



## Matching blindness elimination efforts to health-seeking behavior

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**B**lindness is an overwhelming medical issue and a severe socioeconomic problem in the developing world. Within the borders of impoverished nations reside ninety percent of the world's thirty-seven million blind. The World Health Organization (WHO) estimates that seventy-five percent of these cases are avoidable.<sup>1</sup> Cataracts, for example, which account for fifty percent of the world's blindness, can be completely reversed by a very cost-effective procedure. Other significant causes of blindness such as trachoma, vitamin A deficiency, and onchocerciasis (river blindness) can be eliminated by available and effective treatment and prevention measures.

Both private and governmental organizations have risen to the challenge of confronting this crisis, but there is significant and continuing debate over the best way to allocate resources to prevent and treat blindness in the developing world. Meanwhile, affected individuals must choose from a spectrum of competing health systems, ranging from traditional healers to international medical services, with each system having its own pros and cons. Further, provision of resources does not necessarily translate into their actual use by those who would benefit from them. Thus, in deciding how to deliver aid, organizations must also carefully consider whether it will be effectively used.



Synergy between traditional and modern healers?

A fundamental synergy should be established between commonly used resources and those being newly introduced. Well-exploited services can serve to introduce new health care options. In particular, traditional medicine, the most widely available form of health care in Africa, could fill this role. Understanding the basis of traditional practices and how they are used by patients is essential to evaluate their potential utility for future aid efforts from abroad.

As an important part of an indigenous culture, traditional healers understand the cultural milieu of their patients, and they are thus much more effective in the treatment of the emotional and psychological components of illness. Joseph Bastien tell us:

The Aymara and Quechua Indians of the Andes prefer to deal with illnesses in a symbolic manner so as to make them enduring and acceptable. Although some doctors equate this with ignorance, it is clear that diviners use symbols and rituals as adaptive mechanisms enabling people to cope with ill-health, and that ethnomedical practitioners can handle complex behavioural and social problems.<sup>2p133</sup>

In rural communities, where traditional practices predominate, healers can bring immense comfort to their patients, and are in turn well respected.<sup>3</sup>

Many traditional healing techniques have a religious or supernatural basis. Depending on the specific belief system, spiritually-oriented healers might attribute illness to the work of sorcerers, violations of social order, or the anger of gods or ancestors. Treatment recommendations from these healers may involve the confession of sins, the use of amulets, or the performance of animal sacrifices. Many traditional healers also rely heavily on herbal medicines, as well as both face washes and steam baths.<sup>4</sup>



The Sitapur Eye Hospital in Sitapur, India. Up to 200 patients a day are treated for cataracts at operating stations while lying on gurneys in an “assembly-line” format. WHO photo by T. S. Satyan. Courtesy of the National Library of Medicine.

Many valid reports implicate herbal treatment as a direct cause of ocular morbidity. According to V. Klauss and H. S. Adala, traditional healers may judge a medicine’s power by how much irritation and pain it causes.<sup>4</sup> They observe:

In cases of trachoma, one healer used the rough leaves of *Cordia sinensis* to rub the tarsal conjunctiva until it bled. Another chewed the leaves of *Boscia coreacea*, and the juice obtained, including saliva, was applied into the conjunctival sac. The sap of some plants was instilled directly, or after heating, into the conjunctival sac, a procedure causing irritation, pain and possibly chemical burns.<sup>4p141</sup>

Another report by Harjinder S. Chana and his coworkers notes the application of hot fluids, human urine, alkaline powders, excreta of cattle and lizards, and organic fuels to the eye’s surface for the treatment of eye disease.<sup>3</sup> Clearly, some traditional eye care methods may actually result in more harm than good.

Although healers self-report success rates at fifty to one hundred percent,<sup>4</sup> the validity of such statistics has not been investigated and few controlled studies on herbal therapies have been conducted. Traditional healers rarely reveal the

herbs they use because such information is considered a family secret. F. Staugard perceptively points out that

Behind the majority of the seemingly “irrational[.]” conceptions are centuries of popular empiricism, filtered through a process of “trial and error,” which in its own right is as valid in many instances as our modern “scientific” approach.<sup>5p62</sup>



#### Fears of eye damage and death

How a sick individual behaves when presented with choices in a culture of medical pluralism has implications for how to provide the most effectual aid. In many cases, a counterintuitive pattern of non-use of medical treatment exists that must be understood to design effective aid programs. Bradford Gray cites reports from African eye camps that “as few as one in twenty people who might benefit from cataract surgery come for treatment when it is available.”<sup>6p540</sup> Of 749 adults with eye problems in rural India, only 6.8 percent attended outreach eye camps established near the villages studied.<sup>7</sup> Even among patients for whom cataract surgery was specifically



