Community eye-health and vision center guidelines during COVID-19 pandemic in India

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The severe acute respiratory syndrome coronavirus 2 (COVID-19) pandemic has disrupted our society on an unprecedented scale since its inception in December 2019. As the health-care system is finally re-organizing to mitigate the impact of the pandemic, it was necessary to re-structure primary eye care (PEC) activities as well on the same lines. A consensus meeting was held with leading eye-care experts on 2nd May 2020 to prepare a roadmap for PEC in the days to come. Guidelines are needed for PEC activities like vision testing, refraction, optical dispensing, counseling, etc. Some of the activities at vision centers (VCs) may be postponed or modified in light of the current pandemic situation. PEC workers need to strictly follow social distancing norms (minimum 3 feet) for minimizing risk of exposure and need access to appropriate personal protective equipment (PPE), like gloves, masks and shields while examining beneficiaries. For optometrists, sterilization of instruments and encouraging the people to remain silent during the examination is recommended. Because conjunctivitis may be an early sign which can present at VCs, extra precautions in the form of PPE has to be ensured while examining such patients. This is also an opportunity to start running telemedicine clinics for all emergent cases that cannot be managed at the primary level. The guidelines also need to be updated based on the context of the working environment and changes in government directives from time to time.

Key words: COVID-19, guidelines, primary eye care, vision center

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; previously provisionally named 2019 novel coronavirus or 2019-nCoV) disease (COVID-19) at the end of 2019 has caused a large global outbreak and is a major public health issue.¹ According to WHO COVID-19 Situation Report on 15th May 2020, there are more than 4.3 million cases globally and the number of deaths stand at 2,97,119.² In the wake of nationwide lockdown to mitigate the transmission as well as anxiety and fear created by the COVID-19 pandemic, eye care workers need practical and safe guidelines to be able to provide outreach services without any threat of infections from the deadly virus.

Therefore, it is essential to develop uniform and standard community-based eye care guidelines which ensure the safety of eye care workforce while delivering community eye care services during the present and post lockdown periods.

Methods

With an initiative by All India Ophthalmic Society, along with representatives from National Program for Control of Blindness (NPCB), Ministry of Health & Family Welfare, Govt. of India, Dr. Rajendra Prasad Centre for Ophthalmic Sciences AIIMS New Delhi, including Community Ophthalmology, leading eye care institutions run by NGOs or Trusts, Vision 2020 India have come together with an initiative by All India Ophthalmic Society, along with representatives from National Program for Control of Blindness (NPCB), Ministry of Health & Family Welfare, Govt. of India, Dr. Rajendra Prasad Centre for Ophthalmic Sciences AIIMS New Delhi, leading eye care institutions run by NGOs or Trusts, Vision 2020 India have come together with an initiative by All India Ophthalmic Society, along with representatives from National Program for Control of Blindness (NPCB), Ministry of Health & Family Welfare, Govt. of India, Dr. Rajendra Prasad Centre for Ophthalmic Sciences AIIMS New Delhi, including Community Ophthalmology, leading eye care institutions run by NGOs or Trusts, Vision 2020 India have come together and developed guidelines for delivering community eye-health services. The present guidelines will be updated based on the context of the work environment and changes in government directives from time to time.

Community Eye-health and Vision Center Guidelines

Areas affected by the COVID-19

The country is divided to different zones according to the status of COVID-19 reported as follows:³

Green Zones: They can be defined as those districts having zero confirmed cases of coronavirus in the last 21 days.

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Red Zones/Hotspot district: Districts with several active cases, high doubling rates of confirmed cases are labeled Red Zone.

Orange Zones: Those zones which are neither red nor green are called Orange Zones.

Red Zones Containment areas are demarcated within red zones and orange zones by the district administration based on mapping and geographical dispersion of cases and contacts. The boundary of the containment zone could be a residential colony, mohalla, municipal wards, municipal zones, gram panchayat, a cluster of villages, blocks, etc.

