

Instructions for surveyors

(These instructions assume that the subject is a person of 50 years or older, the area of the survey is a district, a cluster random sampling procedure is applied with 60 clusters of 60 people age 50+ each and the Cataract Surgical Services Survey Record is used.)

You are now a part of a team that will survey the population to estimate the number of people blind due to cataract. This survey is scientifically designed and tested for its methodology and validity. In order to achieve reliable and comparable results, it is important that each investigator understands and follows the instructions and uses the tools given meticulously for every subject under investigation. A set of instructions is given below for your reference and use.

1. You are given a booklet containing 60 single sheet Cataract Surgical Services Survey Records, a 6 meter tape with 3 rings, 2 cards with "E's" conforms to size 18 and 60 of the standard Snellen's chart, a binocular magnifying headloupe, an occluder with a pinhole, a pencil, eraser, sharpener, a time table with list of clusters to be surveyed, a direct ophthalmoscope, a trail frame and a torch with spare cells. Each booklet shall be used for one cluster only. For every new cluster, the supervisor will provide a new booklet. Use one page for one person only.
2. Read the Cataract Surgical Services Survey Record and its coding instructions carefully before starting the survey work. Make sure you understand all the sections and the method to complete the record. Contact the team leader or the Survey Coordinator for any clarifications regarding the record, the methodology of the eye examination or any other aspect of the survey.

The questionnaire has 5 sections

- A. General Information
- B. Vision and pinhole examination
- C. Lens examination
- D. Principal cause of vision < 6/18
- E. History, if not examined
- F. Why cataract operation has not been done
- G. Details about cataract operation

Some sections are compulsory and some are conditional.

Section A must be filled for all persons above 50 years of age who belong to the household. Section B, C and D are compulsory for all persons above 50 years who are available and have agreed for eye examination at the time of visit.

Section E is for eligible persons who are known to be above 50 years and not available at the time of visit or refused examination.

Section F is for examined persons, who have a visual acuity level less than 0.1 (<6/60), not improving with pinhole, as well as an obvious opacity in the lens of one or both eyes.

Section G is for all persons with (pseudo)aphakia in one or both eyes.

In case of boxes, enter one number in each box. In case of circles you can make the circle black or put a tick (✓) mark across the circle. Follow the instructions behind the circles where you will mark.

3. The visit to a particular cluster should be announced to the village head 2-5 days in advance. Instructions should be given that all persons of age 50 and above should stay at home on the day of the examination. In case of a larger village (say more than 1000 inhabitants), town or city only the people from one neighbourhood should be asked to stay at home for the examination. In this case, the teamleader should randomly select a neighbourhood following the procedure described under point 5. If any local health workers are available in the village they should accompany the survey team. The local health worker can provide medication to those in need of treatment and make appointments for people

who require eye surgery. Good publicity is essential to achieve a high coverage. Poor publicity will result in many people being absent and a lot of extra work and time spent on revisiting the absentees.

