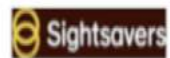


**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF HEALTH AND SOCIAL WELFARE**



NATIONAL EYE CARE PROGRAM
Manual for Health Providers at the Dispensary/Health Centres
Levels

May 2011
Third Edition

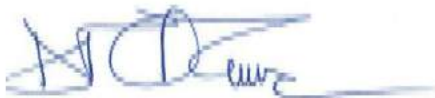


FOREWORD

This edition of the Primary Eye Care Manual, has been developed in line with the Health Policy of 2007, the Primary Health Services Development Program (MMAM) and the Health Sector Strategic Plan III. Also, it is intended to help, the Eye Care Providers, to implement the Vision 2025, National Eye Care Strategic Plan 2011- 2016, and WHO Action plan for Prevention of Blindness 2009 - 2013. It takes into consideration the present developments in science and technology, in the management of eye and other related diseases and conditions. But also, recognizes the available resources as stipulated in the Human Resource for Health Strategic Plan 2008-2013.

The prime objective of this Manual is to improve knowledge and skills of Frontline Health Workers, in the management of common eye Diseases. This Manual also, provides guidance on making decision for referral of eye patients for specialized care. The management of common eye diseases in this Manual, is well illustrated by photos for trainee's easy understanding.

Eye Care teams, both public and private, at the Regional and District Council levels, should use this Manual effectively, in ensuring that, Frontline Health Workers are well skilled in delivering Primary Eye Care services to the community.



Dr. Deco M. Mtasiwa
Chief Medical Officer
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ACKNOWLEDGEMENTS

The Ministry of Health and Social Welfare greatly acknowledges all those who participated in the process of reviewing the previous Edition of Primary Eye Care Manual for Health Providers at the Dispensary and Health Centre Levels.

Our sincere gratitude goes to Sightsavers, Muhimbili National Hospital and Muhimbili University of Health and Allied Sciences, for their technical and financial support, which have made the development of this Manual a success.

Last but not the least, the Ministry acknowledges all those who gave consent, for their photos to be used in this manual.

Finally, we appreciate the commitment of the secretariat, in compiling the document throughout the period of its preparation.

Dr. Donan W. Mmbando
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Figure 20: Retina Diseases

Retinoblastoma



Figure 21: Advanced retinoblastoma



Figure 22: Vitamin A deficiency

Bitot Spots

Bitot Spots



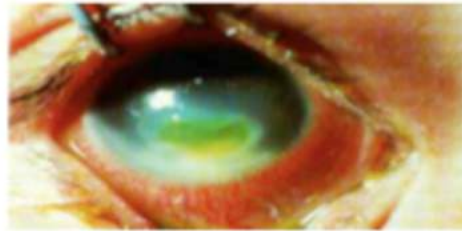
Conjunctival Xerosis



Corneal Xerosis



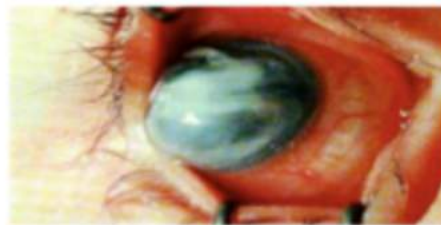
Corneal ulceration



Corneal ulceration



Corneal Melting



**Figure 23: Measles
keratitis**

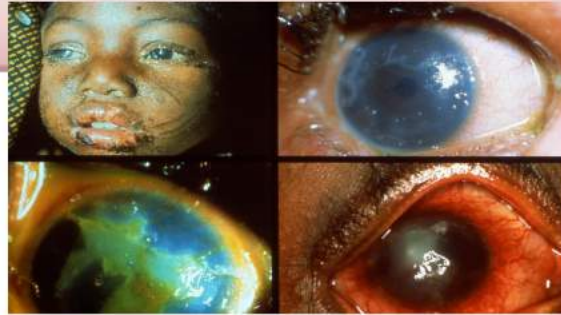


Figure 24: Low vision



**Figure 25: Refractive
errors**



**Figure 26: Ophthalmia
Neonatarum**



**Figure 27: Harmful
Traditional Eye
Medicines**



NB

Children who present with above problems should be urgently referred to a special dedicated Paediatric Eye Tertiary Centre for immediate care

LECTURE X: BLINDNESS CONT.

CATARACT

Conjunctiva is white
Cornea is clear and the whole iris can be seen clearly
The Pupil is White
The white mark is behind the iris

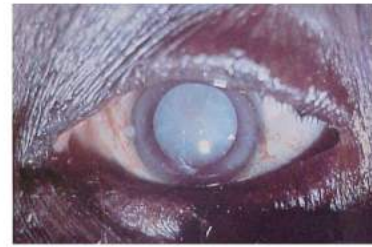


Figure 28: Cataract

REFER TO EYE CLINIC

CORNEA SCAR

Conjunctiva is white
Cornea has a white mark
Pupil cannot be seen easily
NO TREATMENT, Reassurance
(Refer only if in doubt)



Figure 29: Corneal scar

CHRONIC GLAUCOMA

Conjunctiva is white
Cornea is clear
Pupil is large and does not become small (constrict) with bright light
Refer to eye clinic

NB. - By carefully examining the Cornea and the Pupil you can diagnose the cause of blindness
All blind children should be referred to the nearest eye clinic

LECTURE XI: REFRACTIVE ERRORS

PRESBYOPIA

Some eye patients will complain that they have difficulty in seeing small prints and small objects. This commonly occurs as people get older, usually after the age of 40 years.

