LV Prasad Eye Institute

INDIAN INSTITUTE of PUBLIC HEALTH
ESTABLISHED BY PHFI
HYDERABAD

IIM AHMEDABAD

Indian Health Outcomes Public Health & Economics Research Centre

HOPE

QUARTERLY NEWSLETTER JUNE 2023

Welcome To The Team

Dr K G Sruthi, BDS joins as a research apprentice and has a fervent interest in public health and a particular fascination with community studies. She has a preference for conducting mixed method research, systematic review and meta-analysis. Non-communicable diseases and eye health capture her attention as subjects that require research to enhance India's health system further. She aims to contribute her knowledge to strengthen the health sector through in-depth research.

Aashna Ratra joins as Research Apprentice is a Third Year Medical Student at Government Stanley Medical College. Her areas of excellence include working collaboratively with teams, creativeness, and extreme dedication. She seeks new prospects for expanding her knowledge as a researcher and student.

Congratulations

Shubhangi Agrawal has been awarded a fully funded PhD admission at the University of Edinburgh in the economics department. This is an incredible accomplishment for Shubhangi and a testament to her hard work, dedication, and passion for her field. We are certain that with her enthusiasm and expertise, she will excel in this program and make the most out of this amazing opportunity.

New Launches

I HOPE COMMUNITY

The IHOPE community platform connects people with varying skills and knowledge, fostering an environment for sharing ideas and information.

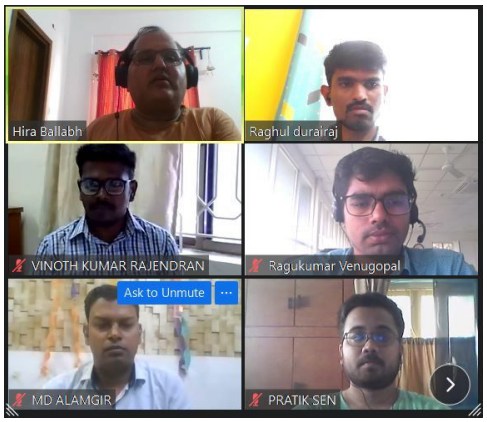
To know more, please register here:

