In this month's *Bulletin*

Let the children see

Nearly one and a half million children in the world today are blind, about 75% of them in the poorest countries of Africa and Asia. In fact, as Gilbert & Foster (pp. 227–232) point out, the prevalence of blindness can be as much as five times as great in the poorer countries as in the richer ones. In contrast to blindness in the elderly, blindness in children can mean an entire lifetime of sightlessness. Moreover, many causes of blindness in children — vitamin A deficiency, measles, rubella, meningitis, prematurity — also contribute to child mortality and are to a large extent preventable through vaccination and other health measures. These are two reasons why blindness in children is a priority target of WHO's "VISION 2020 — The Right to Sight" initiative, which aims to reduce the global prevalence rate of childhood blindness from 0.75 to 0.4 per 1000 children by the year 2020. The authors outline the obstacles to attaining this goal.

How blind is blind?

There are currently about 45 million blind people in the world and every year that number increases by 1–2 million. About 90% of the blind are in the developing world. In their examination of future trends in blindness over the next two decades, West & Sommer (pp. 244–248) note that with an expected increase in the world population from 6 billion to 7.9 billion over that period, the number of blind people will probably double. Efforts to combat preventable causes of blindness — among them, trachoma, onchocerciasis, xerophthalmia — have made remarkable inroads into the global prevalence of blindness. Unpreventable but often treatable age-related eye problems such as cataract, which affects about 10 million people, are set to escalate. One problem, the authors argue, is that we don't have a realistic estimate of the global burden of blindness. As a first step, WHO should revisit its 1979 definition of blindness (as "best corrected acuity less than 3/60 in the better eye"), which is based on largely agrarian, poor countries. In today's world of cars and computers, growing numbers of people cannot function properly at several levels above that threshold. Lowering it to 6/18, the authors propose, would give a truer gauge of the global prevalence of blindness.

For corneal blindness, prevention beats treatment

Damage to the cornea is, after cataract, the second commonest cause of blindness and is probably the most under-reported. It accounts for about 6–8 million of the 45 million cases of blindness in the world, vs an estimated 20 million for cataract. Unlike cataract, corneal blindness is not readily amenable to surgical treatment. The tragedy, according to Whitcher, Srinivasan, & Upadhyay (pp. 214–221), is that the bulk of blinding corneal damage — 4.9 million cases — is caused by trachoma, a largely preventable infection. In their wide-ranging review of the causes of corneal blindness, the authors draw attention to corneal ulceration due to the use, in some communities, notably in Africa, of traditional eye medicines. Public health resources should, the authors insist, be put into innovative programmes to bring corneal disease under control in both developing and industrialized countries.

Blindness, a grim concomitant of AIDS

Among the estimated 36 million people living with HIV/AIDS today, anywhere between one half and two-thirds are likely to suffer eye complications and one-tenth to one-fifth are likely to lose vision in one or both eyes. From a search of the epidemiological literature, Kestelyn & Cunningham (pp. 208–213) identify about a half-dozen causes of loss of vision in HIV/AIDS sufferers. Cytomegalovirus (CMV) retinitis appears to be the commonest. Until recently, it was more prevalent in the industrialized world than in the developing world, partly because HIV/AIDS patients in developing countries have tended not to survive long enough to develop ocular complications of their infection. More recently, introduction of routine triple antiretroviral therapy in Europe and North America plus the availability of effective anti-CMV medications have combined to lower the prevalence of CMV retinitis in the industrialized world. In the developing countries, however, as antiretroviral therapy becomes more widely available there could be an increase in life expectancy and, with it, in the chances of HIV/AIDS patients developing ocular complications. For this reason, say the authors, if effective anti-CMV medication is not made widely available to these patients in developing countries, the result could be "an epidemic of blinding CVM-related blindness".

The right to the right spectacles

Too many people in the world are blind or near-blind because their "refractive error" — short-sightedness, long-sightedness or astigmatism, to name the three best-known errors — has not been corrected, either at all or with suitable glasses, contact lenses or surgery. This is the conclusion of a review by Dandona & Dandona (pp. 237–243) of population-based surveys carried out in nine countries: Australia, China, Ethiopia, India, Lebanon, Pakistan, Tunisia, Turkey and the United States. Prevalence of blindness from refractive error ranged from 0.04% to 0.40% in the populations studied. One reason why refractive error has historically been underestimated as a cause of blindness, according to the authors, is that the International Classification of Diseases defines blindness on the basis of the best *distance* visual acuity that can be achieved through use of an appropriate corrective lens placed at the time of testing in the patient's better eye. This definition prevents detection of blindness due to refractive error. Basing a diagnosis of blindness on the *actual* visual acuity *presented* by the patient (with the patient's usual corrective device, if he or she has one) would vastly increase the number of patients diagnosed as blind due to inadequate or no correction of their refractive error and would make refractive error the second commonest cause of treatable blindness after cataract.

Blindness, through WHO's eyes

WHO's work on preventing blindness began just two years after the organization was set up in 1948. The focus then, as Resnikoff & Pararajasegaram recall (pp. 222–226) in a historical review, was on trachoma. Twenty-five years later, with the creation of the International Agency for the Prevention of Blindness, thanks largely to WHO prodding, the focus widened to include onchocerciasis (also known as "river blindness"), xerophthalmia (due to vitamin A deficiency) and cataract. By the mid-1980s more than 50 countries had signed onto the international blindness prevention movement and before the close of the century that number had more than doubled. The authors outline WHO's recent efforts to quantify the global burden of blindness and visual impairment. They end with a look to the future and the hopes they place in WHO's "VISION 2020" initiative set up in 1999 to "give all people in the world ... the right to sight" within the next two decades. ■