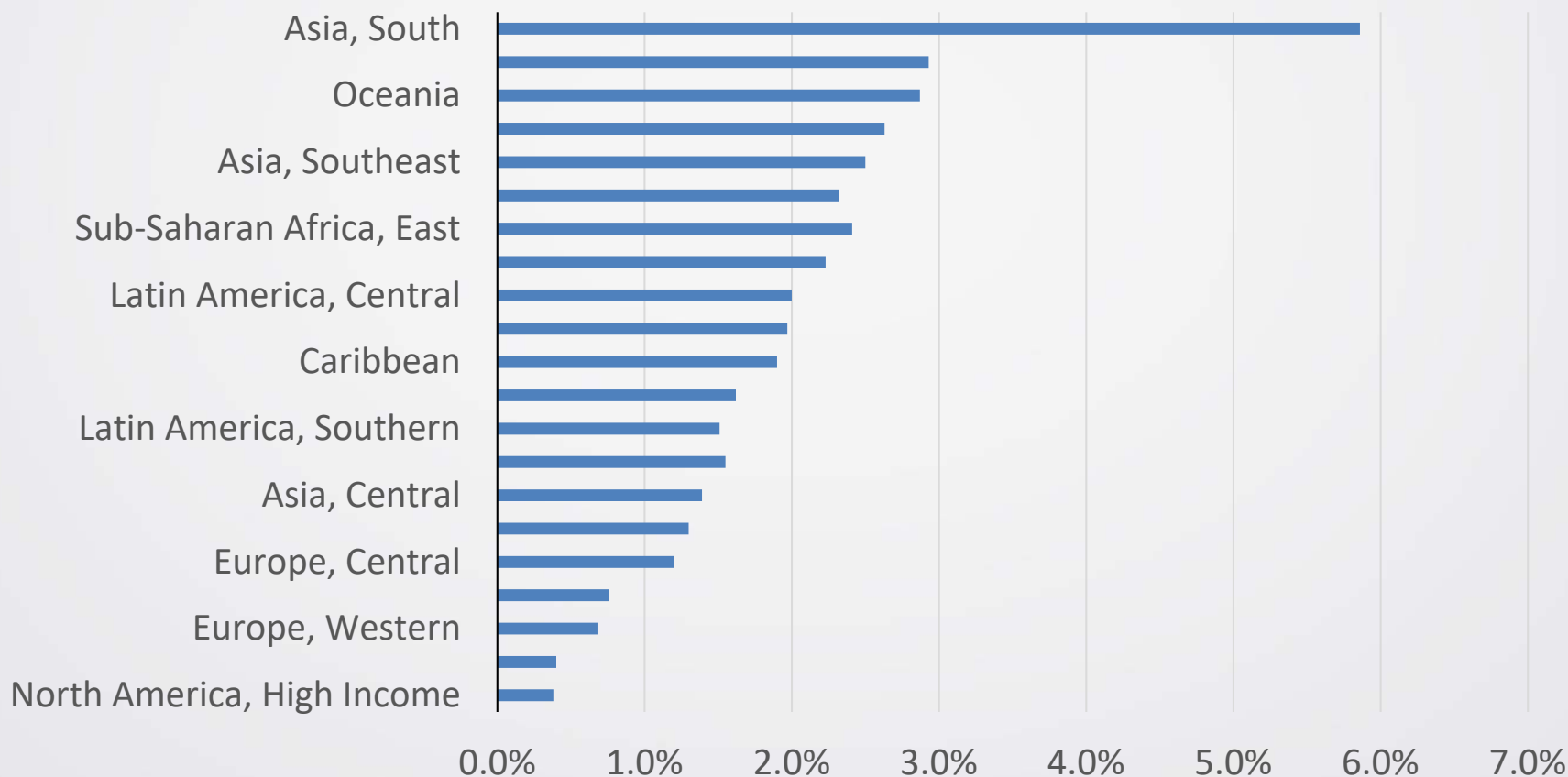


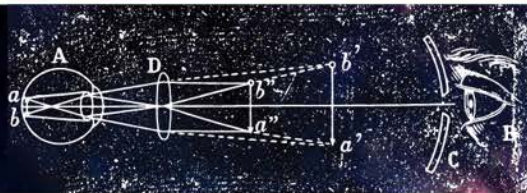
Number Vision Impaired (in millions) due to URE in 2010