Refer them to the eye clinic for examination and spectacles. This is a good opportunity for screening of chronic glaucoma and diabetic retinopathy so it is very important that their eyes are examined properly before testing for spectacles.



Figure 30: Presbyopia Before correction After correction

MYOPIA (Short Sightedness)

If the patient complains of difficulty in seeing far objects: Refer the patient to the eye clinic for further examination

HYPERMETROPIA (Long Sightedness)

Some patients may have difficulty in seeing near objects refer the patient to the eye clinic for further examination.

LECTURE XII: OTHER EYE PROBLEMS

If the patient does not have any of the mentioned problems, i.e. Acute red eye, other causes of red eyes, Blindness or Refractive Errors; we then group them in the list of other eye diseases.

DISEASES OF THE EYELIDS

Entropion

The eyelashes turn towards the eyeball
It may be muscular in origin for causes other than trachoma
It results in corneal ulcer and scar leading to blindness



Figure 31: Inturned eye lids and lashes

Treatment: This has a different approach in treating, **BTRP is not recommended**
Refer to eye clinic for surgery.

Lagophthalmos

The patient cannot close his/her eyelids (in Picture Left Eye)
It may be due to leprosy
It may cause drying of cornea and later ulceration



Treatment: Apply 1% tetracycline eye ointment,
Pad the eye then refer the patient to eye clinic

Figure 32: Failure of closure of left eye

Ptosis

The patient cannot open his/her eye (in Picture Right Eye)
It may occur in children or adults

Treatment: Refer to the eye clinic



Figure 33: Drooping of the right eyelid

Chalazion

It is a painless swelling of the eyelid (Tarsal plate)
There may be several of them. They may be in isolation or associated with a certain form of blepharitis

Figure 34: Chalazion of the right lower eyelid

Treatment: If large Refer in good time, its not urgent



OTHER DISEASES OF THE EYE

Proptosis

(in Picture, Left Eye)

The eyeball is pushed out between the eyelids
It can occur at any age, and is always very serious
It may cause a corneal ulcer or optic nerve damage



Figure 35: Forward protrusion of the left eyeball

Treatment:

Apply tetracycline eye ointment
Pad the eye and then
Refer immediately to eye clinic.

Squint

(in Picture LE)

The eyes are not straight so
one eye appear to be turned IN or OUT
It may occur in children and adults



Figure 36: Misalignment of the left eye manifesting

Treatment: All children under 6 years and adults with double vision should be **REFERRED** for help immediately. Refer others in good time, Squint can be treated.

Pterygium

The conjunctiva grows into the cornea,
usually the nasal side
It is a common condition.



Figure 37: Conjunctival ingrowth on cornea

Treatment

All cases of pterygium should be refered to eye clinic

Painful Blind Eye

Patient eye is blind to light and very painful

Figure 38: Painful blind eye



Treatment

REFER the patient IMMEDIATELY for proper care and management.

LECTURE XIV: DEMONSTRATIONS

Taking Visual acuity (Measuring the Vision)



Figure 39: Visual acuity testing using Snellen E chart

When you are testing the visual acuity, the distance from the VA chart to where the patient is sitting must be 6 metres and the chart must be well illuminated. Give correct instruction to the patient and test one eye at a time.

Testing Pupillary Reactions to Light

Normal pupil constricts to direct light stimulation. Put your patient away from a bright light, preferred a darkly illuminated room. Use a bright source of light to examine the pupil



Figure 40: Testing pupil with a torch

Everting The Upper Eyelid



Figure 41: Eversion of upper eyelids

- After washing your hands
- Ask the patient to look down
- Use your thumb and finger

SECTION I

LECTURE I: BASIC ANATOMY OF THE EYE

Trainer's notes: Emphasis should be on the following structures:-

1. Eyelids
2. Conjunctiva
3. Sclera
4. Cornea
5. Iris
6. Pupil
7. Lens

Introduction: *The eye is an organ of vision. It is important to know the different structures of the eye in order to understand the diseases that affect it and to be able to differentiate a normal eye from an abnormal one.*

The Eye:

The eye is an organ of vision. For the purpose of learning we can divide the organ of vision into 3 major parts:-

- a) The protective parts: The ORBIT and the EYELIDS
- b) The optical parts: The Cornea, Pupil, Lens and clear fluids
- c) The uvea (Vascular parts): The Iris, Ciliary body and the Choroid
- d) The nervous system: The Retina, Optic nerve and Brain

