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CONTROVERSY

Eyes, economics and the environment: should green issues drive changes in ophthalmic care? – No

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We should be thankful to Neil Armstrong's bosses at NASA that they did not adopt the attitude of 'one small step for man, one giant carbon footprint for mankind.' For over 40 years NASA's Innovative Partnerships Program has facilitated the transfer of technology to the private sector, producing more than 1600 spin-offs, including major medical advances.[1] Any discussion regarding the impact of a major industry on the environment must be tempered with acknowledgement of the real-time technological benefits to our lives, both in sickness and in health.

Climate change has been stated as the biggest threat to global health in the 21st century.[2] The clamour to address this political vote winner has led to a flurry of policies designed to improve the carbon footprint of the NHS, such as the Carbon Reduction Commitment scheme.[3] Although well intentioned, they suffer from public cynicism fuelled by media stories regarding 'Climate Gate', which has resulted in the Independent Climate Change Email Review.[4] The policies correctly identify inefficiency and poor resource management, highlighted because of the financial recession, but seek to address it by appealing to the need to protect the world for future generations.[5] Should global environmental policies be the driver to address these complex and often local issues?

The GMC states that the duty of a doctor is to make the care of their patient their first concern. Therefore, patient care should be the 'trump card', which governs future healthcare policy, rather than the fashionable 'carbon footprint' lobby. When a patient interacts with the NHS, both the clinician and patient's immediate concern is for high-quality clinical care to ensure a successful outcome. Global environmental issues are mainly irrelevant at that acute point in time.

The quality of patient care is not improved by carbon reduction, nor can it be directly measured against carbon metrics. Patient care is improved by embracing new technology and medical advances, expensive in the short term but cost effective when adopted to address or prevent complications, ensuring better patient outcomes. A good example of this is the Pascal laser used for pan-retinal photocoagulation, where low fluence patterned burns enable a faster, more comfortable treatment.[6] This increases the number of patients who can be treated at presentation during a diabetic clinic, hopefully avoiding future comorbidity and complex surgical interventions. The NHS Quality, Innovation, Productivity and Prevention challenge should reflect this long-term view of investment.[5,7–9]

The cost of implementing sustainable carbon neutral healthcare in ophthalmology may not be as cost saving as it appears. This has been shown through the comparison of single use disposable corneal forceps with reusable items.[10] Despite the hidden financial and environmental disposal costs, this approach avoids the problems associated with instrument damage during reprocessing or reuse. Unreliable equipment can delay and compromise patient care in the emergency management of corneal graft sutures. The guaranteed reliability of high quality disposable micro-instruments is invaluable, preventing frustration and maintaining patient confidence, particularly in the 'out of hours' setting. It also reduces the much greater costs of unnecessary

and wasteful use of theatre resources, all derived from inadequate micro-surgical equipment.

Advances in surgery have permitted the 'alphabet soup' of specific corneal lamellar grafting, reducing the risk of rejection episodes and vastly improving the quality of life for recipients.[11,12] Use of new technologies such as the femtosecond laser, coupled with effective surgical planning, could enable the corneal eye bank to send customised pre-cut corneal buttons, allowing both anterior and posterior procedures to be sourced from the same donated cornea, and used on the same list.[13] Widespread implementation of simple surgical advances such as the routine use of intra-cameral cefuroxime in cataract surgery will reduce the burden of endophthalmitis. The ESCRS findings could easily be adopted as an interim policy even if the jury is still researching more expensive antibiotic options.[14] Surgeons would benefit from better computer simulations for intra-ocular surgery to improve techniques and reduce complication rates.[15]

Implementing medical advances can be expensive, as shown by the difficulties in providing anti-VEGF treatment for the ever-expanding cases of wet AMD. There is a duty for NICE to address the issue of cost-effectiveness between bevacizumab (Avastin) and ranibizumab (Lucentis), particularly, in light of worldwide evidence-based practices for all forms of retinal vascular disease.[16–18] Expensive infection control policies have impacted the ophthalmic clinics. The theoretical risk of prion transmission has led to the widespread use of disposable prism tonometers, despite the overall cost implications.[19] The form of eye drops in clinical use is governed by potential patient contamination. This includes the increased cost of single-dose preparations in patient examination.[20] There is a benefit in reducing risks of transmission and subsequent infection, but the costs greatly increase as the reduction tends towards zero.[21] A recent survey showed significant inconsistencies in pre-operative MRSA screening practice in ophthalmology, with obvious cost implications.[22]

Telemedicine is under-used within ophthalmology, and could be used within eye casualty to reduce unnecessary hospital attendances generated from primary care or optometric practices.[23,24] A barrier to this is the vast inequality between technology available in optometric practice compared with the hospital eye service, which would need to be addressed to advance telemedicine and virtual consultations. However, cost saving measures such as virtual clinics through OCT reading centres must not be allowed to compromise the holistic care benefits of the doctor–patient relationship. Increasing availability for point of care testing for adenovirus in the primary care setting could reduce costs from unnecessary antibiotic use in viral conjunctivitis and future drug resistance.[25]

Embracing better technology and medical advances should enhance the doctor–patient relationship, and address conditions early, rather than having to deal with the more complex and expensive complications from neglect, delays, or mismanagement. Better resource allocation will improve efficiency and outcome through a long-term perspective on investment.[5,8] Any disinvestment policy should have a positive agenda, rather than simply cutting costs.[7] Being a good steward of the health budget is not solely an issue for times of financial recession, and does not require a climate change slant to be adopted. It is just common sense.

Conflict of interest

The authors declare no conflict of interest.

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