

Summary of the Seventh Meeting of the ITFDE (II) January 19, 2005

The Seventh Meeting of the International Task Force for Disease Eradication (ITFDE) was convened at The Carter Center from 9:00am to 3:30pm on January 19, 2005. The Task Force reviewed the prospects for control of trachoma, under the global initiative to “eliminate” blinding trachoma.

The Task Force members are Sir George Alleyne, Pan American Health Organization (PAHO); Dr. Pascal Villeneuve, UNICEF; Dr. Robert Hecht, The World Bank; Dr. Julie Gerberding, Centers for Disease Control and Prevention (CDC); Dr. David Heymann, World Health Organization (WHO); Dr. Donald Hopkins, The Carter Center; Dr. Adetokunbo Lucas, Nigeria; Professor David Molyneux, Liverpool School of Tropical Medicine; Dr. Mark Rosenberg, Task Force for Child Survival and Development; Dr. Harrison Spencer, Association of Schools of Public Health; Dr. Dyann Wirth, Harvard School of Public Health, and Dr. Yoichi Yamagata, Japan International Cooperation Agency (JICA). Seven of the Task Force members (Alleyne, Hopkins, Lucas, Molyneux, Rosenberg, Spencer, Yamagata) attended this meeting, and three others were represented by alternates (Dr. John Douglas for Gerberding, Dr. Olusoji Adeyi for Hecht, Dr. Kayode Oyegbite for Villeneuve).

Trachoma Control

The presentations on trachoma were given by Dr. David Mabey of the London School of Tropical Medicine and Hygiene; Drs. Jacob Kumaresan and Amos Sam-Abbenyi of the International Trachoma Initiative; Dr. Thomas Lietman of the Proctor Foundation/University of California at San Francisco, and Dr. Paul Emerson of The Carter Center.

Trachoma is a bacterial disease caused by repeated ocular infection with specific serovars (A,B,Ba,C) of *Chlamydia trachomatis*. The repeated infections cause scarring of the conjunctivae, resulting in the eyelids turning inward, and the eyelashes then scraping the cornea. If not corrected, the painful abrading of the cornea can eventually cause blindness by scarring the cornea (trichiasis, TT). The infection is transmitted from person to person by contaminated hands, and indirectly by contaminated cloth or flies. Active disease (intense or follicular trachoma, TI, TF) is most commonly seen in young children (especially 1-9 years old); while the blinding sequelae are commonest in adults. Adult women are three times more likely than men to be blinded by trachoma. Trachoma has no animal reservoir, but other serovars of *Chlamydia trachomatis* are widespread in humans.

Current estimates are that over 500 million persons are at risk of trachoma, about 150 million have active infections, about 7-10 million are in imminent danger of becoming

blind, and as many as 6 million persons are already blind from trachoma. Most infected persons live in sporadically distributed endemic clusters in poor arid areas of Africa, Asia and pockets of South America and Australia. Almost no data are available on the prevalence of trachoma in China and India. North America and Europe are essentially trachoma-free.

The previous ITFDE concluded in 1993 that “it appears scientifically feasible to eliminate blindness caused by trachoma—but not the infection or agent itself—by a combination of community-based education to promote face washing and targeted antibiotic treatment.”

Since 1997, the World Health Organization (WHO) has recommended use of the “SAFE Strategy” (Surgery to correct trichiasis, Antibiotics to treat active infections and prevent transmission, Face washing and Environmental improvement to reduce flies and prevent transmission) in a comprehensive approach to produce immediate impact and sustainable barriers to further transmission and resurgence. Although evidence of the efficacy of the S and A components of the SAFE Strategy is stronger, there is also evidence to support the efficacy of the F and E components as well.¹ In 1996, WHO established an Alliance for the Global Elimination of Blinding Trachoma by 2020, and the World Health Assembly adopted a resolution (WHA51.11) on blinding trachoma in 1998. Global efforts to help endemic countries implement the strategy have been boosted since 1998 by Pfizer Inc.’s decision to donate the antibiotic Zithromax™ (azithromycin) for use as part of the SAFE strategy, and to establish and fund (with Edna McConnell Clark Foundation) the International Trachoma Initiative (ITI) to oversee donations of the drug.

The ITI is currently supporting efforts to control trachoma in 11 countries and expects to add two more in 2005 (of about 55 countries affected by trachoma), including the moderately endemic countries of Morocco, and Vietnam, and hyperendemic Tanzania. The program in Morocco has covered all five endemic districts since 2000; Vietnam will reach all of its endemic districts in 2005, and Tanzania by 2008. At the end of 2004, Tanzania’s program extended to 20 of its 50 endemic districts. Morocco has reduced active disease in children by over 90% since 1997 in an at risk population of 680,000. Tanzania distributed 1.1 million doses of azithromycin in January-September 2004, in at risk population of about 12 million, whereas Vietnam treated 306,000 persons with antibiotics, extended health education to 1.4 million of its at risk population of about 12 million in 2004, and increased the rate of clean faces in children from 65% to 80% since its program began in 199. The importance of strong political commitment and mobilization of local communities are the most salient lessons from Morocco.

¹ Emerson PM, Cairncross S, Bailey RL, Mabey DCW, 2000. Review of the evidence base for the “F” and “E” components of the SAFE strategy for trachoma control. *Trop Med Intl Hlth* 5: 515–527.