https://lnkd.in/gdaU99eA

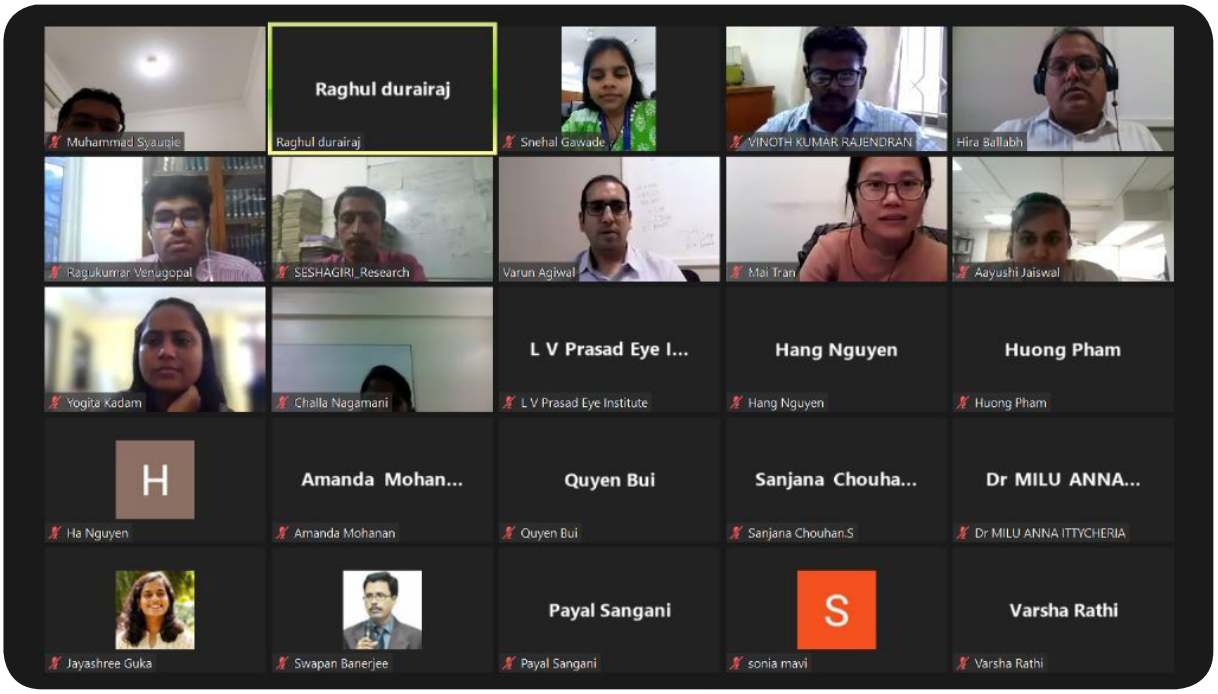
Certified Course on Digital Health

IHOPE is proud to announce the launch of its new certified course on digital health. This course will provide an in-depth analysis of the current trends, challenges, and opportunities in the field of digital health. It will also focus on exploring the use cases for digital health, its potential impact on medical practices, and how to leverage technology for better healthcare outcomes. Stay tuned to know more about this course and be a leader in the field of digital health

Data Management Workshop



IHOPE organized a data management workshop that was highly appreciated by attendees. The workshop imparted critical knowledge and provided attendees with valuable insights from professionals, making it a meaningful and enlightening experience. Additionally, the workshop successfully facilitated the application and utilization of essential data management techniques as participants worked on their projects or research.

