Trachoma and Water

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Trachoma Prevalence 
and Transmission

There are four reasons why one might expect improvements in water supply 
to reduce the transmission of trachoma in a community.

1. Children’s faces are the sources and 
sites of re-infection with the organism, Chlamydia trachomatis, which causes 
the disease. Increased water availability means that faces can be cleaned more 
thoroughly and more frequently.

2. It also means that the objects which 
carry the organism between one person 
and another (such as fingers and bed 
clothes) can be kept cleaner and are less 
likely to be infected.

3. Trachoma is transmitted by flies (see the 
article in this Issue). If there is more 
water in a dry environment, including 
water spilt or thrown on the ground, this 
will provide alternative sources of moist 
ture to flies which would otherwise seek 
it on children’s faces.

4. Finally, the water supply helps people 
to maintain a cleaner domestic environ 
ment (for instance, by washing dishes 
rather than leaving them around with 
food remainsonthe m). The environment 
will be less attractive to flies.

Trachoma and Water Supplies

Certainly, trachoma is generally found in 
the more dry parts of the world, such as the 
Sahel, India, and the Australian interior 
where water is scarce. However, the rela 
tionship between water supplies and 
trachoma is sometimes more complex than it 
might seem, and the proof that water sup 
ply improvement can help to reduce trac 
choma can sometimes be difficult. One 
study from Ethiopia1 even found that peo 
ples living further than 15 minutes’ walk 
from a water source had less active trac 
choma than those with a source of water 
closer at hand.

Part of the explanation for such negative 
study results is that hygiene improvements 
do not follow automatically from the provi 
sion of a convenient water tap. If we study 
overall domestic water consumption as an 
indicator of hygiene and the time required 
to collect a bucket of water as an indicator 
of water availability, we find that the rela 
tionship between them takes a rather sur 
prising form (Fig. 1). The surprising part is where the water 

source is less than half an hour’s round trip 
away from the household. In general terms, a 
half hour round-trip water collection 
journey corresponds to a distance each way 
of about 1 km (walking at 4 km/h, with no 
queue at the tap). When the existing source 
is farther away than this, then a tap closer 
to the home can be expected to lead to an 
increase in consumption. However, when 
this level of availability has already been 
reached, bringing the water source closer 
to the door has practically no influence on 
water consumption, unless the water is pro 
vided in the yard or in the house.

This ‘water use plateau’ has been docu 
mented by studies in East, West and 
Southern Africa, Asia and Central 
America. It means, that for people who are 
already on the plateau, a water supply pro 
viding an in-house level of service will 
increase their water consumption, affect 
their hygiene and by implication reduce 
their level of trachoma. If house connec 
tions of water are not feasible or afford 
able, priority in distributing water supplies 
should go to those who are furthest from 
their water source, and farthest off the ‘edge’ of the plateau. That priority will help 
to ensure the maxi 
mum benefit in terms of eye health. Happily, it will also 
give the maximum benefit in terms of diurnal disease 
reduction and also 
save in the weary 
task of carrying 
water. Water sup 
plies which are 
good for health in general 
are also best for tra 
choma control.

In fact, both water 
and sanitation are 
good for trachoma 
control. A number of 
studies13 have 
found less trachoma 
in families with 
latrines. Latrines help to control the Musca 
soorb Lourenço flies which land on children’s 
faces, which may explain why they protect 
against trachoma.

The total amount of water people use 
gives only a crude indication of their 
hygiene. How the water is used determines 
whether it will help to control trachoma. 
For example, a study in The Gambia12 
found that the total quantity of water used 
by a household had no effect on the preva 
ence of active trachoma, but that trac 
choma-free households used more water 
for washing children than households with 
trachoma cases.

Trachoma and Health Education

This raises the possibility of using health 
education to encourage the use of water for 
specific hygiene purposes such as face 
washing. Health education is probably 
cheaper than building water supplies; even 
so, there are no specific resources in most 
poor countries for health education simply 
to prevent trachoma. On the other hand,
adding too many messages to an existing health education programme weakens its impact, so that health educators may be unwilling to add a trachoma message to an already overburdened programme.

One promising possibility is that hand-washing, which is increasingly promoted to prevent diarrhoeal diseases, may also help to prevent transmission of trachoma and other eye infections. Fingers have been considered an important means of transmission of trachoma for sixty years, and a field study from Indonesia has shown that an intervention to promote hand-washing could be successful in reducing not only diarrhoea but also eye infections. As with the water supply itself, this is an example of how good primary health care can help to prevent trachoma best when it also prevents other diseases.

References

Vision 2020: The Right to Sight

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Sixth General Assembly

The 6th General Assembly of IAPB was held at the Friendship Hotel, Beijing, People’s Republic of China, September 5-10, 1999. The meeting was co-sponsored by the World Health Organization, the Japanese National Society for the Prevention of Blindness and the American Academy of Ophthalmology.

There was a warm welcome from our Chinese hosts. Nearly 600 people attended, over 200 from China and 350 delegates from other countries.

This meeting is becoming an important event for all those concerned with eye care throughout the world. Although it occupied five days, the level of interest and high quality of debate was maintained throughout. There is now much more known about the epidemiology of the main blinding diseases and the different methods of control than five years ago at the 5th General Assembly in Berlin. The discussion was therefore more specific and at a high level. There was universal agreement that it was a most valuable meeting.

Trachoma & Water

Officers of IAPB

The President of IAPB for the past 5 years (Dr R. Pararajasegaram) and the Secretary (Dr Guillapaulli Rao) are to be congratulated on the excellent organisation of the meeting.

The new President for 1999-2003 is Dr Hannah Faal and the President-Elect is Dr Allan Foster.

Theme

The theme of the congress was the Global Initiative for the Elimination of Avoidable Blindness, entitled ‘Vision 2020’. This Initiative was planned jointly by WHO and the Task Force of IAPB and launched in February 1999 in Geneva. It is set against the current background of over 45 million people blind, a number which is expected to double by 2020 if present trends continue. The purpose of the Initiative is to set common agendas and priorities which will feed into regional and national policy, planning and implementation. The first 5 year phase of the Initiative encompasses:

- specific disease control (large-scale cataract surgery; trachoma; onchocerciasis; childhood blindness; and provision of refractive and low-vision services);
- human resource development;
- strengthening of infrastructure and technology for eye care.

The conference was therefore primarily concerned with how these broad strategies can be translated into focused programmes at the local level, with collaboration between all the partners concerned.

Some Highlights

Selected emphases which emerged from the presentations and discussions included:

1. Cataract Surgery

Three recent publications from India have highlighted the disappointing visual results from large scale cataract surgery. These were referred to several times. How these outcomes could be improved – by better training, better facilities, and better quality control – emerged as critical issues. The routine monitoring of quality of outcomes needs to be built into the data collection.

2. Trachoma

There is a major initiative, within the overall Vision 2020 framework, to eliminate trachoma as a blinding disease. The main issues are training of enough surgeons to deal with trichiasis; how the new antibiotic azithromycin should be used in mass distribution; and how environmental improvements can be incorporated into the programmes.