



## OCULAR CONSIDERATIONS IN DISASTER RELIEF

Blindness is the unfortunate result of the ocular diseases and injuries that frequently accompany natural disasters or civil unrest. The purpose of this brochure is to assist individuals and agencies who are responding to disaster situations, defined as events which place populations at risk for higher than normal rates of ocular morbidity and blindness.



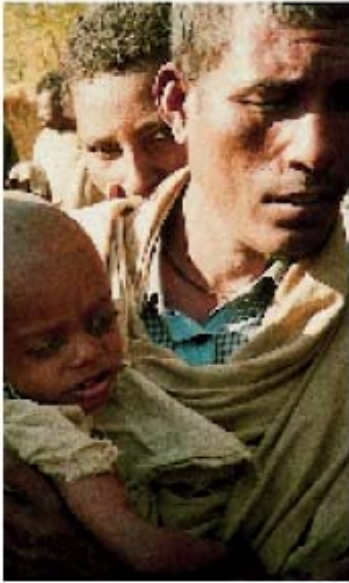


Photo by Jane Purnell, MD, Medical Director, IRI

*While the range of disaster scenarios is broad and the type of ocular involvement varies, a strategy for organizing a response to these unexpected situations might be summarized as the three A's: Assessment, Appropriate response and Analysis.*

## ASSESSMENT

Determine the presence and extent of potentially blinding conditions. Reports of health personnel initially screening the population are usually sufficient to indicate a problem. It is crucial to determine if there is a risk of vision loss without immediate intervention (1 to 7 days). Examples of situations requiring immediate response are:

■ **Nutritional.** Populations, particularly children under ten, are at risk for nutritional deficiencies because of famine or civil unrest. Vitamin A deficiency in children has been a major cause of blindness several

times in recent memory. Any time malnourished children are identified, vitamin A deficiency can be presumed to occur.

■ **Traumatic.** Injuries associated with war and civil strife may result in blindness.

■ **Industrial.** Accidents, usually involving a toxic exposure may cause blindness.

To assist with assessment, local ophthalmologists could be contacted to diagnose and initiate treatment programs. Small scale, rapid population-based surveys can indicate the extent of eye disease. Local competence in surgical intervention should also be determined.



## APPROPRIATE RESPONSE

Depending on the nature of the disaster, various supplies will be needed. Vitamin A in 200,000 unit capsules is available from a number of sources including UNICEF and UNHCR. Sutures, antibiotics and surgical equipment can be obtained through local or international nongovernmental organizations (NGOs).

Local personnel can be augmented by ophthalmologists from other nations who can provide immediate care, as well as train qualified indigenous health care professionals.

## ANALYSIS

It is important to develop a system of monitoring the impact of the disaster and the response to it. Daily or weekly rates of incidence, or new cases, are a good way to chart the evolution of the

disaster. In addition, simplified surgical reporting forms should be kept and the data analyzed on a regular basis.

## EXAMPLES OF APPROPRIATE RESPONSES

### NUTRITIONAL

Nutritional disasters place children and mothers at high risk for immediate blindness. Guidelines developed by WHO and UNICEF are:

- Provision of 200,000 units of Vitamin A to all children one to ten years of age immediately and then every four months. (Use half this dose for children under one year of age.)
- Identification of children with active xerophthalmia including night blindness or any child with measles with provision of an additional 200,000 unit dose of vitamin A the next day and a third dose one

week later. (Use half this dose for children under one year of age.)

- Hospitalization, if possible, for children with keratomalacia, or softening of the cornea. Keratomalacia is a life threatening, as well as potentially blinding condition which responds to nutritional rehabilitation.

### TRAUMA

Eye injuries are often associated with war or civil strife. Blindness can result from injuries to the anterior (front or corneal segment) of the eye or posterior (rear or retinal segment). The treatment must be immediate.

The initial assessment should include the level of experience of local ophthalmologists and the available facilities, especially with regard to power, water, surgical equipment and cover from artillery and small arms fire. The

availability of patient evacuation should also be considered.

Perhaps the most significant service a vitreoretinal or anterior segment surgeon can provide in a disaster is triage. Patients need to be categorized as to whether they need to be treated expectantly, locally or would benefit from evacuation and treatment in another place.



## TRAINING

Training curricula in basic ophthalmic care for nurses and physicians should include the treatment of chemical and thermal injury, corneal abrasion and foreign body removal, conjunctivitis and blunt trauma.

Advanced training for ophthalmologists and physicians should consist of treatment of intraocular foreign body, corneoscleral lacerations, keratoplasty techniques, traumatic cataract, the repair of retinal tear/detachment and vitrectomy techniques.

## LONGER TERM NEEDS OF DISPLACED PEOPLE

Displaced populations living in camps or other intermediate sites have special needs with regard to ocular disease.

These people may be exposed to infectious diseases found in their new circumstance. In particular, the primary health workers treating transitional populations need to be aware of the appropriate preventive regimens for ocular diseases like trachoma and onchocerciasis. Additionally, treatment of minor trauma and blinding conditions like cataract and leprosy become increasingly important. These protocols are outlined in the publications listed below. They can be obtained from the World Health Organization, Programme for the Prevention of Blindness, Distribution & Sales, Avenue Appia, 1211 Geneva 27, Switzerland. Telephone: 41-22-791-2697 Fax: 41-22-791-0746

*Management of Cataract in Primary Health Care Services, 1990.*

*Prevention of Blindness in Leprosy, 1988.*

*Trachoma Control Manuals (3), 1995.*

*Field Guide to the Prevention and Control of Xerophthalmia, 1991.*



Photo provided by M. Steffell