According to Home Ministry, Government of India guidelines,[13] outpatient departments (OPDs), medical clinics etc., shall be permitted to operate in all zones except containment areas (with social distancing norms). Although Ministry of Health and Family Welfare has issued comprehensive guidance to prevent hospital acquired infection in health facilities, the practice of universal precautions might still be lacking in many of our hospitals and health centers.[1] A COVID-19 case with mild/asymptomatic/atypical presentation may go undetected and inadvertently transmit the infection to other patients and healthcare workers, putting these individuals at risk of contracting disease.[4] Keeping these in mind, National Program for Control of Blindness and Visual Impairment (NPCB&VI) has released guidelines for functioning of eye-care facilities during the pandemic.[5][Table 1].

Vision centers
In view of government directives to reopen routine medical facilities, it is deemed appropriate to re-open vision centers (VCs) at this time in the community. Primary eye care services are also expected to cater to primary needs of the community, for preventing over-burdening the secondary and tertiary level hospitals during the global pandemic [Table 2].

It is suggested that some activities should be postponed at the VCs that include school vision screening and training of teachers in school vision screening program, community gathering for Information, Education and Communication (IEC) activities and health education, eye screening camps for cataract, diabetic retinopathy, and other ocular morbidities as the precautions related to COVID-19 prevention would be difficult to implement during these activities. However, training program for Accredited Social Health Activists (ASHAs) and community eye care workers may be planned through telehealth [Table 3].

Social distancing in vision centers
There should be adequate space for patient consultation, refraction, and dispensing spectacles and distance of 1 m should always be ensured. The first room should provide for the patient reception and waiting area and the spectacle dispensing unit (preferably 10’ × 8’). A separate area should be available for patient examination and refraction (preferably 10’ × 8’). A private space should be provided for the office and spectacles workshop (preferably 6’ × 6’).[9]

The VC should ensure social distancing at each step: patient reception, optical counter, patient waiting area, client examination station, etc., Unidirectional flow of patients should be ensured, i.e., entry and exit must be different if there are two doors [Fig. 1].

Point of entry screening and check-in
Every VC should set up an entry control and screening facility at the point of entry. Personal protective equipment (PPE) in the form of three-ply surgical masks/N95 masks and gloves must be provided to the health-care worker (HCW) who is posted at point of entry [Table 4]. There should be a security barrier at the entry point so that only the patient and one attendant can enter the hospital. If there are >3 patients at a time, then they should be asked to wait in a designated open area (following social distancing norms).[19]

Symptom screening
History of fever, cough, breathlessness, loss of smell or acute conjunctivitis in patients or attendants or family members in the last 2 weeks is enquired. Aarogya Setu app installed
on patient and attendant phone also must be checked at this point.

Fever screening
Body temperature screening should be done with an infrared non-contact thermometer. Anyone with temperature of 98.6°F (37°C) must be immediately escorted to an isolated waiting area and seen by an optometrist in complete PPE in a pre-designated examination room. In the absence of an ophthalmic emergency, any patient who fails symptom or fever screening, should be referred to a physician or a COVID-19 treatment center as appropriate.

Once entry screening is passed, the patients and their attendants should be provided with three-ply surgical masks and hand sanitizers (at least 70% alcohol-based) to disinfect their hands before they enter the waiting room. A daily list of all HCW, patients, their attendants, and other hospital visitors with their verified mobile number and verified ID proof should be maintained (for contact tracing if necessary, in the future).

Protocol for dilation
The HCW should avoid touching patient while instilling dilating drops. He should instruct patients to pull lower eye lid down by themselves while drop is being instilled. If HCW have to touch patient, then he should use a bud to pull lower lid down or use disposable gloves.[11]

Visual acuity
Distance vision
When testing visual acuity, one may start from the lowest achievable line to speed things up. One should avoid using occluder and request patients to close the non-testing eye with their palm after using sanitizer. At least 1 m distance from the patient should be maintained while assessing visual acuity.

