

## **BEST PRACTISES AND INNOVATIONS :**

### **A. TITLE OF THE PRACTICE: CASE BASED E-LEARNING FOR POST GADUATES**

**OBJECTIVES OF THE PRACTICE:** As a part of lifelong learning in medical field, it helps to facilitate teaching and learning process in fully on-site or blended environments.

**THE CONTEXT:** For extensive training of the post-graduates during their course, apart from traditional teaching and learning methods, E- learning facilitates learning from anywhere, anytime and also saves time. Technological innovations have led to the development of effective new methods-emerging pedagogies- that have been identified in reports on e-learning trends and have been taken to all stages of education.

**THE PRACTICE :** Dept of Ophthalmology has adopted case based e-learning for post-graduates apart from various other traditional methods of teaching and learning. Everyday evening , time which is convenient for all the students is chosen and one case scenario is given on whatsapp group for the postgraduates with multiple choice questions. The students are asked to answer by giving explanations for excluding other options. This way the students learn to analyse the questions with each options given and hence easily rule out the wrong options. Students also clear their doubts and senior faculty will give their inputs and share their experience with any peculiar cases. After the discussion of the cases ends, complete explanation for the case scenario is shared by the faculty. This helps them in daily practice in diagnosing the patients with any ocular conditions. At the end of every month performance of each student is analysed and the student who has answered maximum correct answers will be rewarded. Thereby encouraging other students to perform better in future.

**EVIDENCE OF SUCCESS:** From the feedback analysis there is definite benefit for the students.

### **B. Title of the practice: TELE MEDICINE AT COMMUNITY OUT REACH PROGRAMS**

### **Objectives of the practice**

To screen patients with a store-and-forward model telemedicine with acquisition of images for subsequent evaluation by an ophthalmologist.

### **The context**

The inability of half the population to access the health care system on time is a major contributor to visual morbidity. Telemedicine programs was designed to improve the access to care by people who are not currently obtaining care, by screening through patient imaging in a primary care setting. The improved access identifies more patients with pathology to enter the health care system

### **The Practice**

The technique involves a smartphone combined with a 20 diopter lens. The flash of the phone serves as source of illumination, while the 20D lens captures the retinal images which is displayed on the mobile screen. The procedure is started in video mode and the stills can be obtained from snapshots which can be edited and saved in gallery for uploading in WhatsApp or emails for telemedicine purposes. Various photo editing applications are available to sharpen the images and adjust the exposure.

Ophthalmologists will diagnose and grade the photographs and also assess the sensitivity and specificity of diagnoses with the smartphone, using traditional retinal imaging as the reference standard in a separate analysis.



Examining the fundus with +20D lens

### **Evidence of success**

Successful use of telemedicine in the disease diagnosis based on photography especially Diabetic retinopathy (DR) and Retinopathy of prematurity (ROP), has improved the access and has

delivered benefits to patients, providers, health care systems and society. Timely diagnosis and early intervention as reduced ocular morbidity and mortality.



Ocular surface squamous cell carcinoma



Retinoblastoma

### **Problems encountered and resources required**

- Scarcity of magnifying lens: Existing +20 Diopter lens is required in the OPD for performing Indirect ophthalmoscopy



- Use of a lens bracket attached to the mobile phone will improve the ease of use, and also free the second hand for other procedures like indentation and parting of eyelids
- The use of lens bracket will enable teaching of middle level ophthalmic workers at the primary level to capture photos and send to higher centers where advice on further management can be given.



- Telemedicine programs should address all data security and integrity concerns including: patient privacy and confidentiality, data availability and data recovery. All image or video transmissions should be transmitted with proper security measures, including encryption.

- Telemedicine programs for ophthalmology ensures that quality of care and long-term outcomes are not compromised by insufficient performance of the technology or the system.
- Validation challenges include assessing the available imaging devices, the image field of view, the use of eye drops for pupillary dilation, and the training of imagers and readers