Prevalence of URE – PVA<20/70 all ages, age-standardised, 2010





Refractive errors in children aged 5-15: **56% to 88% Under-corrected**

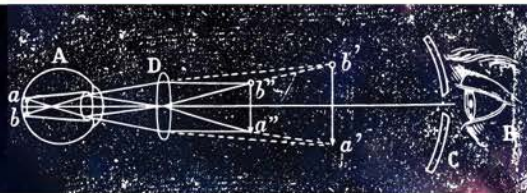
**USA: 37% RE;
67% Uncorrected**

**China: 41% RE;
85% Uncorrected**

**Nepal: 3% RE;
88% Uncorrected**

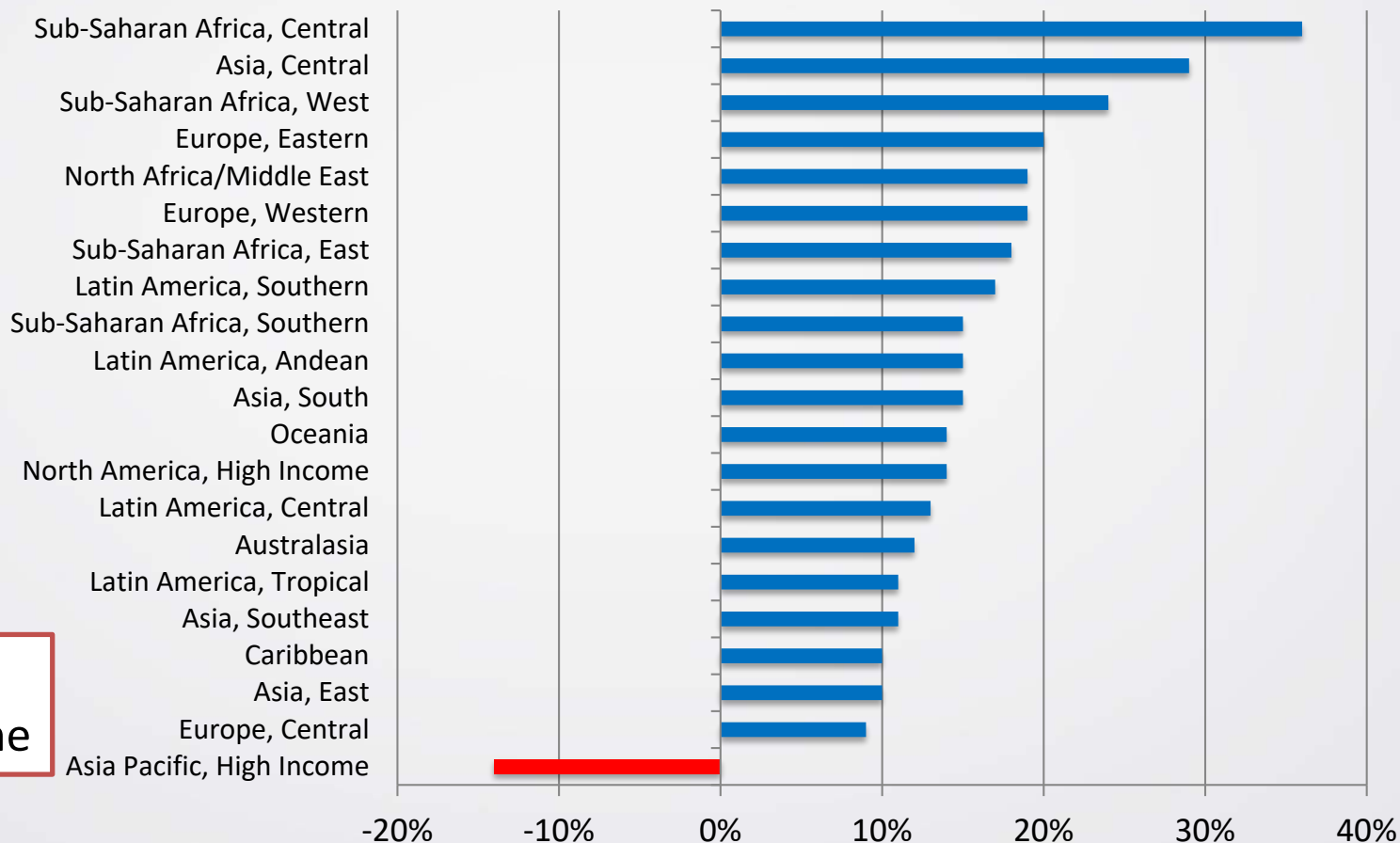
**Tanzania: 3% RE
80% Uncorrected**

**Chile: 15% URE
56% Uncorrected**

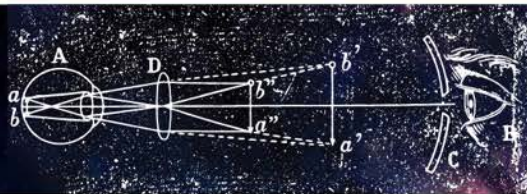


Reduction in prevalence of URE

PVA<20/70, all ages, 1990 – 2010



Asia Pacific
High Income

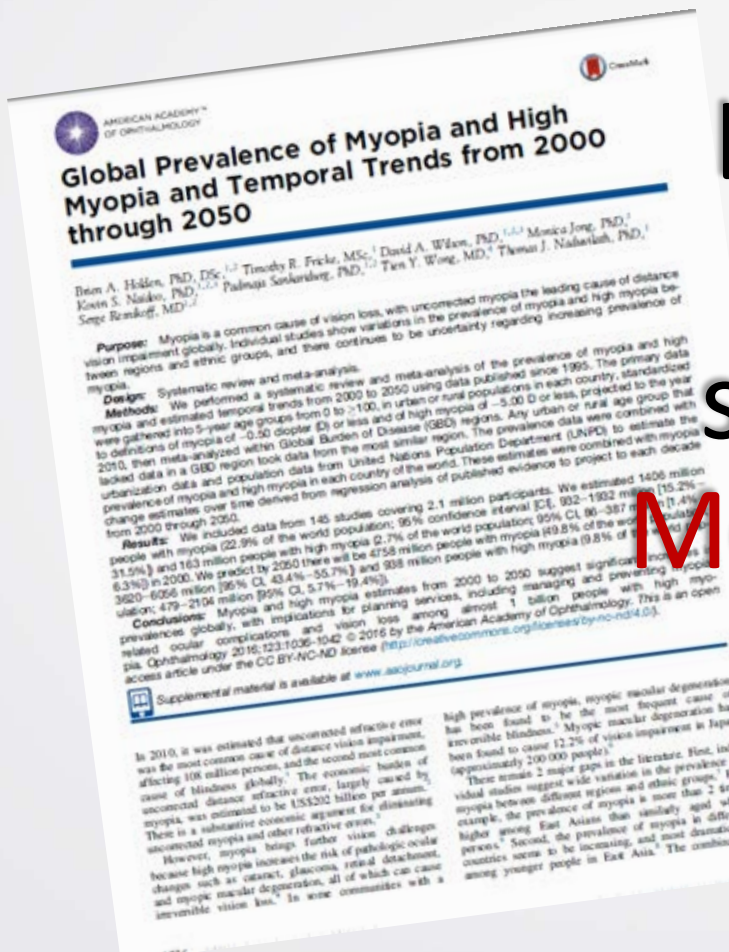
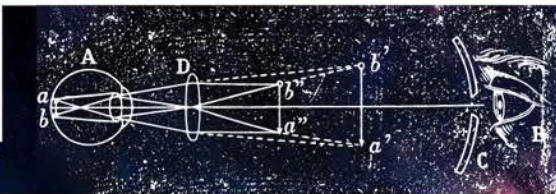


So...

- Current trend will not lead to a 25% reduction
- Need to double the reduction rate
 - Requires massive scale up
 - Needs to concentrate on underserved populations
- Role of “Myopia Epidemics” - a major challenge

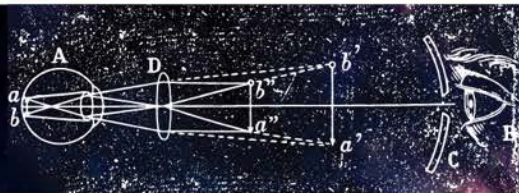