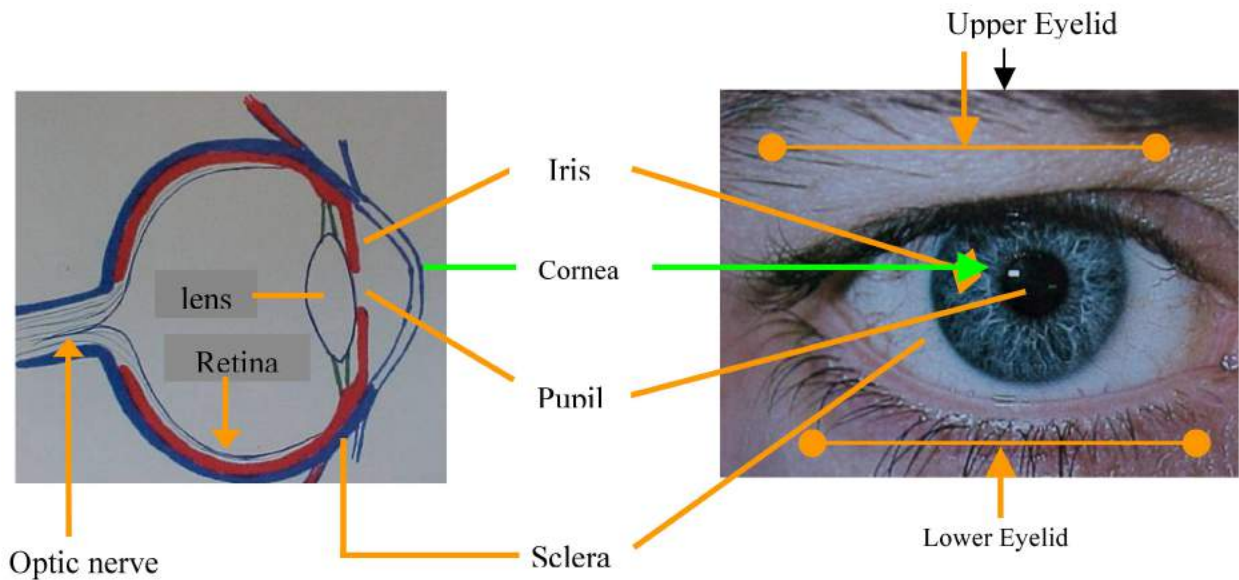


Figure 1: The eye- Cross sectional view Figure 2: The eye- Anterior view

LECTURE II: EXAMINATION OF THE EYE

The objective of this section is to enable the trainee to differentiate a normal eye from an abnormal one. There are four steps to know and follow when you are examining eye patients:-

Take a **history** of the patient's problem
Measure the **Visual Acuity** in each eye separately
Know the findings of a **normal eye**
Examine your patient for **abnormalities** of the eye

Obtaining History From Eye Patients:

Start by asking your patient what is his/ her eye problem
Let her/him explain what are her/his eye problem and the duration of the complaint.

In obtaining history in children ask about family history of blindness in the family, prenatal, birth, and post-natal history. Any history of severe illness or convulsions to the patient or to any family member.

There are **four basic eye complaints**

The eye is **red** and painful Acute red eye
The patient **cannot see** Blind
The patient **cannot read clearly** Presbyopia
Any **other specific complaints** Other diseases

Decide which group your patient belong, this will help you when you examine the eye to make a definite diagnosis.

Examination of the eye begins with visual acuity measurement although in children sometimes its difficult to follow the rule as it depends on how the child present and how willing to cooperate.

LECTURE XIII: SUMMARY ON PREVENTION OF BLINDNESS

POINTS TO REMEMBER	ACTIONS BY THE HEALTH WORKER
<p>Eye infections are usually spread from one person to another. Sharing the same cloth with an infected person can transmit the infection.</p> <p>Eye infections may also be caught by rubbing one's eyes with contaminated hands.</p>	<p>Encourage personal hygiene</p> <p>Advocate for provision of safe water in your community</p>
<p>Flies can transmit infection from an infected person to another.</p>	<p>Encourage personal hygiene, proper waste disposal and good environmental sanitation.</p>
<p>Chipping stones, hammering metal and using a high-speed grinding wheel without protective gears can cause many serious eye injuries.</p>	<p>Workers in dangerous jobs e.g mining, explosives should always have eye protection.</p>
<p>Small children's eyes are often injured by rocks, sticks, thorns, wires, balls and burns from open flames.</p>	<p>Educate parents in protecting their children from hazardous playing environment.</p>
<p>Poor nutrition, measles infection and diarrheal diseases especially in babies are important situations in causing blindness</p>	<p>Nutritional education to mothers</p> <p>Encourage measles vaccination and other vaccinations for all children under 16 years</p>
<p>Sexually transmitted Infections in pregnant women if not properly managed can affect newborns</p>	<p>See that all new born babies have Tetracycline eye Ointment applied to both eyes immediately after birth</p>

NB:

- Encourage anyone with an eye problem to come to the health facility immediately
- Refer to the next available level that provides eye care services all severe eye injuries and serious eye problems.

Trainers Notes

Examination of a young child can prove extremely difficult. It requires patience. A young child with eye problems should not be allowed to leave clinic unless a thorough examination has been performed. The diagnosis must be properly understood before the child is discharged.

PROCEDURE

1. Wash the hands
2. Explain to the mother/guardian what you want to do
3. Wrap the child well in either a sheet or blanket (often the mothers kanga is the best)
4. Place the head of the child between your knees so that the head is properly held in position. The child's body is best in the mother's lap (if only to stop the baby from urinating on you)
5. Ask the mother /guardian to hold the child's hands and feet steady.
6. Gently hold open the child's lids with the fingers and thumb of one hand. The other hand is free to hold the torch.



