Tackling the cataract backlog – An initiative by the Maharashtra State, India

The biggest irony in an ophthalmologist’s life is that even though cataract surgery is the most commonly performed surgical procedure around which the professional career of most of the ophthalmologists revolves, cataract still remains the most common cause of treatable blindness in India.\(^1\)\(^-\)\(^2\) Cataract is responsible for 50%–80% of bilateral blindness in our country.\(^6\)\(^-\)\(^7\) Recent data from the World Health Organization show that there is a 25% decrease in blindness prevalence in India,\(^8\) and this can be attributed to increased number of cataract surgeries over the years. The delicate balance is offset by the increasing population and life expectancy. The number of people aged 60 years or older was 56 million in 1991 and it doubled by 2016, thus proportionately increasing the number of people at risk of cataract blindness.\(^9\) If we do not take the changing population dynamics and increasing longevity into account, we are bound to have calculation surprises by the year 2020. As ophthalmologists, the elimination of avoidable blindness attributable to cataract backlog should be our primary concern.

**Background**

National Program for Control of Blindness (NPCB) from 1976 and “Vision 2020” since 1999 have been propagating the agenda of elimination of preventable blindness at the national level.\(^3\) As per the NPCB data, the performance of Maharashtra state well exceeded the annual target for 2016–2017.\(^6\) Cluster infections in Beed and Vashim rural districts of Maharashtra, however, resulted in deceleration in the pace of cataract surgical programs in the state, especially in rural areas. The deficient targets were somewhat propped up by increasing the cataract surgery rate in urban areas, often by operating patients with preoperative vision >20/200.

Generally, the programs aimed at elimination of cataract blindness have taken into account the prevalence of cataract and blindness in a particular time frame to set their goals, but the incidence of the disease is equally important to plan effective temporal strategies. Estimating the incidence of cataract is difficult because of the chronicity of the disease itself and uncertainty of its pace of progression to blindness. Conventionally, the incidence of cataract blindness is considered to be 20% of its prevalence.\(^7\) Literature from South Africa and India states the incidence of cataract is between 23% and 30% of prevalence.\(^6\)\(^-\)\(^8\) Assuming that the incidence of cataract causing blindness is 20%, it appears that the cataract surgery rate needs to be increased significantly if the elimination of avoidable cataract blindness is to be a reality by 2020.

Every state in India has certain specific cultural, socioeconomic, logistical, and geographic compulsions, because of which we need to customize the strategies. Specific state-level programs may help run the outreach programs more effectively and in synergy with the ground reality.

**Difficulties**

More than 50% of the population of Maharashtra lives in rural areas, with agriculture as their main occupation. Agricultural responsibilities being season-specific, the months June to September are not conducive for elective surgeries. Even if the surgical procedure itself is financially supported, costs of travel, poor awareness about the disease, and about the availability of treatment have proven to be the barriers to access care. Although Maharashtra state is endowed with district hospitals, lack of an equipped operation theater for ophthalmic microsurgery and deficiency of trained manpower seem to be the stumbling blocks in initiating formal ophthalmic surgical services in each district. Time and circumstances were thus ripe to think out of the box and plan an effective strategy with optimal utilization of governmental logistical and infrastructural outlay.

**Governmental Initiative**

Any large initiative is impossible to roll out without active government support. There should be special mention of the honorable Chief Minister of Maharashtra Mr. Devendra Fadnavis who envisioned “Cataract-free Maharashtra.” Medical Education and Public Health ministers wholeheartedly supported the initiative. Public Health, Medical Education, Tribal Welfare, Social Justice, and Urban Development departments actively partnered in the initiative. Responsibility of coordination and implementation of this ambitious program were shouldered upon me.

**Planning and Execution**

Maintaining uniformity and quality outcome among cataract surgeons participating in the program is of prime importance. We conducted a training program to provide clear and uniform guidelines about the sterilization of instruments, preparation, and maintenance of the operation theater and also the standardized surgical procedure. Department of Ophthalmology at the JJ Hospital, Mumbai, was nominated as the one-point referral center for the treatment of any postoperative complications across the state.