**By and about the author**

I was born in Washington, DC, in 1981. In 2004, I received a BS in biochemistry from the University of Rochester, and matriculated in the Chicago Medical School later that year. Currently, I am interested in pursuing a career in academic medicine. Although I have no personal experience with blindness, I can vividly imagine the isolation and strain it must impose. It is my hope through this essay to increase awareness of these issues, and to encourage critical thought that may facilitate the magnificent efforts currently underway.

recommended, 35.5 percent did not attend the eye camps. More than one-third of the patients cited fears of both eye damage and death for not attending the camps. A comparable proportion (33.3 percent) of cataract patients in Nepal also said fear was a major reason for not taking advantage of offered surgery.<sup>8</sup> In a population for whom logistical and economic constraints were said to be major reasons for refusing treatment, fewer than 60 percent underwent surgery when both transportation and treatment were offered free of charge.<sup>8</sup> The authors of this Nepal study speculate that one reason for the high cataract prevalence in Nepal might be poor utilization of available services. Clearly, the simple provision of trained personnel does not translate into a successful intervention.

Other reasons have been proposed for non-use of medical services. For example, a “hair white, eyes white” acceptance exists in many African communities.<sup>6p540–41</sup> Cataracts are thus seen as something that accompanies normal aging, and not a problem to be corrected. Additionally,

Some religious beliefs hold that the blind in this life will have vision in the next life. . . . There may also be issues of intergenerational power: adult offspring may welcome the independence gained when a parent becomes blind.<sup>6p541</sup>

Mansur Rabi, in yet another study of barriers to surgery in Nigeria, indicated that 18.8 percent of people with cataracts do not seek help because they “can see with the other eye,”<sup>9p778</sup> a response common in the United States.

As well, most traditional healers are unaware that a therapy for cataracts exists. Even those who say that they have heard of the possibility of operations for cataracts do not fully understand the procedure’s beneficial implications, and thus do not refer patients to the clinics.<sup>10</sup>



**One eye doctor for each million people**

An insightful study of decision making comes from an

evaluation of illness behavior in the Ivory Coast.<sup>11</sup> Judith N. Lasker found that the use of Western versus traditional medicine is independent of education level and cultural belief, and that the more educated a person is, the more likely he or she is to use a variety of different services, including both traditional and Western practices. When asked the reasons for their decisions in selecting which type of health care to seek, forty-six percent of people claimed that they made a thoughtful judgment as to which system might be the most effective, based on their specific problem.

Lasker identifies accessibility as the most significant determinant of decisions between health care alternatives, broken down into the components of distance, cost, and communication. As shown in the Nepal study noted above, even when distance and cost were addressed, communication remained a considerable barrier. More effective communication might ease a patient’s fears and misconceptions about eye surgery.

The developing world has only one ophthalmologist per one million people. In addition, the costs and logistics of care—including specialized tests and multiple visits—may make seeking treatment so burdensome as to be impossible. Allen Foster and Gordon Johnson conclude:

It is therefore not surprising that people choose to go to the traditional healer when they have eye problems. Traditional healers are accessible, the treatment is usually affordable, and they communicate well at a psychosocial level with the patient. All of which provide consumer satisfaction in relation to non-clinical care, and outweigh the benefits of better clinical care but poorer non-clinical care in the Western hospitals.<sup>12p807</sup>

In the same vein, Lasker comments,

With all of these complaints and difficulties in obtaining appropriate medical care, it should not be surprising if people hesitate to rely on Western medicine. In fact, one might marvel at the extent to which they do rely on it.<sup>11p162</sup>



**Training traditional healers works!**

Because traditional healers are so interwoven into the health care environment of developing nations, every effort should be made to integrate them into proposed aid programs, and to educate them about the dangers associated with some of their practices. This strategy has been attempted many times, and has at times been extremely successful. Wilbur Hoff reported overwhelmingly positive results in a review of training programs in thirteen countries focusing on educating traditional healers.<sup>13</sup> These programs consistently resulted in “a high degree of acceptance of trained healers by communities,”<sup>13p184</sup> and directly translated into improved health practices in these communities.