Figure 3: Eye examination in young children

LECTURE III: TAKING THE VISUAL ACUITY (MEASURING VISION)

This is the most important part of the eye examination.

In infants and young children use a torch or colored objects to identify whether they can detect light/objects. Examine each eye separately.

For older children and adults explain to the patient that the purpose of this test is to determine the extent of the problem and find the most appropriate treatment. Place the chart in good light with no glare.

The patient should sit 6 meters (6 long steps) from the visual acuity chart. Measure each eye separately. Measure the **RIGHT EYE FIRST** while covering the left eye. Then measure the **LEFT EYE** while covering the right eye. Record readings of each eye separately.

Ask the patient to point his fingers in the same direction of the "E" - up, down, right, or left, *see figure 39 in page 30*. If the patient, especially a child or young adult, cannot read from the top line all the way down including the 6/18 line, refer your patient for further testing. If an individual over 40 years of age complains of difficulty in reading books, refer your patient for further testing.

Snellen E chart is used for testing vision in children and illiterate adults, *see figure 46 in page 34*.

POINTS TO REMEMBER:

Cover the eye that is not tested

Children might peep at the sides of cover especially when an eye that is blind is examined, be careful

Children should be examined at the most comfortable and favourable environment

LECTURE IV: COMMON ABNORMALITIES OF THE EYE

Trainer's notes:

Each trainer must make sure that all trainees are able to perform the following skills;

- Eversion of the upper eyelid.
- Testing of pupillary reaction using a flash light
- Use the eye model to differentiate between corneal scar and cataract.

The following abnormality is looked for

A: Four abnormalities of eyelids:

- Cannot closelagophthalmos (refer)
- Eyelashes turned in Trichiasis/entropion /epiblepharon in
.....infants (refer)
- Cannot openPtosis (refer)
- Eyelids malformatione.g Coloboma (refer)

B: Two abnormalities of the conjunctiva:

- It is redAcute red eye (see later lecture)
- There are foamy spots Vitamin A deficiency- prescribe and refer

C: Four abnormalities of the cornea:

- There is a white scarcorneal scar in children (refer)
 - In adult- reassure if no complaints)
- There is gray spotcorneal ulcer (refer)
- There is a foreign bodytrauma (refer)
- There is a lacerationtrauma (refer)

D: Four abnormalities of the pupil:

- It is whitecataract/retinoblastoma (refer urgently in children)
- It is irregular in shapeuveitis/trauma (refer)
- It is large and does not become small in bright lightglaucoma (refer)
- There is blood in front of it.....Hyphaema/Trauma (refer)

LECTURE V: CAUSES OF ACUTE RED EYE

Trainer's Notes

Emphasis should be on a few common eye conditions causing acute red eye

These are conditions that cause engorgement of the conjunctival and ciliary blood vessel hence the eye become blind. They are usually associated with pain/headache, photophobia, excessive tearing and some discharge

The conditions are:-

- Corneal ulcer
- Uveitis
- Acute/congestive glaucoma
- Foreign body/trauma

CORNEAL ULCER

Definition:

Corneal ulcer is a raw discontinuity to the corneal epithelium leading to a painful red eye.

Causes:

- Infection (bacterial, viral e.g Herpes simplex virus and measles, fungal)
- Trauma (physical, chemical)
- Nutritional (vitamin A deficiency)

Signs and symptoms:

- tearing
- painful eye
- severe photophobia
- unilateral red eye
- poor vision
- gray/white spot on the cornea
- pupil may be normal



Figure 4: Corneal Ulcer

Treatment:

- Tetracycline eye ointment
- Apply Eye Shield

ALL CORNEAL ULCER SHOULD BE REFERRED

***Caution: DO NOT GIVE STEROIDS e.g prednisolone, dexamethasone eye drops etc.
These drugs are dangerous if not used with proper prescription***

Note in children

Give Vitamin A capsules and emphasize on diet containing dark-green-leafy vegetables

Vitamin A dosage

Age up to 1 year

100,000 I. U First day
100,000 I. U Second day
100,000 I. U Third dose after 4 weeks

Age above 1 year

200,000 I. U First day
200,000 I. U Second day
200,000 I. U Third dose after 4 week

UVEITIS

Definition:

Inflammation of the uveal tissue (iris, choroid, and ciliary body). It has 3 main clinical presentations namely acute, chronic and acute on chronic.



Figure 5: Irregular Pupil

Causes

- Idiopathic- majority
- Underlying autoimmune disease e.g rheumatoid arthritis
- Viral
- Systemic diseases like tuberculosis, leprosy, syphilis

Signs and symptoms:-

- The patient will complain of painful red eye
- Excessive tearing
- Severe photophobia
- There is no discharge
- Visual Acuity is usually reduced
- The pupil is small and may be irregular due to synechia

Treatment:

Acute uveitis is a serious problem and the patient should be referred urgently for Specialist treatment.

ACUTE /CONGESTIVE GLAUCOMA

This is another eye condition presenting with acute red eye

It is also known as angle closure glaucoma.