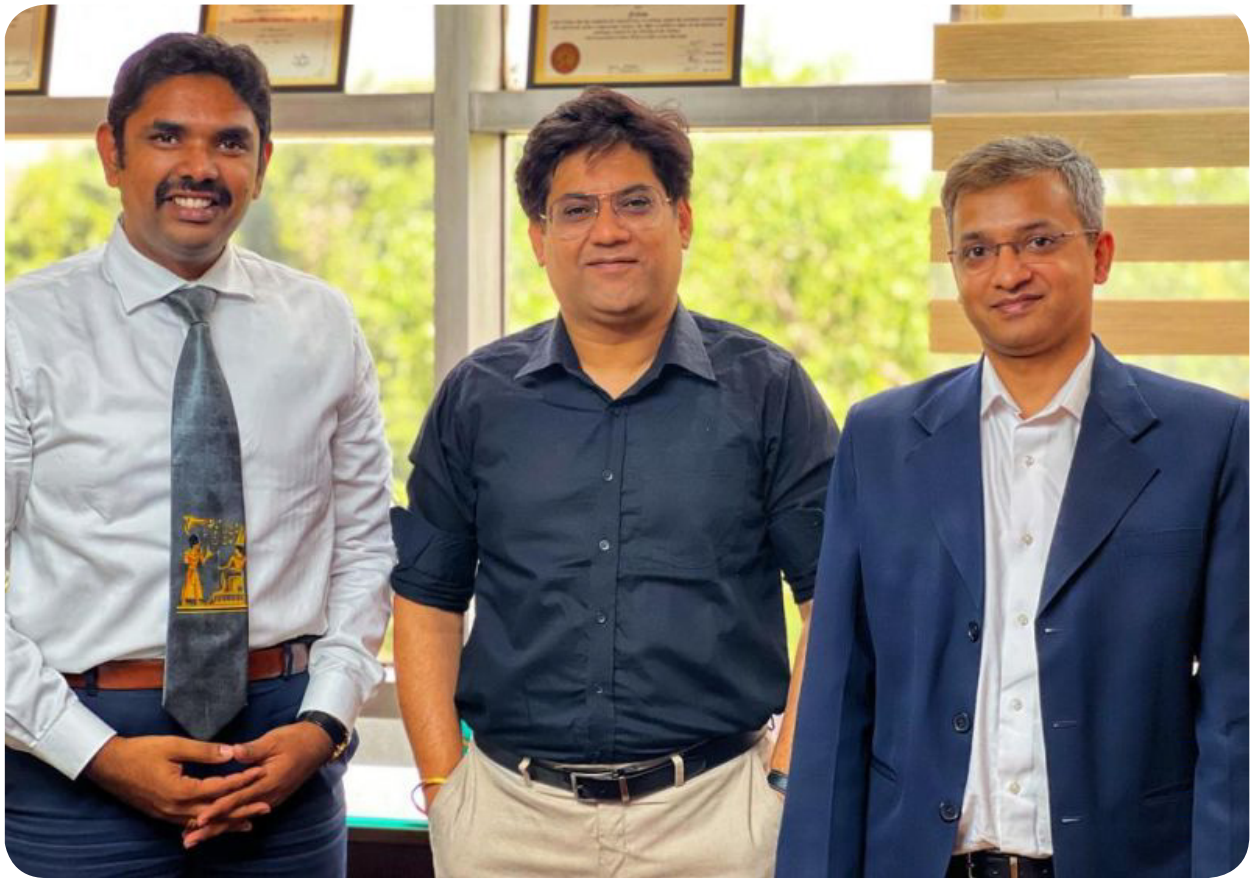


IHOPE Team at AIOS 2023

IHOPE team was pleased to be part of the AIOS 2023 where the team did a presentation on IHOPE and its role in preparing guidelines and conducting Health Technology Assessment (HTA). The team highlighted how IHOPE's goal is to help health professionals, policy makers, and other stakeholders make informed decisions regarding the use of new medical technologies. They discussed how IHOPE employs a systematic approach to develop evidence-based guidelines for use in clinical practice, as well as the use of HTA methods to assess a technology's impact on patient outcomes

Collaboration

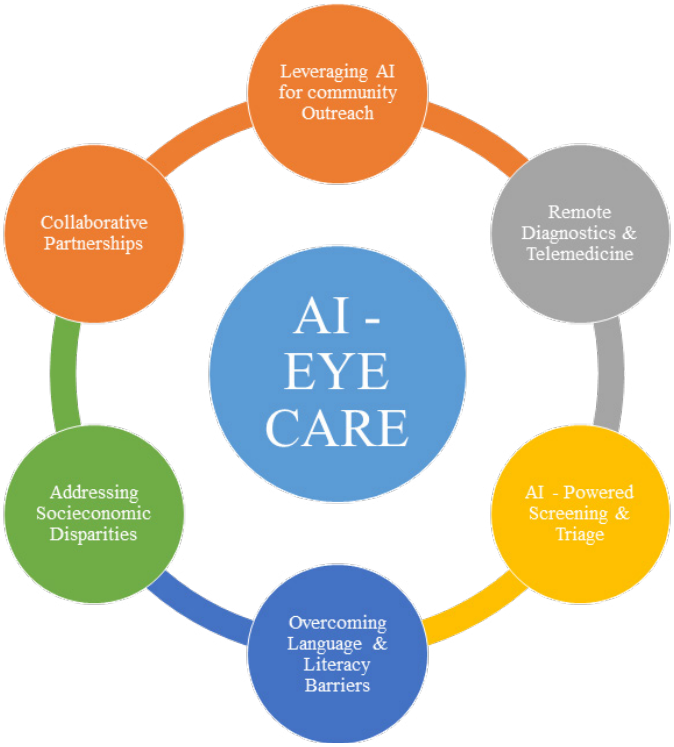
IHOPE team had the pleasure of meeting Dr. Pankaj Kumar Arora, Director NHA MOHFW, Director of National Health Authority (NHA), for a discussion on further collaboration opportunities. They further committed to improving the health outcomes in India.It was a wonderful experience for team IHOPE to exchange ideas with such an experienced leader!



Expanding Access to Eye Care through Artificial Intelligence

Expanding Access to Eye Care through Artificial Intelligence

Introduction: In today's world, access to adequate eye care is still a challenge for many communities worldwide. However, the intersection of artificial intelligence (AI) and community eye health presents new opportunities to overcome these barriers and improve eye health outcomes. By leveraging AI technologies, we can expand access to eye care services, reach underserved populations, and enhance overall eye health. This newsletter edition explores the transformative potential of AI in breaking down barriers to eye care access and highlights various applications of AI in community eye health.



Leveraging AI for Community Outreach

AI can play a crucial role in enhancing community outreach efforts for eye health. By utilizing AI-powered mobile applications, chatbots, and virtual assistants, we can disseminate eye health information, raise awareness, and provides self-assessment tools for the early detection of eye conditions. These technologies can empower individuals to take proactive steps in maintaining their eye health and seeking appropriate care when needed. Furthermore, AI can personalize information based on individual preferences, delivering tailored content to promote eye health awareness.

AI-powered mobile applications are an effective tool for reaching individuals in remote or underserved areas. These applications can provide educational resources, eye health tips, and reminders for eye exams or medication usage. They can also incorporate interactive features such as symptom checkers, enabling users to assess their eye health and determine

if further medical attention is required. Chatbots and virtual assistants, powered by AI, can offer 24/7 support, answering common questions, providing basic eye care advice, and directing users to relevant eye care services in their area.

