

Global data on visual impairment in the year 2002

Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, Pokharel GP, Mariotti SP.

This paper presents estimates of the prevalence of visual impairment and its causes in 2002, based on the best available evidence derived from recent studies. Estimates were determined from data on low vision and blindness as defined in the *International statistical classification of diseases, injuries and causes of death*, 10th revision. The number of people with visual impairment worldwide in 2002 was in excess of 161 million, of whom about 37 million were blind.

The burden of visual impairment is not distributed uniformly throughout the world: the least developed regions carry the largest share. Visual impairment is also unequally distributed across age groups, being largely confined to adults 50 years of age and older. A distribution imbalance is also found with regard to gender throughout the world: females have a significantly higher risk of having visual impairment than males.

Notwithstanding the progress in surgical intervention that has been made in many countries over the last few decades, cataract remains the leading cause of visual impairment in all regions of the world, except in the most developed

countries. Other major causes of visual impairment are, in order of importance, glaucoma, age-related macular degeneration, diabetic retinopathy and trachoma.

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Commentary

Improving Trend in Global Blindness

A global estimate of the magnitude and causes of visual impairment based on the 1990 world population data gave 38 million blind. This estimate was later extrapolated to the 1996 world population to give 45 million blind, and subsequently projected to the 2020 world population estimating 76 million blind. This increasing trend provided the basis for the 1999 launch of VISION 2020, the Global Initiative for the Elimination of Avoidable Blindness. New analysis using 2002 data reports that 37 million were blind. However, refractive error was not included, which implies that the actual global magnitude is greater. It is likely that this positive trend is due to two major factors:

- 1 More data from population-based studies on visual impairment carried out over the last decade are available allowing for more accurate estimates to be made.
- 2 There have been significant achievements in the prevention

and management of avoidable blindness. These include:

- Increased public awareness and utilisation of eye health care services
- Increased availability and affordability of eye health care services
- As part of primary health care, control activities against trachoma, onchocerciasis, vitamin A deficiency and other eye infections have resulted in a significant decrease in the numbers of blind compared to earlier estimates
- Impressive achievements in blindness control in some countries, for example India, The Gambia, Morocco and Thailand
- Increased global political commitment to prevention of visual impairment
- Increased professional commitment to prevention of visual impairment
- Commitment and support of non-governmental organisations
- Involvement and partnership with the corporate sector.

VISION 2020, the Global Initiative for the Elimination of Avoidable Blindness, needs not only to be sustained but strengthened further if the goals are to be achieved. The positive trend over the last 10 years as shown by the new estimates should not be a cause for complacency as demonstrated by the statistic that in 2002, 18 million people are blind in both eyes because they cannot afford or access cataract surgery.

Mass treatment with single-dose azithromycin for trachoma

Solomon AW, Holland MJ, Alexander ND, Massae PA, Aguirre A, Natividad-Sancho A, et al.

BACKGROUND: Trachoma, caused by repeated ocular infection with *Chlamydia trachomatis*, is an important cause of blindness. Current recommended dosing intervals for mass azithromycin treatment for trachoma are based on a mathematical model.

METHODS: We collected conjunctival swabs for quantitative polymerase-chain-reaction assay of *C. trachomatis* before and 2, 6, 12, 18, and 24 months after mass treatment with azithromycin in a Tanzanian community in which trachoma was endemic. For ethical reasons, at 6, 12, and 18 months, we gave tetracycline eye ointment to residents who had clinically active trachoma.

RESULTS: At baseline, 956 of 978 residents (97.8 percent) received either one oral dose of azithromycin or (if azithromycin was contraindicated) a course of tetracycline eye ointment. The prevalence of infection fell from 9.5 percent before mass treatment to 2.1 percent at 2 months and 0.1 percent at 24 months. The quantitative burden of ocular *C. trachomatis* infection in the community was 13.9 percent of the pretreatment level at 2 months and 0.8 percent at 24 months. At each time point after baseline, over 90 percent of the total community burden of *C. trachomatis* infection was found among subjects who had been positive the previous time they were tested.

CONCLUSIONS: The prevalence and intensity of infection fell dramatically and remained low for two years after treatment. One round of very-high-coverage mass treatment with azithromycin, perhaps aided by subsequent periodic use of tetracycline eye ointment for persons with active disease, can interrupt the transmission of ocular *C. trachomatis* infection.

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Gender equity and trichiasis surgery in the Vietnam and Tanzania national trachoma control programmes

West S, Nguyen MP, Mkocha H, Holdsworth G, Ngirwamungu E, Kilima P, Munoz B.

AIMS: To calculate the gender distribution of trichiasis cases in trachoma communities in Vietnam and Tanzania, and the gender distribution of surgical cases, to determine if women are using surgical services proportional to their needs.

METHODS: Population based data from surveys done in Tanzania and Vietnam as part of the national trachoma control programmes were used to determine the rate of trichiasis by gender in the population. Surgical records provided data on the gender ratio of surgical cases.

RESULTS: The rates of trichiasis in both countries are from 1.4-fold to sixfold higher in females compared to males. In both countries, the female to male rate of surgery was the same or even higher than the female to male rate of trichiasis in the population.

CONCLUSIONS: These data provide

assurance of gender equity in the provision and use of trichiasis surgery services in the national programmes of these two countries. Such simple analyses should be used by other programmes to assure gender equity in provision and use of trichiasis surgery services.

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Global burden of trachoma and economics of the disease

Frick KD, Hanson CL, Jacobson GA.

Interest in the economics of trachoma is high because of the refinement of a strategy to control trachomatous blindness, an ongoing global effort to eliminate incident blindness from trachoma by 2020, and an azithromycin donation program that is a component of trachoma control programs in several countries. This report comments on the economic distribution of blindness from trachoma and adds insight to published data on the burden of trachoma and the comparative costs and effects of trachoma control. Results suggest that 1) trichiasis without visual impairment may result in an economic burden comparable to trachomatous low vision and blindness so that 2) the monetary burden of trachoma may be 50 per cent higher than conservative, published figures; 3) within some regions more productive economies are associated with less national blindness from trachoma; and 4) the ability to achieve a positive net benefit of trachoma control depends importantly on the cost per dose of antibiotic.

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