Commonly affects people aged 40 years and above.

Signs and symptoms

Severe headache,

Redness and

Pain in the affected eye,

Sometimes vomiting

There is usually dramatic visual impairment).



Figure 6: Acute Red Eye

Treatment

Refer immediately for specialist treatment.

LECTURE VI: CAUSES OF ACUTE RED EYE CONT.

TRAUMA

Most of trauma in children occur at home and school premises

If the patient has a painful red eye, ask if it has been injured. If there is a history of injury, ask about the type of injury and the missile involved.

There are **Four** types of eye injuries:-

- | | |
|------------------------------------|---|
| 1: PERFORATING INJURY | due to trauma with sharp objects e.g. thorn, needle, wire, nail or pen |
| 2: BLUNT INJURY | due to trauma with blunt objects e.g. stone or ball |
| 3: FOREIGN BODIES | this may be anything that goes into the eye e.g. when hammering or welding without protective gears |
| 4: BURNS OR CHEMICAL INJURY | if chemicals/snake venom enter into the eye or if the eyelids or eye is burnt by fire. |

From the history, having decided what type of injury has occurred, you can now carry out the following first aid measures which are:-

1: Perforating Injury:

There is a cut on the cornea and the pupil may be irregular or not visible

Action: -

- Apply tetracycline ointment
- Apply Eye Shield
- Give Tetanus Toxoid (TT) and painkillers.



Figure 7: Corneal laceration

(see "how to make an eye shield" page 32)

Immediate referral to the nearest eye clinic

2: Blunt Trauma:

There may be blood behind the cornea –
HYPHAEMA



Figure 8: Blood in anterior chamber

Management of blunt trauma

Findings

No hyphema, normal vision

Hyphema, no pain

No hyphema, normal vision, pain

Poor vision and pain

Hyphema, pain, poor vision

Action to be taken

Observe

Refer

Panadol, Observe for 2 days, Refer if pain persist

Panadol, refer urgently

Panadol, refer urgently

3: Foreign Bodies:

- If the foreign body is superficial and you can see it,
- Instill lignocaine drops wait for 3 minutes and remove it with a clean piece of cloth or cotton wool, then
- Apply tetracycline eye ointment, and pad the eye for 24 hour if the foreign body is not vegetable matter.

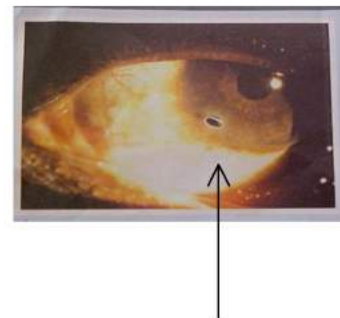


Figure 9: Corneal foreign body

NB:

- Never use needles when removing foreign bodies in the eye.
- Never attempt to remove a foreign body that is firmly embedded in the cornea,
- Refer to the nearest eye clinic for removal
- Never pad an eye that was injured with a vegetable material, apply antibiotic ointment and refer.

4: Burns and Chemical Injuries:

If chemicals e.g. acid or alkali, snake spit, insect bite, traditional eye medicine, cement or lime have gone into the eye, irrigate the eye with clean water continuously for a minimum of 15 minutes.

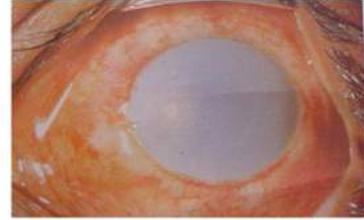


Figure 10: Corneal chemical burn

Treatment:

- Irrigate the eyes with clean water continuously for 15 minutes before examination of vision testing.
- Apply tetracycline eye ointment and
- Refer

Prevention: Encourage eye health education to children and their caretakers in prevention of different types of trauma.

LECTURE VII: OTHER CAUSES OF RED EYES

1. Conjunctivitis
 - a. Acute Bacterial e.g Ophthalmia neonatorum and Trachoma
 - b. Allergic/seasonal
 - c. Viral
2. Harmful Traditional Medicines
3. Viral keratitis e.g Measles, Herpes simplex
4. Vitamin A Deficiency
5. Congenital glaucoma or Buphthalmos

CONJUCTIVITIS

Definition:

Inflammation of the conjunctiva, it is one of the most common causes red eyes.

Causes:

- Bacterial
- Viral
- Allergy

Signs and Symptoms:

- Bilateral red eyes
- Mucoid/watery eye discharge for allergy
- Purulent discharge for bacterial
- Itching of both eyes in allergy
- No pain (only sandy sensation and irritation)
- Vision is normal
- Sometimes may present with swollen lids

Treatment

In allergy

- If the eyes are quite, advice the patient to wash the face with clean cool water four times a day.
- If the eyes are red with discharge, apply tetracycline eye ointment 1% three times a day and refer.

Viral

Usually is self-limiting

Apply antibiotic ointment if there is super infection

Bacterial

In adults

Apply tetracycline ointment and refer if there is poor vision or no improvement after 2 days.