Remote Diagnostics and Telemedicine

AI-driven technologies have the potential to revolutionize remote diagnostics and telemedicine in the field of ophthalmology. With the assistance of AI, healthcare providers can conduct remote screening, diagnosis, and monitoring of eye conditions. This approach is particularly valuable for individuals residing in rural or underserved areas with limited access to in-person eye care services. AI-powered image analysis algorithms can analyze retinal images, identify abnormalities and assist in diagnosing various eye conditions. Additionally, telemedicine platforms facilitated by AI enable real-time communication between healthcare professionals and patients, enabling remote consultations and follow-up care.

Teleophthalmology, supported by AI, allows for remote assessment and monitoring of eye health. Patients can capture retinal images using specialized devices or smartphone attachments, which are then securely transmitted to eye care professionals for analysis. AI algorithms can automatically screen these images for signs of eye diseases, such as diabetic retinopathy, age-related macular conditions, hypertensive retinopathy, and glaucoma. Healthcare providers can review the results remotely and determine the appropriate course of action, whether it involves scheduling an in-person examination or providing further guidance to the patient.

Furthermore, AI-powered remote monitoring systems can track changes in eye health over time. By utilizing wearable devices or home monitoring kits, individuals can regularly measure visual acuity, intraocular pressure, or other relevant parameters. AI algorithms can analyze the collected data, detect deviations from normal values, and alert healthcare providers if intervention is necessary. This proactive approach enables early detection of potential complications, reduces the need for frequent in-person visits, and empowers individuals to take charge of their eye health.

AI-Powered Screening and Triage

Traditional eye screening methods often require specialized equipment and trained personnel, making them inaccessible to many communities. However, AI can support the development of automated screening tools and image analysis algorithms. These AI-powered tools can quickly and accurately detect common eye conditions, allowing for efficient triage and referral to appropriate eye care providers. By reducing the burden on healthcare professionals and streamlining the screening process, AI-driven screening and triage systems can improve the efficiency and effectiveness of eye care services

One prominent example is the use of AI in diabetic retinopathy (DR) screening. DR is a leading cause of blindness, but its early detection can significantly reduce the risk of vision loss. AI algorithms can analyze retinal images and identify characteristic signs of DR, such as microaneurysms or hemorrhages. By automating this screening process, AI enables faster and more accurate identification of individual risk, ensuring timely interventions and treatment.

Additionally, AI can assist in the triage process, helping determine the urgency and severity of eye conditions. Through machine learning algorithms trained on vast amounts of data, AI can assess symptoms, medical history, and risk factors to prioritize patients for further evaluation or treatment. This intelligent triage system ensures that those requiring immediate attention receive prompt care while optimizing resource allocation and reducing waiting times.

Overcoming Language and Literacy Barriers

Language and literacy barriers can impede effective communication and understanding of eye health information. However, AI–powered language translation and natural language processing technologies can bridge these gaps. AI can facilitate the accurate translation of eye health content into various languages, ensuring that individuals from diverse linguistic backgrounds can access relevant information. Additionally, natural language processing capabilities can enable interactive conversational interfaces, allowing users to ask questions and receive responses in their preferred language. By overcoming language and literacy barriers, AI promotes inclusivity and ensures that vital eye health information reaches a wider audience.

Language translation tools powered by AI can be integrated into eye care platforms and applications, enabling real-time translation of educational materials, instructions, or consultations. These tools use advanced algorithms to accurately translate text, audio, or visual content, ensuring that language is not a barrier to accessing eye care information

AI-driven natural language processing can enable interactive and personalized communication. Chatbots or virtual assistants equipped with natural language processing capabilities can understand user queries, provide relevant information and guide individuals through self-assessment processes. By incorporating multi-modal interfaces, such as voice commands or visual cues, AI systems can accommodate individuals with different literacy levels, disabilities, or language preferences.

Addressing Socioeconomic Disparities

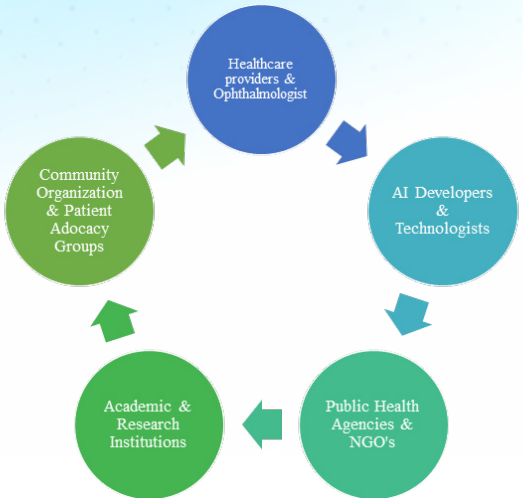
Socioeconomic factors often contribute to disparities in accessing eye care services. However, AI can play a pivotal role in addressing these disparities by providing low-cost or cost-effective solutions. For eg) AI-driven devices, such as portable retinal imaging systems, enables eye examination to be conducted in resource-limited settings, reducing the need for expensive equipment.