4. Transport should be arranged so as to reach the selected village/town area as early as possible, say by 8:00 a.m. on the day of survey. This will help in contacting most of the persons eligible for examination.
5. The supervisor or teamleader will identify the first household where the survey starts. Go to the centre of the cluster. Take an empty bottle or a pencil, spin it on a flat surface and when it stops, go to the first house in the direction where the mouth of the bottle or the point of the pen is pointing. Proceed to that direction and start at the first house on your left.
6. Ask for all elderly persons of 50 years and older residing in the household. If there is no person of age 50+ in a household, go to the next household. Include only those who actually live in the household at least 6 months every year and who take meals from the same kitchen. Exclude any visitors. For each of the elderly thus identified one Cataract Surgical Services Survey Record has to be filled. Do NOT fill a record for any person above 50 years who is a guest or a visitor from another area, although you may check their eyes as a courtesy. In case you come across a locked house, check with the neighbours whether any persons of 50 years and above live there. If so, make sure you visit the house again after making proper arrangements. If not, go to the next house. Continue the survey in a systematic route till you complete all the required subjects in that area.
7. You may find only the female members of the household at home while the males might have gone to the field for work. Make proper arrangements to examine the elderly males later in the day. This will avoid gender bias in data collection.
8. Insist on seeing all elderly persons yourself. For each person, try to get the most accurate estimate of age of the individual. You may use historic events to assess the age. Only those individuals aged 50+ should be examined and included in the survey.
9. Write the name and enter the code number of the survey area, in this case the district (provided to each team leader), the cluster number (as given in the list of the selected units) and the individual number (serially in the book of survey records) clearly.
10. Enter a tick-mark (✓) against each correct response in the circle provided. All other boxes should be left blank. No question should have more than one correct response.
11. If the subject is available for examination, test his/her vision using the simplified 'E' chart. If the person is wearing glasses, test his/her vision with available glasses. If the subject is not available, try at least one more time through a visit at a time when he/she is expected to be available.
12. If the person is not available for examination despite repeat visit, try to get the correct estimate of age by interviewing a near relative or a neighbour. If they are sure that the missing person's age is 50+, you can complete the appropriate columns in 'A' and 'E'. If no satisfactory assessment of age is available, the subject has to be excluded.
13. Visual acuity is measured with a chart with an "E" optotype of size 6/18 of the Snellens chart on one side and an "E" optotype of size 6/60 on the other side at 6 or 3 metres distance with available correction. Distance is measured with a special tape of 6-metre length, with a ring at both ends and one in the middle. The examiner puts one ring around a finger and keeps that hand against the chest; the examinee does the same with the ring at the other end of the tape. First the right eye is examined, while the left eye is covered with the palm of a hand, either by the examinee, or by a helper. The examinee is standing in the shade or with the back to the sun, while the E chart is kept up in clear daylight. The "E" optotype of size

6/18 is shown first at a distance of 6 metres. After explaining the procedure, the examinee is asked to point in the direction of the open ends of the "E". The optotype is rotated before each reading to change the direction of the open ends. This rotation should be in varying directions to avoid memorising. The criteria for vision at a certain level are 4 correct consecutive showings; or 5 correct out of 6 showings; or 6 correct out of 8 showings.

First show the card with the "E" of size 6/18. If the direction is correctly identified at least six out of eight times, the visual acuity for the examined eye is marked as 6/18 and the visual acuity examination completed for that eye. If not identified correctly, the 6/60 optotype is shown at 6 metres and at 3-metre distance, until a successful result is obtained. If the "E" of size 60 cannot be seen at a distance of 1 metre, check with a torch in semi-dark condition whether the person has perception of light (PL+) or not (PL-), and whether the pupil constricts on light (PR+ = Pupil Reaction) or not (PR-). An eye with VA better than 6/18 does not have to be examined with pinhole - just mark code 1 for pinhole. Any eye with a VA < 6/18 has to be examined for acuity with a pinhole as well. If the vision improves with the pinhole to 6/18 or better, mark code 2. Otherwise, mark the VA obtained with the pinhole.