A close-up, slightly blurred photograph of a young girl with dark hair and glasses. She is looking upwards and to the right with a joyful expression, her mouth open in a smile. The background is a solid, muted olive-green color. A solid blue horizontal band is positioned across the lower third of the image, containing the text 'Myopia Epidemic' in white.

Myopia Epidemic



Looking at Myopia specifically Meta-analysis





1 STANDARDIZED
DEFINITIONS OF MYOPIA

2 PREVALENCE OF
MYOPIA COUNTRY-WISE
Prevalence combined
with population data
from 2000 to 2050
(ages 0 to 100+). For
21 GBD regions
Extrapolated to
neighbouring counties

3 ADJUSTING FOR THE
CHANGE IN
PREVALENCE of myopia
over time using age-
specific data

4 PREVALENCE OF MYOPIA
IN EACH DECADE
calculated by Published
prevalence x cumulative
change (annual change x
no of years)



Overview of research process



Standardising the definitions of myopia and high myopia

THE IMPACT OF MYOPIA AND HIGH MYOPIA

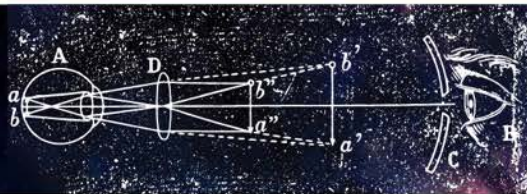
Report of the Joint
World Health Organization–Brien Holden Vision Institute
Global Scientific Meeting on Myopia