In children

Refer urgently

Caution: DO NOT GIVE STEROIDS e.g prednisolone, dexamethasone eye drops etc. These drugs are dangerous as they may cause corneal ulcer or cataract and glaucoma if used without precaution

Prevention: Improvement of personal hygiene and environmental sanitation

NEONATAL CONJUNCTIVITIS/OPHTHALMIA NEONATORUM:

Definition: It is an acute bacterial infection of eyes in a newborn baby occurring during the first 28 days of life.

Causes:

- Gonococci
- Chlamydia trachomatis
- Staphylococci

Transmission: Mother's birth canal secretions

Signs and symptoms: - swollen eyes with pus discharge, *see figure 26 in page 23.*

Treatment: Careful frequent cleaning of eyes, apply Occ tetracycline 1% after cleaning the eyes and refer immediately

NB: Ophthalmia neonatorum can lead to blindness if not treated adequately.

Prevention:

Here is where prevention is better than cure:-

- Swab the eyes at birth and give tetracycline eye ointment.
- Screen women in the antenatal clinics and treat both parents for Sexually Transmitted Diseases and urinary tract infection.

VITAMIN A DEFICIENCY

Vitamin a deficiency is associated with higher infants and childhood mortality rate particularly associated with Measles. The age group at risk of blindness due to Vitamin A deficiency is 6 months to 6 years .

Causes

1. Reduced intake of foods rich in Vitamin A- e.g Maternal malnutrition and Childhood malnutrition
2. Impaired absorption of Vitamins e.g in repeated Diarrheal Diseases
3. Increased need of Vitamin A e.g in Measles Infection and other febrile illnesses

Ocular Manifestations

Xerophthalmia is a term used to describe the ocular symptoms and signs of Vitamin A Deficiency which are:-

Night Blindness

Older children and adults can describe the problem of night blindness but for younger children ask the mother if the child can not see as well as other children in the evening.

Conjunctival Xerosis

It is a dry appearance of the conjunctiva

Bitot Spots

This is an advanced stage of Conjunctival xerosis presenting as a localized white foamy appearance most often on the temporal conjunctival.

Corneal xerosis

It is a dry appearance of the cornea

Corneal ulceration with Xerosis

Its an advanced stage of Corneal xerosis where you have ulceration of the corneal.

Corneal Ulceration/Keratomalacia

It is a corneal melting that is of abrupt onset. It presents in severe vitamin A deficiency.

Corneal Scarring

It is the end stage of malnutrition in children who survive. Corneal scarring often has a marked effect on vision.

Treatment and Prevention

For treatment of Corneal ulcer and Vitamin A supplementation refer to Lecture V in page 7

Prevention

- Give mothers Vitamin A 200,000 IU after delivery.
- Encourage breastfeeding
- Give Vitamin A supplementation routinely and through Vitamin A campaigns.
- Immunize children against measles,
- Encourage adequate intake of Vitamin A in foods for mothers and weaned children. Weaning foods should be rich in Vitamin A e.g mangoes, papaya, darky green leafy vegetables.

CONGENITAL GLAUCOMA

It is a syndrome where by the intraocular pressure raise and causing abnormality of the eyeball and visual disturbances even blindness.

It presents in young infants

Symptoms and signs:

- Bigger eyes than normal for age (buphthalmos),
- Photophobia and
- Usually bilateral disease

Figure 11: Bilateral Congenital Glaucoma



- Red conjunctiva though not severe
- Cloudy cornea
- Tearing and
- Poor vision due to cloud cornea, disorganization of the inner eyeball structure like lens and compression of the optic nerve.

Treatment

Refer any child who have the above mentioned signs and you suspect that he/she is having congenital glaucoma to a specialist at a tertiary centre.

LECTURE VIII: OTHER CAUSES OF RED EYES CONT.

TRACHOMA

Definition:-

Trachoma in simple term is chronic conjunctivitis. There is chronic inflammation of the conjunctiva leading to scarring of the upper eyelid tarsal plate, entropion and in turn of eyelashes. The eyelashes rub on the cornea causing inflammation of the upper portion of the cornea.

Cause:- Chlamydia trachomatis (bacteria)

Transmission:-

- Flies
- Fomites (kanga, towels)
- Fingers (hands)

Reservoir: - Infected children and mothers in hyper endemic areas.

Symptoms:- Similar to conjunctivitis but in trachoma there is also photophobia and vision may be reduced depending on the stage of the disease.

Signs: Follicles in the upper tarsal plate seen as round and white nodules in active stage.

Complications: In-turned eyelashes that rub on the cornea and eyeball cause corneal ulcer and consequently scarring leading to blindness.

Reference: Trachoma Grading Card as published by WHO

Figure 12: Normal Tarsal Conjunctiva



Figure 13: Trachomatous Inflammation Follicular (TF)

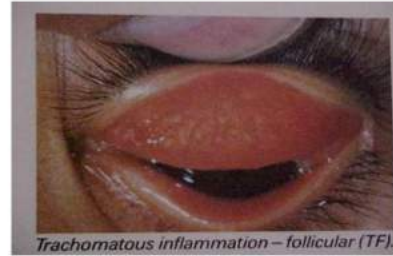


Figure 14: Trachomatous Inflammation Intense (TI)



Figure 15: Trachomatous Scarring (TS)



Figure 16: Trachomatous Trichiasis (TT)



Figure 17: Corneal Opacity (CO)



Treatment and Prevention:

World Health Organization recommended strategy for treatment and prevention of Trachoma is called SAFE.