Near vision
The near vision chart should be held with gloved hands at appropriate distance instead of the patient holding the chart. One may assess the near vision while standing so that the examiner is at a higher level compared to that of the patient.[11]

Precautions during performing refractions
The optometrist as well as the patient should not speak during the examination and optometrist should avoid touching the
### Table 4: Guidelines for rational use of PPE for non-COVID-19 hospitals

| Setting                                      | Activity                                         | Risk       | Recommended PPE                                                                 | Remarks                                                                                   |
|----------------------------------------------|--------------------------------------------------|------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Ambulance transfer to designated hospital/ emergency | Attending to severely ill patients while performing aerosol generating procedure | High risk  | Full complement of PPE (N-95 mask, cover all, goggle, Nitrile examination gloves, shoe cover) | While performing aerosol generating procedure                                             |
| Doctor’s chamber/ICU/critical care           | Clinical/critical care management                 | Moderate   | N-95 mask* Goggles** Latex examination gloves + face shield                     | *Aerosol generating procedures anticipated. Face shield, when a splash of body fluid is expected. **Only recommended when close examination of oral cavity/dentures is to be done |
| Pre-anesthetic check-up clinic/OT            | Pre-anesthetic check-up/ Surgery/GA              |            |                                                                                |                                                                                          |
| Help desk/registration counter/CSSD/laundry  | Provide information to patients/handling linen   | Mild risk  | Triple layer medical mask Latex examination gloves                              | Physical distancing to be followed at all times                                            |
| Doctors chamber/pharmacy/ward/emergency/lab  | Clinical management/ Drugs/sample collection (non-respiratory) samples |            |                                                                                | No aerosol generating procedures should be allowed. Frequent use of hand sanitizer is advised over gloves. |
| Sanitary staff                               | Cleaning frequently touched surfaces/Floor        | Low risk   |                                                                                |                                                                                          |
| Ambulance transfer to designated hospital    | Transporting patients not on any assisted/ventilation/driver the ambulance | Low risk   | Triple layer medical mask Latex examination gloves                              | Driver helps in shifting patients to the emergency                                      |
| Other supportive services incl. Kitchen      | Administrative/Financial Engineering** and dietary**/services, etc., | Low risk   | Face cover                                                                     | **Engineering and dietary service personnel visiting treatment areas will wear personal protective gears appropriate to that area |

Patient’s head or face. Refraction can be performed using autorefractor or a streak retinoscope where mandated. If possible, retinoscopy can be performed after wearing face shield or at distance of one meter and the refractive value can be calculated according to the distance. Trial frame and the metal rim of the lenses used should be cleaned with alcohol-based sanitizer after examining each patient. Isopropyl 70% or ethyl alcohol 70% can be used to wipe down metallic surfaces. Sanitization (using 0.5% hydrogen peroxide solution or savlon) of retinoscope, pinhole, occluder, and trial lenses used in objective and subjective refraction after seeing each patient is mandatory.

In case of urgent ophthalmic problems in a patient who is a confirmed case of COVID-19, eye care is best provided in a multispecialty hospital setting. Patients with conjunctivitis should be seen in a designated OPD room with an isolated waiting room. Because conjunctivitis is reported as part of the disease spectrum of COVID-19,[12] all patients with conjunctivitis should be COVID-19 suspects and should be examined in isolation, using N95 mask, eye goggles, face shields, and disposable gloves.

### Prophylaxis

Indian Council of Medical Research (ICMR) has advised oral hydroxychloroquine 400 mg BD on day 1, followed by 400 mg OD weekly for 7 weeks. This must be taken only after direct consultation with an internal medicine expert.[13]

### Hand hygiene

Optometrists should perform hand hygiene using alcohol-based hand rub (minimum 20 s) or by washing with soap and water (minimum 20 s).

### Counseling

Once a patient has been diagnosed with a cataract and scheduled for surgery it would be preferable to complete the discussion and minimize the patient mingling with other people. One can fix the date, provide referral transport and give clear instructions for surgery-day protocols. Confirmatory tests for COVID-19 and chest X-ray may be requested at the discretion of the operating surgeon. The patient may be counseled for surgery and special COVID-19 consents should be taken before the surgery.

### Role of teleophthalmology during COVID-19

Telemedicine is provision of traditional clinical service using information and communication technology (ICT), often in live format. WHO has defined it as “the delivery of health care services, where distance is a critical factor, by all health care professionals using ICTs for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.”[14] Telehealth differs from telemedicine in that it involves the use of telecommunications and virtual technology to deliver health care outside of traditional health-care facilities.[7] Teleophthalmology which until now was confined to retinopathy of prematurity and diabetic retinopathy have now found application in community ophthalmology practice as well owing to the global pandemic situation.