At the outset, to reliably assess the magnitude of the problem, door-to-door screening was conducted by 614 ophthalmic officers in all the districts of the state and a comprehensive cataract registry was prepared. Triage was set up with priority
to patients with bilateral mature cataracts, followed by unilateral mature cataracts and immature cataracts. We involved 552 ophthalmic surgeons [86 public health hospitals with 108 operating ophthalmologists and 47 nonoperating ophthalmologists; 108 nongovernmental organizations (NGOs) with 250 ophthalmologists; 25 hospitals under the Medical Education department with 68 ophthalmologists; 42 hospitals under the Urban Development department with 126 ophthalmologists] in the program. Each surgeon was geared to perform 10 cataract surgeries a day. In all, 98 fully equipped operation theaters were made available. Forty-seven nonoperating ophthalmologists were given responsibility of pre- and postoperative care. In addition, 1400 private ophthalmic surgeons voluntarily joined the program by operating 5–10 patients a month free of charge in their own private hospitals. Economical support for the program was provided by the NPCB, corporates through funds earmarked for corporate social responsibility, NGOs, and private donors. Travel support was provided by nonophthalmic NGOs.

Keeping a strict vigil on the procedures and protocols at every center on a daily basis and monitoring them was a Herculean task. We used social media to create district-wise groups of participating ophthalmologists and their administrative heads and encouraged them to discuss day-today issues while implementing the program. Physical meetings every 3 months in all the district hospitals and a monthly video conference were conducted to learn, analyze, and resolve the problems of the participating ophthalmologists.

Impact

Organization and systematic utilization of the existing resources made a huge difference in merely 8 months, with 456,777 cataract surgeries performed across all the enrolled centers from December 2017 to July 2018. Increase in the number of surgeries has also improved the surgical training of ophthalmology residents. Strict surveillance, obligation to document all the complications, and notifying to the monitoring center have helped maintain the quality of care. There is a definite increase in awareness among the family members of the treated population.

Future Directions

India had achieved a cataract surgical rate (CSR = number of cataract surgeries per million people, per year) of 6000 in 2012. We currently need a CSR of 8000–8700 to eliminate cataract blindness in India.[11] This year we are hoping to achieve this target in Maharashtra.

“Well begun is half done” is never true unless the job undertaken is completed with the same vigor with which it was begun. Increase in the number of surgeries with the available infrastructure remaining the same is not easy and needs strict quality control to maintain the standard of care. There is a huge urban–rural disparity in the proportion of trained ophthalmologists. We plan to outsource ophthalmologists from the urban areas to serve rural population for a particular number of days in a month. Camps well-planned and conducted with strict adherence to procedures and protocols may help serve a large number of patients in a short time.

The project “Cataract-free Maharashtra” is a dream-come-true for me and my dedicated team. This could be easily and effectively replicated in other states of India, especially in those with a relatively daunting cataract backlog. All India Ophthalmological Society (AIOS) can help by creating a National Task Force and collaborate with the national and state governments in providing a uniform policy and protocol and lay down the standard of care and measures of evaluation. AIOS can also augment cataract surgical training and skill enhancement across the country and create a dedicated team of voluntary ophthalmologists.

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About the author

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After completing MBBS and MS in ophthalmology from the Government Medical College, Aurangabad, Prof. Lahane joined the SRTR Medical College, Ambajogai in rural Maharashtra as an Assistant Professor in 1985. He knew the hardships of being born in a poor family but life wanted to test him further. He developed bilateral chronic renal disease in May 1991, for which he needed renal transplant, which brought him to Mumbai. His mother donated him one of her kidneys and he underwent a successful renal transplant in 1995. Ever since he decided to dedicate his life to the needs of the economically disadvantaged strata of the society. He started conducting outreach programs at places where medical facilities were suboptimal. He has conducted 559 eye camps at infrastructurally challenged locations and has selflessly provided very high-quality ophthalmological service at no cost. He has worked as the Dean of the Grant Medical College and JJ Hospitals from 2010 to 2017. With his commendable administrative skills, JJ Hospitals took a major leap forward by acquiring the best of infrastructure, faculty, and patient care services, and is now ranked among the top five hospitals in India. Prof. Lahane must be the only ophthalmologist with a biopic movie on his life and times. He has performed more than 150,000 surgeries by now and has been awarded the prestigious “Padma Shri” by the Government of India in recognition of his relentless services. Prof. Lahane currently is the Joint Director of Medical Education and Research, Government of Maharashtra, and oversees his ambitious “Cataract-free Maharashtra” program.