University of New South Wales, Sydney, Australia
16–18 March 2015

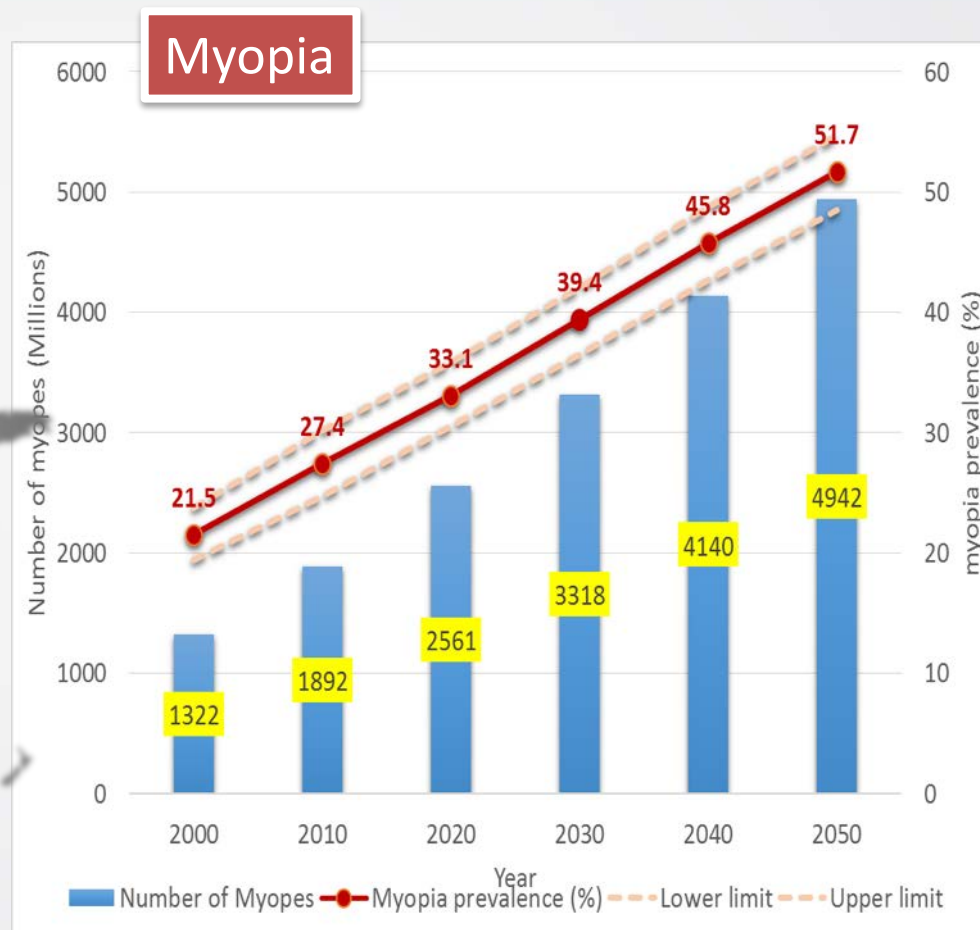
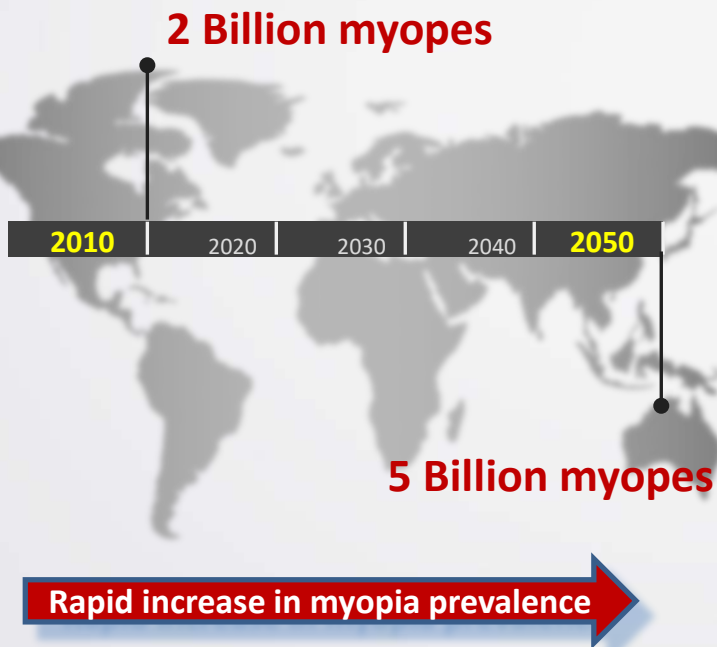
Myopia defined as
 $\leq -0.50D$

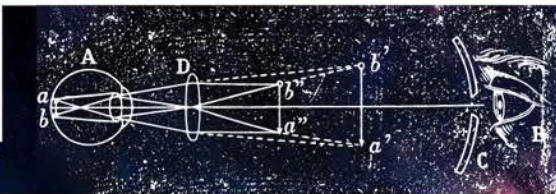
High myopia as
 $\leq -5.00D$.

- Studies in meta-analysis used various classifications of myopia, but definition based on most commonly used