The four components of the **SAFE** strategy are:-

S Surgical correction of entropion in TT patients. The recommended procedure is Bilamellar Tarsal Rotation Procedure (BTRP) by a trained health worker. This procedure can be at a health facility and at community level.

Refer TT patients for surgery to the nearest facility that offers this service if you do not have a trained person at your facility by BTRP to prevent blindness due to corneal scars

A Antibiotic treatment of individual cases with TF and TI to prevent transmission (Tetracycline ointment 1% two times a day for 6 weeks, oxytetracycline 3% once a day for 6 weeks).

Oral Azithromycin (Zithromax) is distributed in communities that have a District prevalence of active disease of 10% or more for preventive chemotherapy in mass treatment.

F Face washing and total body hygiene to prevent transmission of the disease from one person to another. The targeted age group for this component is children below 15 years. Health promotion messages should be given through various channels such as primary school curriculum, school health clubs and other means used in raising community awareness.

E Environmental improvement. This includes Environmental hygiene (proper waste disposal & construction and use of improved latrines) to reduce the breeding sites for houseflies and provision of safe water to the communities.

Addressing F and E components requires a multi-sectoral approach that involves Health, Environmental, Water, Education Sectors and affected communities through a Public Private Partnership.

TABLE 1: SUMMARY OF COMMON CAUSES OF RED EYE

Disease	Visual Acuity	Affected Eye	Cornea	Pupil	Pain
Allergic/ viral Conjunctivitis	Good	Both	Clear	Normal	No
Ophthalmia neonatorum	Poor +/-	One/both	Cloudy +/-	Normal +/-	Yes
Cornea ulcer	Poor	One/ both	Gray spot	Normal	Yes
Uveitis	Poor	One/ both	Clear or cloudy	Small & Irregular	Yes
Acute glaucoma	Blind	One	Cloudy	Mid dilated	Yes
Congenital Glaucoma	Poor/blind	One/both	Cloudy +/-	Mid dilated	Yes/No

LECTURE IX: BLINDNESS

DEFINITION

Is Visual Acuity of less than 3/60 with the best correction available or central visual field of less than 10° in the better eye— by WHO definition. In a simpler way, it is when some one fails to count fingers at a distance of 3 meters in the eye that is considered good with the best available corrective/distance spectacles.

The definition is the same to children and infants though there are different methods for testing vision in young children until when they are at pre school age when Snellen E chart can be used.

N.B: Rely mostly to parents when they tell you that they think their children have visual problem, immediately refer to the next available level of care that provides eye care services.

Prevalence

Prevalence of blindness in developing countries is about 1%

Causes

Common causes of blindness

- Cataract The pupil is white.
- Corneal scar..... There is a white opacity on the cornea
- Glaucoma..... Syndrome with raised intraocular pressure, Optic neuropathy and visual field loss.
- Other causes..... Disease of the retina and optic nerve

CAUSES OF CHILDHOOD BLINDNESS

Figure 18:
Congenital/developmental cataract



Figure 19: Cornea scars



- Evert the upper eyelid.
- Use a torch to provide enough light for examination
- Wash your hands after the examination.

How to Apply Eye Medicines in the Eye (*Instillation Of Eye Medication*)

When applying medicine in the eye, do the following things:-

- Wash your hands with water and soap
- Explain to the patient what you are going to do
- Pull the lower lid down so that you can see the conjunctiva
- Apply a little amount of the eye medicine on the outer part of the lower lid, while the patient LOOKS UP
- Close the patients eye for 2 minutes to allow the drug to enter the eye well



Figure 42: Instillation of eye medicine

Eye Padding

Patient with an eye pad



Figure 43: Patient with eye pad

Making an Eye Shield

Below are shown pictures of basic instruments for making an eye shield and a patient padded with it.

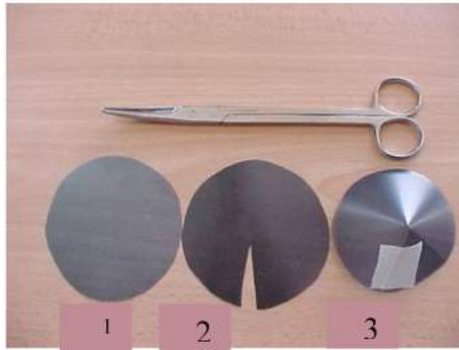


Figure 44: Eye shields in process

Figure 45: Patient with an eye shield

Procedure for making an eye shield

1. Cut a circular hard piece of paper about 5 inches diameter.
2. Cut out a V with the edge towards the center
3. Fold it into a cone and tape together with a plaster.

REFERENCES

1. World Health Organisation 1995, Vitamin A Deficiency and its Consequences, A field guide to detection and control third edition, Alfred Sommer.
2. International Centre for Eye Health, Prevention of childhood blindness teaching set 2007, Gilbert C et al.
3. World Health Organization 2011, Causes Of Blindness and Visual Impairment.