14. After measuring the visual acuity, the examinee is taken inside the house, where it is usually dark. There, the lens status is assessed by torch and binocular loupe and by distant direct ophthalmoscopy at 20-30 cm distance in semi-dark condition, without dilatation of the pupil. Examine the lens in each eye and mark your observations in Section C: normal lens, obvious lens opacity present, lens absent (aphakia), IOL implanted without posterior capsule opacification or IOL implanted and posterior capsule opacification present. If you cannot see the lens because of corneal scarring, phthisis bulbi or other causes, mark "No view of lens".
15. It is possible to modify the protocol and to include dilatation of the pupil and examination by portable slit lamp for every person with VA < 6/60, not improving with pinhole. If applied, this protocol must then be followed for all persons in all clusters. It must be realised that patients do not always appreciate the dilatation and this may reduce compliance and ultimately coverage of the survey. Slit lamp examination may cause operational problems in door-to-door surveys. Conducting all detailed examinations in a central place may introduce bias as disabled eligible persons may not be willing or able to go there, while non-eligible persons may use the opportunity to be examined.
16. In case the visual acuity of any or both eyes is less than 6/18 with available correction, the eye(s) have to be examined to find the cause of the low vision or blindness. Examination of the posterior segment by direct ophthalmoscopy may be necessary. Mark the principal disorder responsible for visual loss in each eye as well as in the individual after considering disorders in either eye, which are most amenable to treatment or prevention. When there are two disorders, one of which is secondary to the other, the primary is to be selected as the principal disorder. For example, if the patient has cataract secondary to glaucoma, glaucoma is the principal disorder. When there are co-existing primary disorders in the same or different eyes, mark as the principal disorder that which is most readily curable or, if not curable, that which is most easily preventable. The following is a recommended ranking of the disorders with respect to these criteria:
 1. Cataract
 2. Surgery related complications
 3. Preventable corneal opacities and phthisis
 4. (Primary) glaucoma
 5. Posterior segment disorders.
17. An eye, with visual acuity less than 3/60, not improving with pinhole, with an obvious opacity in the lens, is classified as blind due to cataract. When both eyes meet these criteria, the person is classified as blind due to cataract. A visual acuity less than 6/60, is classified as severe visual impairment and less than 6/18 as visual impairment. Some patients have more than one cause of blindness in the same eye, for example cataract and diabetic retinopathy, or cataract and glaucoma. In such cases a clinical judgement has to be made which disease

process is contributing most to the visual impairment. A more difficult problem is when each eye is assigned to a different cause of blindness. What is then the cause in the individual? The convention adopted by the WHO 'Simplified methodology for the assessment of blindness and its main causes' is that the cause in the individual should be the one most easily preventable or curable. In the two cases mentioned above, the cause would be noted as cataract.

18. If there is obvious lens opacity present in either or both eyes (irrespective of the vision), ask why the operation for cataract was not done (Section F). This should be an open-end question. The reasons mentioned by the person should be compared with the barriers listed under F. Mark those barriers that come closest to the reasons for non-operation mentioned by the patient. In no case a possible answer should be prompted. You can mark a maximum of 4 responses.
19. If the person is operated in one or both eyes, all details given under Section G of the form must be entered. If a person is blind due to cataract in one eye, while the other eye is aphakic, section F has to be completed for the cataract blind eye and section G has to be completed for the operated eye.
20. All entries must be made with a pencil only. If you happen to put a tick-mark in a wrong circle or write something wrong, do not strike through or overwrite. Erase the wrong entry and correct your entry. Do not tear, waste or discard any record in your book of questionnaires.
21. Check whether you have filled up all the relevant sections in the Record before going to the next individual. Each form must be completely filled up.
22. Once the entire procedure, including filling of the Record is complete, go to the next individual or household and repeat the same procedure.
23. The team leader must check all entries on all Cataract Surgical Services Survey Records on the day of the examination itself, and corrections must be made before passing on the records for data entry.
24. You may come across persons with eye problems who do not qualify to be part of the survey (younger than 50 years; visitors, not residing in the household) but do need medical attention. You can examine, advise and even treat such patients, but do not include them in the survey data. Do not fill a Record for such persons.
25. In a survey like this, there are always some subjects who are not available or refuse to cooperate. Two or three attempts to contact them again are desirable. If still not available or refusing examination, you may interview a neighbour or a relative regarding the subject's blindness status. In this case the eye examination can not be done and the actual visual acuity level will not be known. The subject can only be categorised as "believed" blind or not blind depending upon the response of the neighbour or relative. Other information such as age and sex can also be obtained from the neighbour or a relative. The number of "absentees" or "refusals" should be kept as low as possible and be less than 10% of the subjects in the cluster (6 or less in cluster of 60).