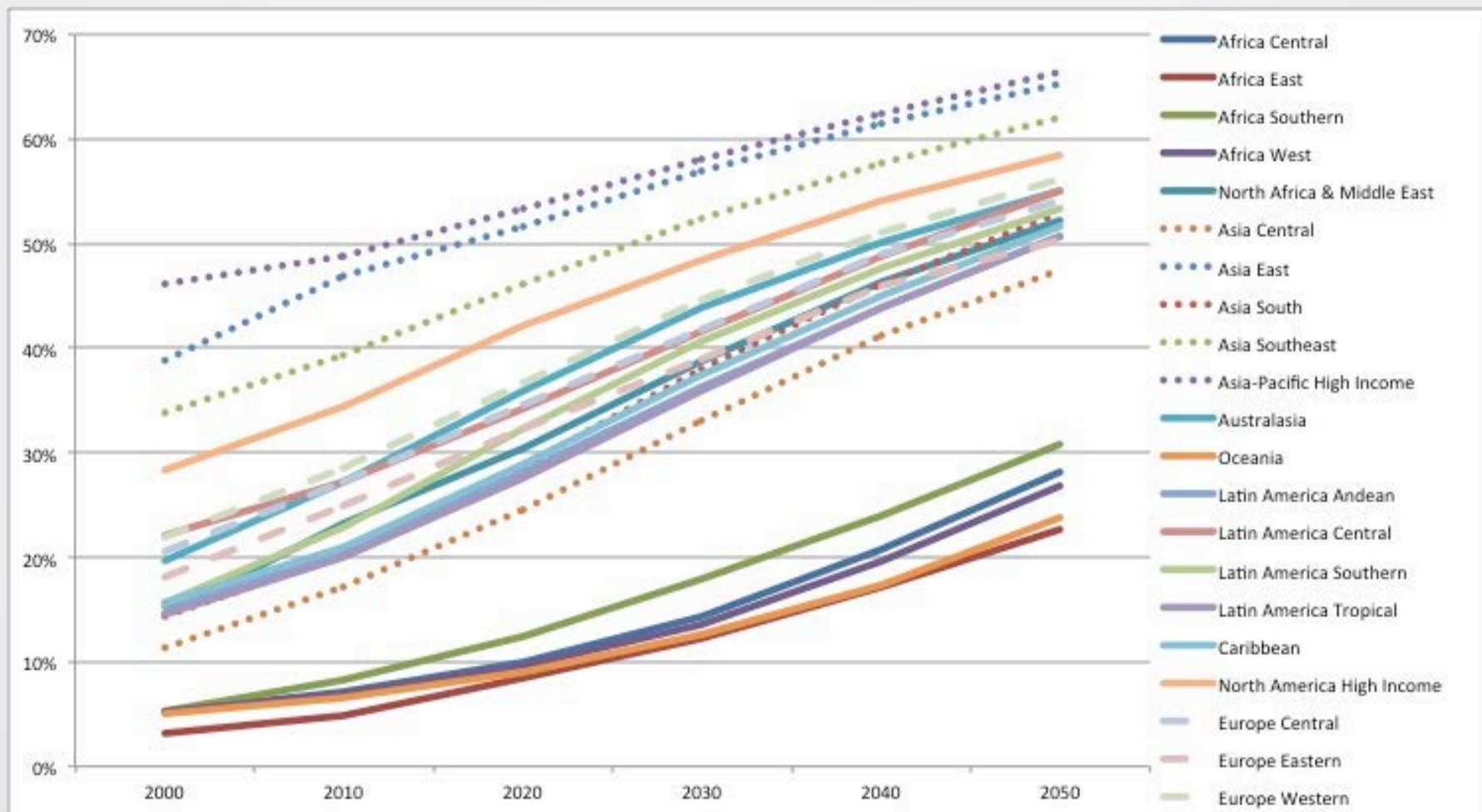


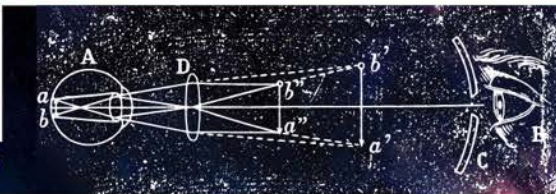