Additionally, teleophthalmology initiatives supported by AI can extend eye care services to underserved populations, allowing remote consultations and minimizing travel expenses. Moreover, community-based programs that leverage AI can provide affordable and accessible eye care services, ensuring that cost is not a barrier to receiving essential eye health support.

Portable retinal imaging devices equipped with AI algorithms can capture high-quality retinal images without the need for large, stationary equipment. These devices are cost-effective, portable, and can be operated by minimally trained personnel. They enable eye screenings to be conducted in community health centers, schools, or even mobile clinics, bringing eye care services closer to the communities that need them the most.

Teleophthalmology initiatives, powered by AI, allow remote consultations and follow-up care, reducing the need for patients to travel long distances to receive specialized care.

By leveraging video conferencing, AI-assisted diagnostics, and remote monitoring, healthcare providers can deliver comprehensive eye care services without geographical constraints. This approach not only saves costs but also improves access to specialized care for individuals residing in remote or underserved areas.



Additionally, community–based programs can utilize AI technologies to establish eye care services in community centers, schools, or other accessible locations. These programs can leverage AI-powered screening tools, telemedicine platforms, and local partnerships to deliver affordable and culturally sensitive eye care services. By tailoring services to the specific needs of the community and utilizing cost-effective AI solutions, these programs address socioeconomic disparities and ensure that eye care is accessible to all individuals, regardless of their financial circumstances.

Collaborative partnerships

The successful implementation of AI in expanding access to eye care requires collaborative partnerships between various stakeholders. By fostering collaboration, we can ensure that AI technologies align with the specific needs and contexts of different communities, leading to more effective and sustainable solutions. The below figure explains the collaborative partnerships for the successful implementation of expanding AI in eye care.

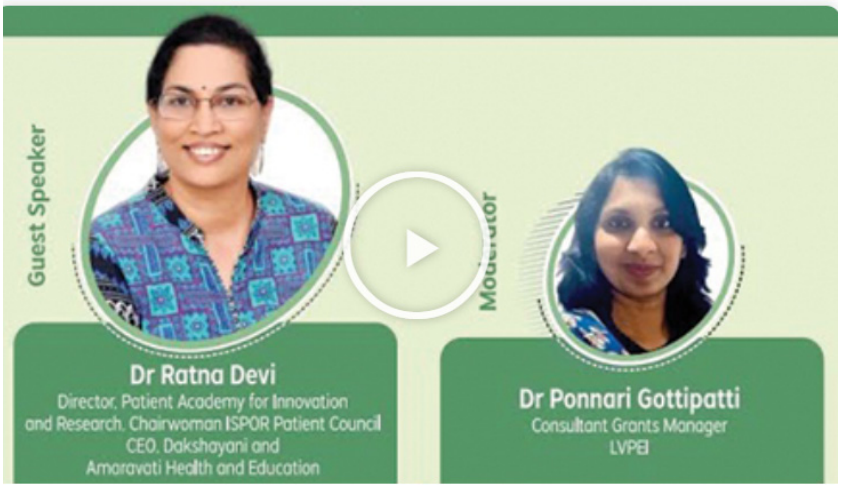
Conclusion

Expanding access to eye care through AI requires collaborative partnerships between healthcare providers, By working together, these stakeholders can ensure that AI technologies are developed, implemented, and validated in a manner that aligns with the specific needs and contexts of different communities. Collaborative partnerships enable the integration of AI into existing healthcare systems, prioritize underserved populations, foster research and evidence-based practices, and ensure patient-centered care. Through these collaborations, we can harness the full potential of AI to overcome barriers and improve access to quality eye care for all individuals.

