

Sustainability In The Asia-Pacific

by Lee Mun Wai, MD

“Earth provides enough to satisfy every man’s need BUT not every man’s greed”

— Mohandas K. Gandhi

The human species is racing against time in an attempt to save itself from its own indiscretions. The term “sustainability” has become a quality that many professionals have become familiar with, over the recent years. Climate change represents a major threat to global health in the 21st century¹, with human activities being the main driver of climate change. Health care services contribute significantly to greenhouse gas emissions and it has been estimated that health care emissions contribute up to 5% of global net emissions². As such, eye care as a high volume service (largely due to cataract surgery) would therefore contribute substantially to these emissions.

The Asia Pacific is home to 60% of the world’s population – some 4.3 billion people³. Mitigating the environmental impact of health care in this region poses a significant

challenge, especially with the diversity of culture and health care practices, as well as the varied and often limited resources within specific territories of practice.

Environmental Impact of Cataract Surgery

The term ‘carbon footprint’ refers to the gaseous emissions resulting from the full life cycle of a product or process⁴ and is measured in carbon dioxide equivalents (CO₂-eq). This is used as an indicator of environmental impact and the carbon footprint of cataract surgery can vary from 180kg CO₂-eq in the United Kingdom⁴ compared with 6kg CO₂-eq in India⁵. Despite the hugely contrasting footprints, the vast population of the Asia Pacific region would mean that ophthalmologists still have a role to play in developing more sustainable practices.

NEWS & OPINION

1. Surgical Waste (Figure 1)

Cataract surgery generates waste which can be classified into hazardous (e.g. instruments/drapes contaminated with bodily fluids) or non-hazardous (e.g. product packaging and inserts) categories. The surgical manufacturing industry has also been driven towards single-use instrumentation and this may be related to liability protection as well as profit motives, adding further to waste generation.

2. Energy Consumption

The entire cataract surgical pathway contributes to carbon emissions through energy consumption in the manufacture of instruments, devices and machines, the logistics involved with delivery of goods and travel of patients and the use of electricity and water when expediting cataract surgery itself, all of which can account for up to 36.1% of total carbon emissions⁶.

Economic Viability

Healthcare cost is an important consideration in developing countries, which the majority of the Asia Pacific region comprises. The cost-effectiveness of cataract surgery has to be taken into account when implementing widespread strategies to address cataract blindness intermixed with sustainable practices. Cataract surgical techniques such as Manual Small Incision Cataract Surgery (MSICS), which utilizes less expensive surgical equipment (compared with

conventional phacoemulsification) is particularly important in resource-poor settings.

Social Implications

Sustainability in cataract surgery also encompasses social factors, including the equitable distribution of healthcare services and the empowerment of communities through improved vision. In the Asia Pacific region, rural and remote areas often face significant challenges in accessing healthcare services. It is fundamental to ensure that cataract surgery is accessible to all, regardless of socio-economic status, geographic location, or gender.

Strategies to Improve Sustainability

The future of sustainable cataract surgery in the Asia Pacific region depends on the adoption of innovative practices and technologies that promote environmental, economic, and social sustainability. There has been a focus on sustainability practices in our profession recently, with the EyeSustain initiative (www.eyesustain.org), spearheaded by organizations such as the American Society of Cataract & Refractive Surgery (ASCRS), European Society of Cataract & Refractive Surgeons (ESCRS) and the American Academy of Ophthalmology (AAO). The Asia Pacific Association of Cataract & Refractive Surgeons (APACRS) is also part of this global coalition of eye societies and organizations intending to influence more environmentally-friendly eye care outcomes.



Figure 1⁷: Surgical waste from a phacoemulsification procedure in the UK (A) compared with 32 cases in India (B)



Figure 2⁸: Instructions For Use (IFU) pamphlets printed in multiple languages. Held up on the right are instructions for monofocal IOL and on the left, instructions for IOL cartridges.

1. Improving Education and Awareness

The first step in tackling any problem is to recognise that there is indeed a problem. The individual ophthalmologist often acts in the best interests of the patient in front of them without consideration for the wider implications on the environment and society. We have to consider a change in mindset to configure our delivery of care in a way that also protects the physical environment and acts in the collective interest of public health.

2. Collaborative Efforts

Collaboration between governments, healthcare providers, academic institutions, and international organizations is essential for promoting sustainability in cataract surgery. Sharing best practices, conducting joint research, and implementing coordinated programs can amplify the impact of individual efforts. Working with industry is also crucial as many of the device manufacturers and pharmaceutical companies have started implementing green initiatives and something as simple as electronic Instructions For Use (IFU) pamphlets instead of ones printed on paper (Figure 2) would be an example of a step in the right direction.

3. Policymakers and Regulators

Policymakers continue to play a critical role, and it is important to strike a balance between the risks to the individual and to the population as a whole whilst implementing regulations which govern healthcare practices⁷. Regulations that encourage the use of environmentally-friendly materials and promote equitable access to healthcare services can drive systemic changes towards sustainability.

Conclusion

Sustainability in cataract surgery in the Asia Pacific region is multifaceted, involving environmental stewardship, economic viability and social equity. Addressing these aspects through innovative practices, collaborative efforts and supportive policies can ensure that cataract surgery not only restores vision but also contributes to the broader goals of sustainable development. As the demand for cataract surgery continues to rise, integrating sustainability into every aspect of the process will be essential for delivering high-quality, accessible and environmentally-responsible eye care to the region's diverse populations.

Editors' note: APACRS is a member society of EyeSustain, and Dr. Lee is one of the representatives of APACRS in the EyeSustain Global Council.

About the Physicians

Lee Mun Wai, MD | LEC Eye Centre, 44-46 Persiaran Greenhill, Ipoh, Perak, 30450, Malaysia | munwai_lee@lec.com.my

Relevant Disclosures

Lee: None

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