Prevalence of myopia



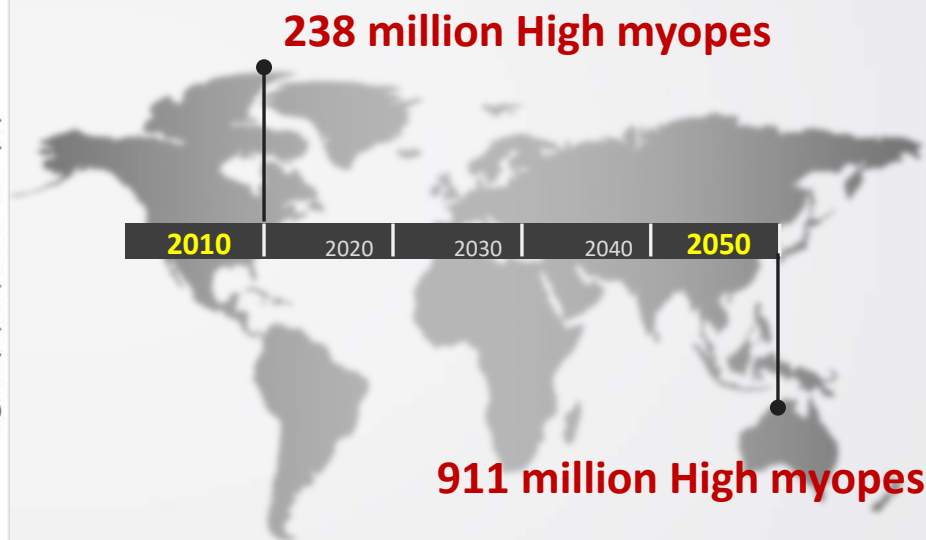
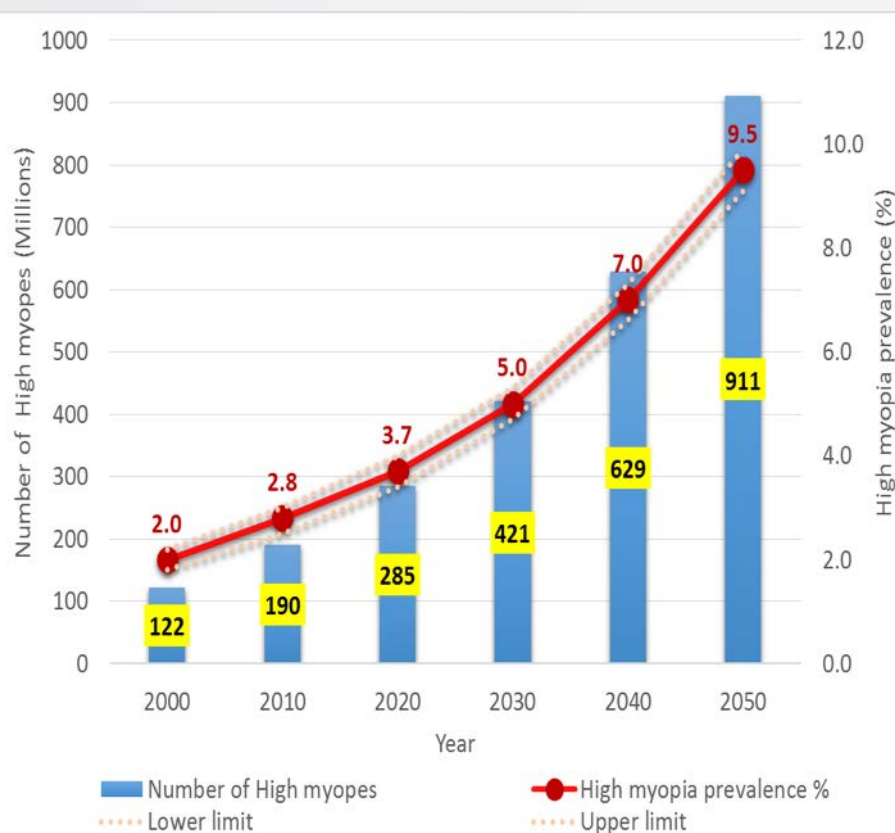