A. K. Poudyal and coworkers evaluated specific outcome measures after the training of traditional healers in several districts of Nepal.<sup>14</sup> Whereas before training, seventy-two percent of healers used traditional eye medicine, only five percent continued to use them afterwards. The healers became much more knowledgeable about common ocular illnesses. For example, knowledge about cataracts among healers increased from fifty-six percent to ninety-seven percent, and their knowledge of the signs and symptoms of cataracts increased significantly. Finally, after training, traditional healers were much more likely to refer eye patients to district eye care facilities. The results of this study are very encouraging. This will surely have a lasting impact on the communities in which the training took place.

A case study by E. E. Sutter and R. C. Ballard introduces an important concept with regard to the integration of Western and traditional health systems—community participation and mutual referral.<sup>15</sup> The paper describes a community effort to prevent trachoma in Gazankulu, a rural area of South Africa. Villagers were educated on preventive measures, and taught to recognize symptoms. They thus knew when to refer the patient to a hospital to prevent worsening of the condition. Most importantly, this referral process was reciprocal, with messages being sent back to the community to guide care and screening of the families of the infected. Mutual referral fueled by mutual respect founded the success of a culturally diverse health care team.

The integration of traditional healers into Western-style medical care is potentially a powerful tool in delivering health care in many developing-world cultural settings because such healers are accepted in their communities. Healers are very effective in recognizing symptoms and differentiating among many conditions. They not only welcome outside training, but are quick to integrate Western techniques into their practices.<sup>16</sup> They may play a role in screening patients, so those who require hospital care will realize it sooner. For those who have fallen ill, they instill hope and encourage mental well-being. These factors lead to trust and action on treatment recommendations. This approach may also have implications for preventive strategies—traditional healers could act as advocates for personal hygiene and community sanitation efforts. Compliance with antibiotic regimens and vitamin supplementations may be overseen by traditional healers as well. For conditions such as cataracts that require surgery, the situation is more complex. But traditional healers can help to improve the utilization of services by educating prospective patients.



Vision 2000: The Right to Sight

Many private voluntary organizations from across the globe work to counter avoidable blindness. A number of

fundamental disputes have arisen about how to approach the problem of cataract blindness, one of which—that of self-sufficiency versus dependency—led to more than three hundred volunteer ophthalmologists being turned away by the International Council of Ophthalmology in 1989.<sup>6</sup>

In 1999, the WHO and the International Agency for Prevention of Blindness collaborated to launch Vision 2020: The Right to Sight (V2020). Its goal is the elimination of avoidable blindness by the year 2020. An update report was released on October 13, 2005.<sup>17</sup> In contrast to the rejected 1989 plan, sustainability is a guiding principle of V2020. Furthermore, V2020 acknowledges that a “high standard of care” should be provided.<sup>17p14</sup> Intraocular lens factories have been built in Eritrea and Nepal, establishing a consistent and quality source of lenses and reducing worldwide market prices. Profits from these factories are cycled back to the laboratories and local blindness prevention efforts.

The limited availability of trained personnel remains an obstacle to increasing cataract surgical rates. One provocative solution has been provided by the National Eye Care Programme in Gambia. Here,

principal innovations of the programme were the extensive use of non-doctors trained as cataract surgeons, and the strong emphasis on community eye health.<sup>17p43</sup>

With appropriate quality control, this may flourish into a wonderful expansion of the number of cataract surgeons. An emphasis on training is essential to sustainability, and a current objective of V2020 is to train more doctors and surgeons to perform cataract operations.

The V2020 report acknowledges that barriers to uptake of cataract surgery exist, but focuses only on the so-called tangible aspects of this problem, ignoring some of the barriers discussed here. And despite a reduction of 2.4 million from 1995, the prevalence of blindness due to cataracts in 2002 was still 2.6 million above what it was projected to have been in 2000. Perhaps a more thorough consideration of these problems will help V2020 better meet its projected goals for reducing the prevalence of cataract blindness.

In this struggle to eliminate avoidable blindness, the integration of aid efforts with traditional medical services and practitioners gives the promise for significant advances. Improvements will be seen in both aggregate numerical success and quality of care for individuals. Numerical reduction in blindness will result from an increased uptake of cataract surgery, as fewer harmful eye treatments will be practiced and more decisive referrals will be made. In the setting of high-volume aid delivery, traditional healers provide emotional support and guidance within the context of cultural beliefs. With the vision of over thirty million individuals in the balance, these opportunities for progress simply cannot be ignored.