Prüss A, Mariotti SP, 2000. Preventing trachoma through environmental sanitation: a review of the evidence base. *Bull World Hlth Organ* 78: 258–66

Kupfer H, Solomon AW, Buchan J, Zondervan M, Foster A, Mabey D, 2003. A critical review of the SAFE strategy for the prevention of blinding trachoma. *Lancet Infec Dis* 3: 372–381.

Niger and Ethiopia, which are being assisted by The Carter Center and other nongovernmental organizations (NGOs), including the ITI, are two of the most highly endemic countries for trachoma. About 11.1 million persons are at risk in Niger, national prevalence of active trachoma in 0-9 year old children is 36%, and prevalence of trichiasis in women 15 years or older is almost 2%. Niger's program currently covers three of six regions that exceed WHO thresholds for defining trachoma as a "public health problem," but the full SAFE strategy is being implemented in only two districts of one region. The surgical backlog for TT surgeries is estimated at 102,000 cases, with annual incidence of 12,000 cases. About 3,500 persons received TT surgery in 2003, and 2 million doses of azithromycin were distributed in one region in 2003. Niger aims to have 80% of children with clean faces, build 50,000 latrines (0.8-1.2 million needed), and increase coverage with water supply from 56% to 75% by 2009.

Most of Ethiopia's population of about 70 million persons, 85% of whom live in rural areas, is believed to be at risk of trachoma. No national prevalence data are yet available, but in Amhara Region about 88% of children are infected, and trichiasis rates in persons 15 years and older range from 2.5 to 7.1 %. Ethiopia's program now covers about 20% of its affected districts, and the full SAFE Strategy is being implemented in part of all of those districts. Ethiopia aims to have 35% of children with clean faces by 2009 (baseline ~5%), increase latrine coverage to 25% (nearly 90,000 latrines were reportedly built in one region in 2004), and increase water coverage to 40% by 2009. The surgical backlog is estimated at 952,000 persons, with an annual incidence of 20,000. Over 30,000 persons received trichiasis surgery in 2004. About 1.2 million persons at risk received azithromycin treatment in 2004, and the goal is to expand that to 3.8 million doses in 2005 and 32 million doses by 2009.

Much is still not known about trachoma, including its geographical extent and the pathophysiological processes that lead to inflammation and scarring. For example, what is the relationship between the load of chlamydial infection and clinical signs of "active" infection (TF/TI); or between prevalence and the intensity of infection in a given location? What determines which infections progress and which ones heal? What are the relative contributions and costs of the different interventions to control and to sustaining the control of trachoma? What is the optimal rationale, frequency, duration and targeting of mass drug administration for trachoma (e.g., infected villages only)? How can the low uptake of TT surgery be improved?

The question was raised as to whether focusing on implementing only the S and A components to control trachoma would be more cost-effective than trying to implement all four components of the recommended strategy. (Previous experiences with resurgence of yaws after mass chemotherapy alone would suggest caution.) In some areas (e.g., Nepal), widespread use of antibiotics for other reasons that have nothing to do with trachoma (and perhaps other factors as well) has led to significant declining trends in trachoma without any specific program aimed at the disease. Antibiotic resistance emerging as a result of mass distribution of azithromycin has not been seen yet, but it is not being systematically monitored, either. Assessing clinical signs of trachoma alone is not enough, but there is currently no rapid, simple, inexpensive test for the infection.

Much discussion concerned the need to fill these gaps in our knowledge and strengthen the evidence base, while moving to scale up interventions. A cumulative total of about 17 million antibiotic treatments with Zithromax were provided between 1998 and September 2004, but the total number of active cases is estimated at 84 million persons. It was suggested that the global effort should focus first on the most highly endemic areas, to the extent that they are already known. In addition to learning from the global campaigns to eradicate polio and eliminate lymphatic filariasis, the trachoma initiative could also learn from the efforts to control onchocerciasis (e.g., mass drug administration) and to eradicate dracunculiasis (e.g., village-based health education to promote changes in behavior, advocacy for water supplies) in Africa. There are some potential synergies between components of the SAFE Strategy and other interventions associated with other programs, for example integration of mass drug administration and possibly health education.

Conclusion and Recommendations

1. Trachoma cannot be eradicated, but blinding trachoma can be eliminated. That distinction is important and it should be stressed that the current global initiative is targeting blinding trachoma (GEBT 2020), not trachoma itself.
2. The global initiative has made significant progress to date, and should be congratulated.
3. Although much remains to be done to achieve the goal set for 2020, enough is already known to provide the basis for beginning to extend existing interventions to the most endemic areas as quickly as possible, while working to refine and expand the evidence base for interventions.
4. Surveys and other work are needed urgently in order to better understand the full geographic extent and clinical burden of trachoma. This should be given very high priority.
5. There is need to standardize a simplified method for obtaining accurate prevalence data rapidly and cheaply—a rapid assessment methodology.
6. Priority should also be given to developing a reliable, rapid, simple, and inexpensive diagnostic test for ocular chlamydial infection.
7. The optimal frequency, targeting and strategy for antibiotic treatment need to be investigated further and defined.
8. Ways to improve the low uptake rate for trichiasis surgery and to reduce the rate of recurrence after surgery need to be pursued.
9. More documentation is needed about the relative costs and comparative efficacy of each element of the SAFE strategy.
10. Targeted research is needed into sociological aspects of trachoma, its prevention, and treatment.

11. The expected costs of eliminating blinding trachoma by 2020 need to be estimated.
12. A vaccine for preventing blinding trachoma is unlikely to become available in any timeframe relevant to this initiative.