Prevalence of Myopia, 21 Regions, 2000 to 2050

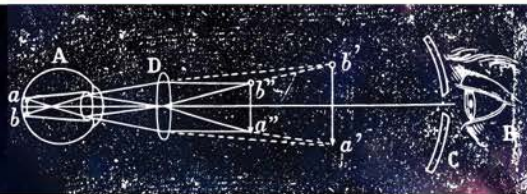




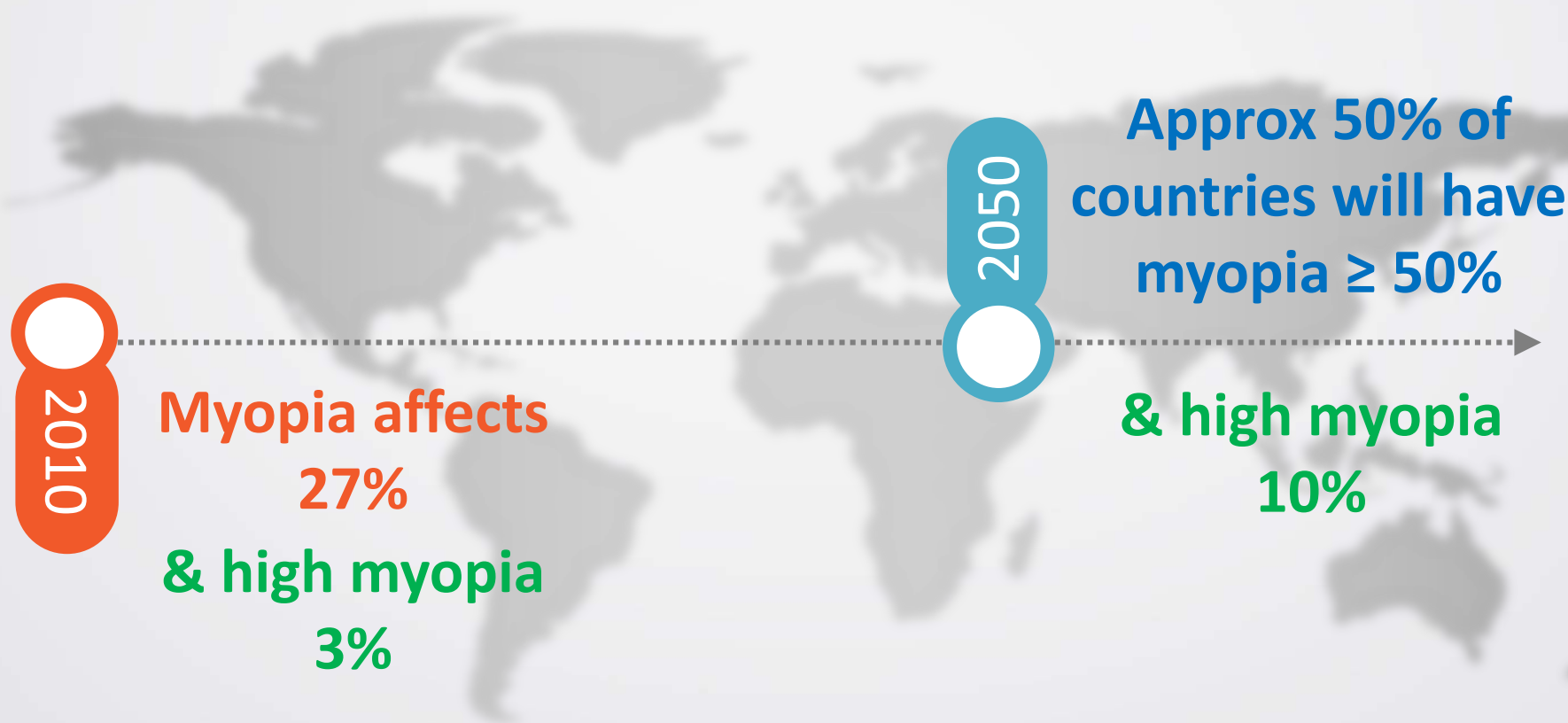
Projected number of high myopes in 2050

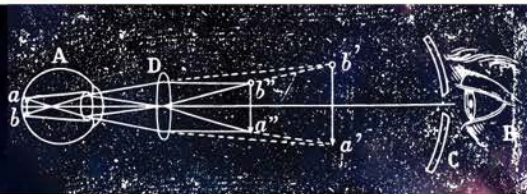


Substantial increase in high myopes 911 million high myopes in 2050



What are the implications?



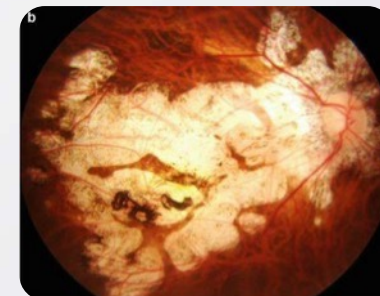


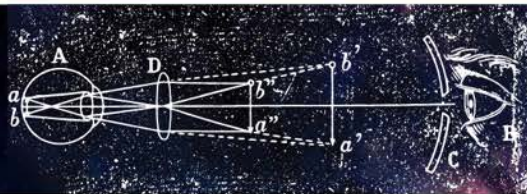
Impact of myopia on individuals and Eye Care Services

High Myopia is a significant risk factors for Cataract (3.3x) and Glaucoma (14.4x)



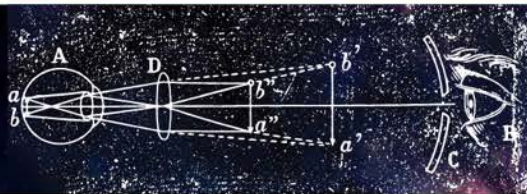
Blindness and vision impairment due to Myopic macular degeneration(MMD) and other retinal complications will increase substantially





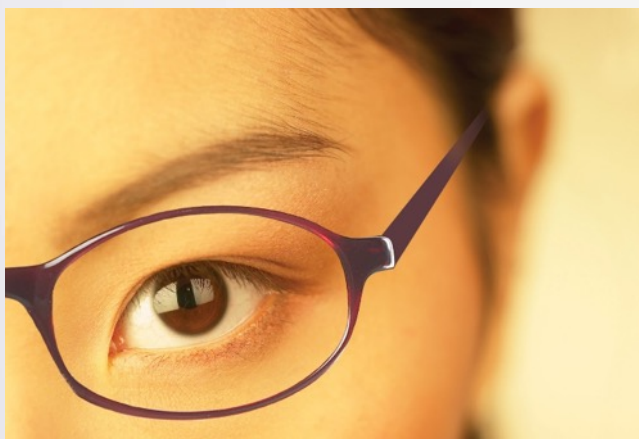
Myopic Macular Degeneration

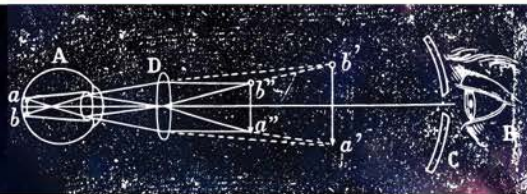
- Already 1st cause of Vision Loss in some places in Asia
- Preliminary estimates
 - 10+ million visually impaired in 2015
 - 70+ million in 2050 if nothing changes



Implications

- Need for refractive services- spectacles, contact lenses and specialist services for managing myopia related complications will increase



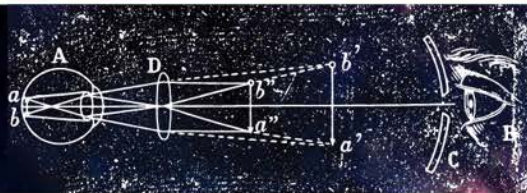


A Global Response is needed

- A Global Issue – no country is to be spared, even the most developed



A clear success (Trachoma, Onchocerciasis, Cataract...)
However, “elimination” is not possible, especially for chronic conditions