An ophthalmologist from the secondary/tertiary level should hold teleophthalmology services to the VC once every week. The ‘tele-consultation’ should be organized at the same
time and same day of the week every time and should adhere to the telemedicine guidelines issued by the government from time to time.\textsuperscript{[9,13]} The teleconsultation should target problem cases, postoperative cases and complicated refractions. A VC coordinator, preferably an optometrist, should be located at the service center and should assist during the consultation. The coordinator should help in augmenting telemedicine skills of VC staff and in training other categories of health personnel.

The ophthalmologists should follow the MoH&FW telemedicine guidelines and make sure that they are aware of all the procedures to be followed when dealing with patients using telemedicine, such as informed consent, prescription, sharing of photographs, and other aspects. The doctors can make sure of facilities such as videoconferencing with other referring doctors and general practitioners. Telemedicine practice should be widely advertised on social media and other platforms so that it reaches to peers and patients.

\textbf{Health talks at vision centers}

It is mandatory that all VCs discourage and stop health talks as it may lead to crowding and social gathering. Any health talk, if needed can be performed using online portals, such as web meetings, Skype, Zoom, and other mobile apps. Health talks and health material may be run/displayed on TV monitors at VC.

\textbf{Cost-effectiveness of PEC activities}

In wake of the requirement for expensive PPE equipment, cost-effectiveness should be ensured by exploring new revenue options and avoiding redundant costs as much as possible.

\textbf{Disposal as per biomedical waste rules}

The HCW at VC should dispose PPE every day after finishing the work in color-coded bins as follows:\textsuperscript{[14]}

- 3 PLY masks, head caps, PPE suits, disposable gowns in yellow bin
- Gloves in the red bin [Table 5].

\textbf{Conclusion}

The COVID-19 pandemic is going to stay for some time now, and it is imperative that all HCWs learn to live with the virus. This is called, in common parlance, a new normal. The new normal for general public is the concept of social distancing and use of masks at all times. For HCWs, the new normal is use of PPEs, sterilization/disinfection of all paraphernalia and telemedicine. Norms and guidelines are updated every day and it is the responsibility of the HCW to keep himself abreast with the latest updates and guidelines in his area of work. Last but not the least, maintaining a state of heightened vigil on a constant basis and strict compliance with the rules will only ensure that the disruption due to the pandemic is mitigated, and health services resume to its full functioning at the earliest.

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\textbf{Conflicts of interest}

There are no conflicts of interest.

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However, there are limited guidelines available for primary eye care (PEC) facilities in India. In India, the government sector offers PEC through its Vision Centre network, i.e., the Vision Centre (VC) network of L V Prasad Eye Institute (LVPEI), this article, we describe the guidelines followed in our PEC facilities.

Non-governmental organizations (NGOs) offer care through their Vision Centres (VC) located within the primary health centers (PHCs). In India, the government sector offers PEC through its Vision Centre network in India. In the context of COVID-19 in L V Prasad Eye Institute network in India, the government sector offers PEC through its Vision Centre network (VC network) located within the primary health centres (PHCs).

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Commentary: Preferred practice guidelines for ophthalmologists by the Academy of Ophthalmology (AAO), have been developed for ophthalmologists by the American Optometric Association (AOA) and the American Optometry Association (AOA) has developed guidelines for optometry.

All India Ophthalmological Society (AIOS) and the Indian Ophthalmological Society (IOS) have developed guidelines for ophthalmologists. The American Optometrical Association has developed guidelines for optometry. The ophthalmic community has developed guidelines for patients and for ophthalmologists, including ophthalmologists, optometrists, and allied health personnel, as most of the ophthalmic procedures bring them in close contact with the patients.

In the current context of COVID-19, the protocols can also be viewed at: [Internet]. 2020. p. 1-80. Available from: https://www.mohfw.gov.in/pdf/AdvisoryontheuseofHydroxychloroquinasprophylaxisforSARSCoV2infection.pdf. [Last accessed on 2020 May 14].

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