SECTION II

FACILITATOR'S CHECK LIST

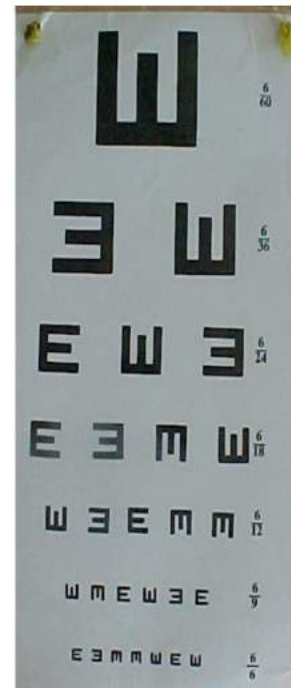
Teaching Aids

- Slide Projector
- Flip charts
- Childhood Prevention Posters
- Trachoma Grading Cards
- Primary eye care manual

Figure 46: Visual Acuity Chart (Snellen E- chart)

Equipment

- Visual acuity charts
- Torch
- Magnifying loupe
- Tetracycline eye ointment
- Gauze and strapping
- Scissors
- Hard paper e.g old X – ray films
- Eye model



RECORD KEEPING AND REPORTING

Keep a register; Use a ledger book and make a table filling in the following details (See annex I)

Complete a primary eye care reporting form every month. (See Annex II)

REFERRAL SYSTEM

Patients will be referred to the nearest eye clinic (This should be discussed at each eye care seminar or contact the district hospital).

SECTION III

ANNEX I: PATIENT AND DISEASE STATISTIC REGISTER

Ser no	DATE	NAME	AGE	SEX	ADDRESS AND NAME OF BALOZI	VAR	D	VAL	D	TREATMENT REMARKS	NEW	F/UP
1	12/9/01	Issa Mohamed	32	M	Mlandizi Ally Said	3/60	Corneal Scar	6/18	Normal	NIL Reassured		
2	12/9/01	Maria Samwel	10	F	Chalinze John Kingo	6/9	Normal	6/18	Trauma	Tetracycline/ Eye pad/Refer		

KEY:

VAL -Visual Acuity Left Eye

VAR -Visual Acuity Right Eye

ANNEX II: MONTHLY REPORT FORM FOR HEALTH CENTRES AND DISPENSARIES

TANZANIA NATIONAL EYE CARE PROGRAM

Primary Eye Care Monthly Report Form for Frontline Health Facility

STATION Date: From To Year 20.....

Eye Patients Statistics:

		Adult		Children	
		M	F	M	F
Total number of eye patients seen:	New				
	Follow up/returning				
	Total				
	Total number of eye patients referred				
	Total number of blind patients				
	(VA BE less than 3/60)				
	Total patients believed blind (can not examine)				
	Number of tubes of eye ointment used: Tetracycline.....				
	Number of Vitamin A capsules used				

Disease Statistics:

		Adult		Children	
		M	F	M	F
Normal eyes					
Refractive errors/Presbyopia					
Allergic Conjunctivitis					
Trachoma conjunctivitis					
Other bacterial conjunctivitis					
Ophthalmia neonatorum					
Vitamin A deficiency					
Blepharitis					
Cataract					
Trachomatous TT					
Trauma					
Foreign body in the eye					
Corneal Ulcer					
Other acute painful red eye					
Corneal Scar					
Others					
District					
Name of eye care worker					
Signature					

ANNEX III: TRAINING GUIDELINES

Basic Anatomy:

Trainee should be able to identify structures of the anterior segment of the eye using a torch and magnifying loupes.

Visual Acuity:

Trainee should be able to take, record and interpret the Visual Acuity of the patient with and without correction.

Examination of the Eye:

Trainee should be able to recognize a normal eye and an abnormal eye using a torch and magnifying loupe.

DISEASES:

- A: Trainees should know how to prevent, diagnose and treat Ophthalmia neonatorum, conjunctivitis and trachoma and refer whenever possible.
- B: Trainee should be able to diagnose and refer patients with the following eye conditions:- cataract, corneal ulcer, uveitis, trauma and foreign bodies, acute red eyes of any cause, all children presenting with history of disturbance of vision, eye appearance or pain.

Blindness:

Trainee should be able to recognize treatable blindness (cataract) and preventable blindness so that he/she may be able to take appropriate action (refer for surgery).

Practical Skills:

This is the most important part of the training. Trainees should be given enough time to practice measuring and recording Visual Acuity, instilling eye drops and applying eye ointments into the eye and how to use a torch and magnifying loupes when examining patients.

Recording:

Trainees should be able to keep registers on eye disease statistics and send monthly reports to the District Eye Coordinator.

The facilitator's responsibilities

"The facilitator's responsibilities in the light of educational concepts should be as follows:-

To be available

- To provide constructive criticism of the participant's learning objectives and working methods
- To analyze and evaluate health problems
- To define learning objectives
- To assess participant's work
- To prepare learning and teaching aids
- To select professional activities for participants
- To confront participants with new problems
- To facilitate the understanding of basic scientific principles
- To supervise participants' progress
- To set an example

In other terms, the facilitator has to be prepared to:-

- Talk to participants
- Talk with participants
- Have them talk together
- Show participants how
- Supervise them
- Provide opportunities for practice