Global Response : WHO and partners

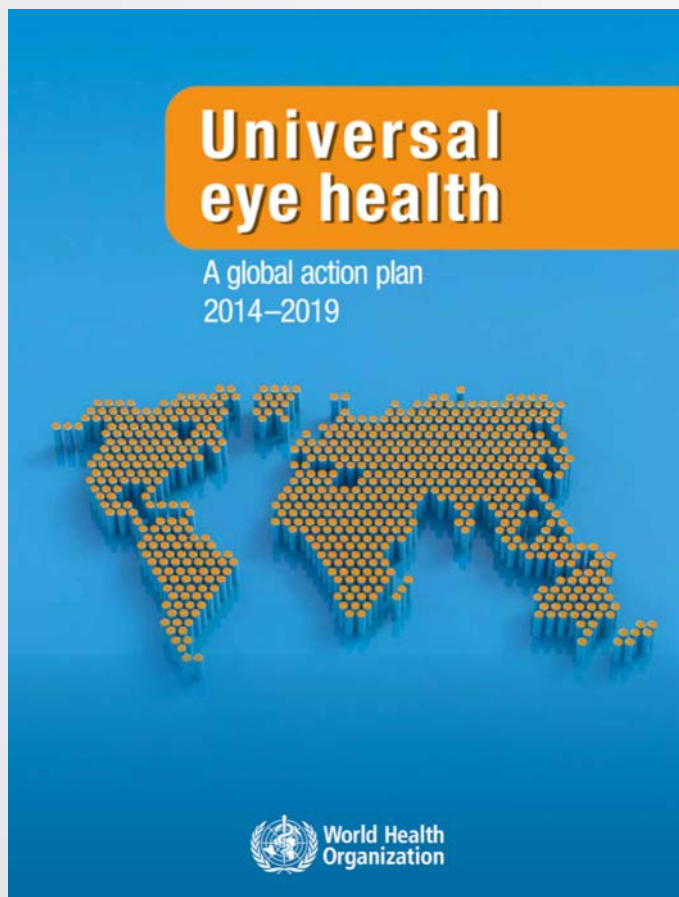
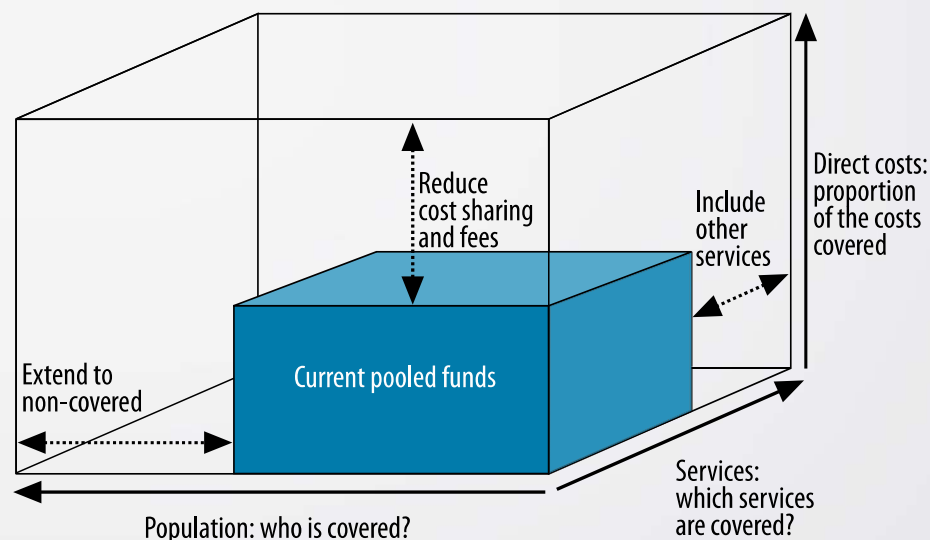
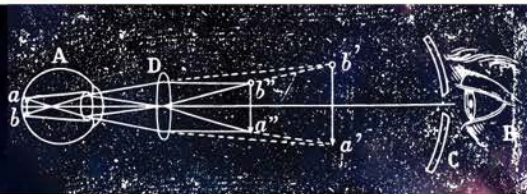


Fig. 1. Three dimensions to consider when moving towards universal coverage



Health Financing WHO Report, 2010



Global Response: what's next?

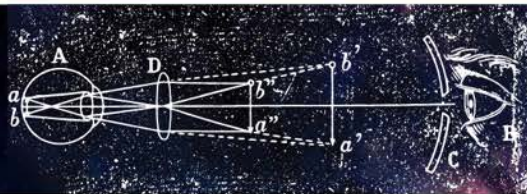
- WHO World Report on Vision
 - Planned for Oct 2018
 - Multisectoral approaches
 - Links to SDGs
 - Behavioral changes



Might lead to a Global Campaign

**Focus on
Eye Health
National
Summit:**

What's in Sight?



 **Prevent
Blindness®**
Bringing Americans to Eye Care