Ragukumar Venugopal
Research Associate
L V Prasad Eye Institute, IHOPE

Webinars In The Last Quarter

Link to webinar: https://ihope2020.org/events/



Patient Safety and Patient Reported Harm

Link to webinar: https://ihope2020.org/events/

Patient Engagement Webinar

Abstracts For Free Papers

IHOPE is accepting abstracts for free papers in the following specialties

* Big Data & AI
* Clinical research
* Health Economics
* Public Health

GUIDELINES FOR FREE PAPERS

Free paper abstract submission for IHOPE opens on 8th June and closes on 15th July

Specialties

Free papers are accepted in any of the following specialties

Big Data & AI | Clinical Research | Health Economics | Public Health

General Guidelines

- Each member can submit a total of 2 abstracts only
- Abstracts are to be submitted via e-mail only.
- All abstracts undergo an evaluation process.
- Free Paper duration is 7 minutes only.
- No change in presenting author is allowed during Free paper final session.
- Institution / hospital affiliation and presenter's name in the title or abstract should not be mentioned.
- No new author can be added after the submission of Free paper.
- All free paper awards are given to the presenting author only.
- The last date of submission of abstract is 15th July.

Abstract Structure

Purpose, method, result & conclusion, max of 500 words

- Type the details exactly as you would want to be in the slides.

Presenting Author

- Atleast one presenting author should be added. The chief author himself / herself can be a presenting author. It is the duty of the chief author to get consent from the presenting author before adding his/her name.

Add co-authors

- A maximum of 5 co-authors can be added.

Important Note

- Your session during the conference, along with your presentation shall be video-taped for inclusion in the proceedings of the conference.

LV Prasad Eye Institute | Indian Institute of Public Health Hyderabad | IIM Ahmedabad

Clinical Profile and Demographic Distribution of clinically proven Stargardt Diseases: An Electronic Medical Record-Driven Big Data Analytics from a Multitier Eye Care Network.

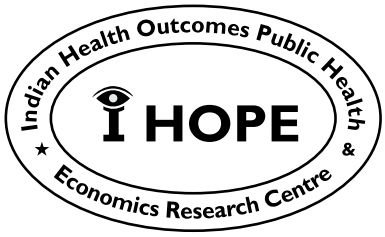
Anthony Vipin Das, FRCS1,2, Ragukumar Venugopal, MPH 1,2, Brijesh Takkar, MS2,3, Sumant Sharma, MS3, Neelima Sharma, MS3 , Raja Narayanan, MS2,3, Deepika Parameswarappa, MS3 , Srikant Padhy, MS3

Abstract: Objective: To describe the demographics and clinical profile of Stargardt disease in patients presenting to a multi-tier ophthalmology hospital network in India.

Methods: This cross-sectional hospital-based study included 2,834,616 new patients presenting between August 2010 and June 2021. Patients with a clinical diagnosis of Stargardt disease in at least one eye were included as cases. The data were collected using an electronic medical record system.

Results: Overall, 1,934 (0.069%) patients were diagnosed with Stargardt diseases. Most of the patients were male (63.14%) and had bilateral (99.44%) affliction. The most common age group at presentation was during the second decade of life, with 626 (31.87%) patients. The overall prevalence was higher in patients from a higher socioeconomic status (0.077%), in those presenting from the urban geography (0.079%) and in students (0.197%). Systemic history of hypertension was seen in 56 (2.85%) patients, while diabetes mellitus was seen in (2.49%) patients. Of the 3,917 eyes, 1,910 (48.76%) eyes had moderate visual impairment (>20/70-20/200) followed by severe visual impairment (>20/200 to 20/400) in 646 (16.49%) eyes. The most commonly associated retinal signs were retinal flecks in 1,260 (32.17%) eyes, followed by RPE changes in 945 (24.13%) eyes. The most documented investigations were autofluorescence (39.85%), followed by optical coherence tomography (23.90). Cataract surgery was the commonest performed surgical intervention in (0.66%) eyes, followed by intravitreal injection in 4 (0.10%) eyes. The family history of parent consanguinity marriage was reported by 212 (10.79%) patients.

Conclusion: Stargardt disease was seen more commonly in males presenting during the second decade of life. It is predominantly a bilateral disease, with majority of the eyes having moderate visual impairment.



Contact : **Ms. Neelima Sharma**, Project Lead

Email : *teamihope2020@gmail.com*

LinkedIn : *www.linkedin.com/company/i-hope*

Twitter handle : *@TeamIHOPE2020*

YouTube : *www.youtube.com/channel/UCYi6qiwL9Iy4RSUJUTFhgcA*

Website : *www.ihope2020.org*