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### References

1. World Health Organization. Magnitude and causes of visual impairment. [www.who.int/mediacentre/factsheets/fs282/en](http://www.who.int/mediacentre/factsheets/fs282/en).
2. Bastien JW. Collaboration of doctors and nurses with ethno-medical practitioners. *World Health Forum* 1994; 15: 133–37.
3. Chana HS, Schwab L, Foster A. With an eye to good practice: Traditional healers in rural communities. *World Health Forum* 1994; 15: 144–46.
4. Klauss V, Adala HS. Traditional herbal eye medicine in Kenya. *World Health Forum* 1994; 15: 138–43.
5. Staugard F. The epidemiology of beliefs and practices. *Botswana Natl Health Bull* 1985; 1: 61–75.
6. Gray BH. World blindness and the medical profession: Conflicting medical cultures and the ethical dilemmas of helping. *Milbank Q* 1992; 70: 535–56.
7. Fletcher AE, Donoghue M, Devavaram J, et al. Low uptake of eye services in rural India: A challenge for programs of blindness prevention. *Arch Ophthalmol* 1999; 117: 1393–99.
8. Snellingen T, Shrestha BR, Gharti MP, et al. Socioeconomic barriers to cataract surgery in Nepal: The south Asian cataract management study. *Br J Ophthalmol* 1998; 82: 1424–28.
9. Rabiu MM. Cataract blindness and barriers to uptake of cataract surgery in a rural community of northern Nigeria. *Br J Ophthalmol* 2001; 85: 776–80.
10. Kimani V, Klauss V. The role of traditional medicine in ophthalmology in Kenya. *Soc Sci Med* 1983; 17: 1827–30.
11. Lasker JN. Choosing among therapies: Illness behavior in the Ivory Coast. *Soc Sci Med* 1981; 15A: 157–68.
12. Foster A, Johnson GG. Traditional eye medicines—good or bad news? *Br J Ophthalmol* 1994; 78: 807.
13. Hoff W. Traditional healers and community health. *World Health Forum* 1992; 13: 182–87.
14. Poudyal AK, Jimba M, Poudyal BK, Wakai S. Traditional healers' roles on eye care services in Nepal. *Br J Ophthalmol* 2005; 89: 1250–53.
15. Sutter EE, Ballard RC. Community participation in the control of trachoma in Gazankulu. *Soc Sci Med* 1983; 17: 1813–17.
16. Courtright P, Lewallen S, Kannjaloti S, Divala DJ. Traditional eye medicine use among patients with corneal disease in rural Malawi. *Br J Ophthalmol* 1994; 78: 810–12.
17. World Health Organization, International Agency for the Prevention of Blindness. *State of the world's sight: Vision 2020: the Right to Sight: 1999–2005*. Geneva (Switzerland): World Health Organization; 2005. [www.v2020.org/world\\_sight\\_day/index.asp](http://www.v2020.org/world_sight_day/index.asp).

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### The Eye Plane

Cataract surgeons from industrialized countries have helped scores of people in developing countries see again, and train more and more locally-based ophthalmologists to do the surgery. The following excerpts are from a paper by Walter J. Kahn, MD, published in the *Bulletin of the American College of Surgeons* (2002; 87: 13–16), and are reproduced with permission of the author.

### *Surgeon takes flight to deliver improved sight worldwide*

ORBIS is a not-for-profit humanitarian organization dedicated to saving sight worldwide through health education and hands-on training for ophthalmologists, nurses, and allied health practitioners.

David Paton, MD, FACS, a Houston ophthalmologist, conceived the idea of an airborne ophthalmological teaching hospital in the mid-1970s. He wanted to bring American skills and expertise in ophthalmology to help personnel in developing countries.

ORBIS was founded in 1982 with a grant from USAID and a DC-8, donated by United Airlines. Since then, ORBIS has carried out more than four hundred forty programs, both on and off the plane, in 80 countries and has trained more than fifty thousand ophthalmologists, nurses, biomedical engineers, and related health care workers who, in turn, provide treatment and training in underserved countries. ORBIS is headquartered in New York, NY, and has international affiliates in Canada, Hong Kong, England, and France.

The ORBIS teaching facility is currently a DC-10 that was purchased for ORBIS in the early 1990s by A. L. Ueltschi (who founded Flight Safety International and who started his career as the personal pilot of Pan Am founder Juan Trippe), Y. C. Ho (a Hong Kong businessman), and an anonymous donor. The DC-10 houses a state-of-the-art operating room staffed by trained nurses and anesthesiologists, and also contains a fully staffed recovery room, laser facility, conference room, audiovisual equipment, satellite communications center, surgical instrument room, and a sterilization facility with its own water-purification system.

This “flying eye hospital” spends 90 percent of its time in developing countries, home to most of the world's blind people.

Each mission carried out by ORBIS is tailored to a particular region by an advance team, which coordinates with the host country months before we arrive.

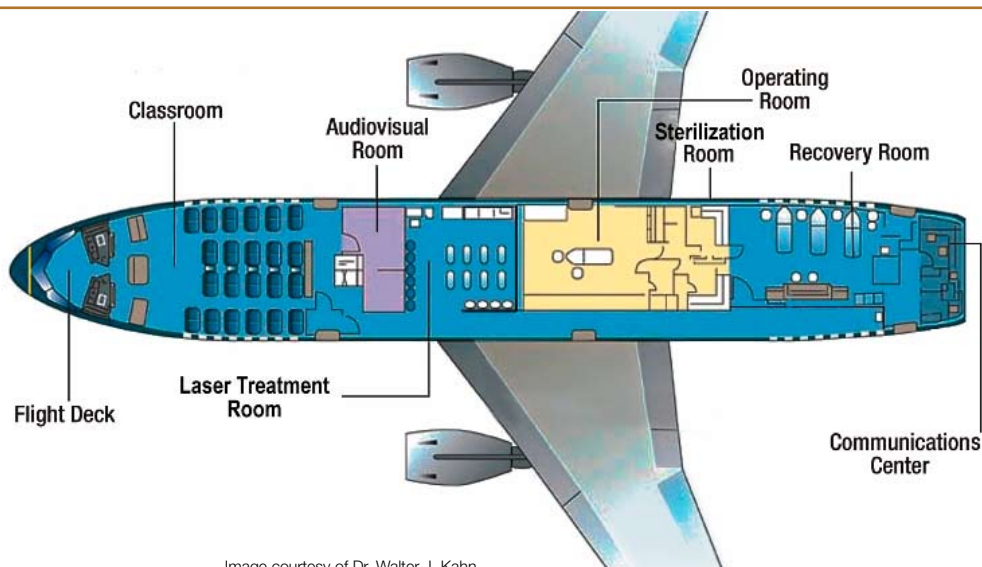


Image courtesy of Dr. Walter J. Kahn.

A follow-up team monitors the status of the patients after we leave.

On these excursions, I typically have been part of a two-to-three-person group of visiting faculty, my specialty being cornea and cataract surgery. Other subspecialists represented in ORBIS include retina, glaucoma, pediatric, and oculoplastic surgeons. Each of us spends one intense week per year demonstrating surgery and giving lectures on ophthalmic procedures.

Our first day is spent at the host hospital, screening patients for surgery. Even though the patients are “prescreened” by the host physicians, the line of people waiting for treatment may wind around the block in 120-degree heat, each person desiring to be treated in that big plane from the sky. The pressure during the selection process can be very emotional. Some patients wear their World War II medals or cite other significant facts about themselves in hopes of gaining favor. One patient I treated in Uzbekistan was a retired general and another was an ophthalmologist. We select the five or six cases each day with teaching potential as the top priority and need as secondary. Then, the anesthesiologist evaluates the surgical risk for the selected cases.

Each country presents its own special challenges. Some illnesses are prevalent in certain countries but have been virtually eliminated from the rest of the world. Onchocerciasis (river blindness), for instance, is a scourge in West Africa. Other countries pose unique situations for those of us from the West because of their cultural and religious views. Uzbekistan is a former Soviet republic that received its independence in 1991.

The population is sixty to seventy percent Muslim but not very religious. Nevertheless, Muslim faith prohibits eye banks, so on this trip, we had to bring donor corneas from the U.S.

The ORBIS DC-10 is parked on a ramp area in the airport where it is accessible to the surgeons and their patients. (The plane uses its auxiliary power unit to provide needed electrical energy and air conditioning.)

The program starts the following morning. We leave the hotel, usually with a police escort, promptly at 7:00 am and start the operations at 8:00 am, continuing non-stop until about 6:00 pm. All procedures are performed in slow motion with lots of interaction by the assistants and video audience. There are more than twenty video screens throughout the plane. At times, we also demonstrate at the local hospital to make the surgeons comfortable in their own setting with their equipment. In addition each of us gives ten to twelve lectures during the week.

On most missions we train a few hundred ophthalmologists. They and the patients continually express their gratitude in countless ways. We are well received by the host doctors and government officials.

Why do I look forward to these missions? Well, they give me a chance to do some good and offer a sense of adventure. And, it’s a relief to practice medicine using U.S. standards but without worry about government restrictions, payment policies, CPT codes, and the threat of litigation. My involvement with ORBIS makes me feel appreciated, and I get to be a real doctor again.

For more information about ORBIS, visit the organization’s Web site at [www.orbis.org](http://www.orbis.org).