Title: The Inverse-Research Law of Global Eye Health

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Dawson et al recently observed that, relative to the burden placed on health care services in the UK, some sub-specialty areas of ophthalmology are under-represented in the patient-centred research efforts supported by the National Institute for Health Research.[1]

At the global level, however, we propose that there is an even larger disparity between the magnitude of the major causes of blindness and the amount of recent research addressing these. Here we use *wordclouds* (wordcoulds.com; Vianen, The Netherlands) to illustrate this disparity, with the font size proportional to relative frequencies. The relative magnitude of causes of blindness globally is illustrated in Figure 1, using data from the Global Vision Database.[3] Cataract and uncorrected refractive error dominate, yet countries struggle to identify implementation approaches that work well. In contrast, the global ophthalmic research focus is depicted in Figure 2. This was quantified by the frequency of Medical Subject Headings (MeSH terms) in articles published in 19 core ophthalmic journals in the 5 years to 2014.[2]

These figures suggest there is an "*inverse-research law"* in global eye health research, with the leading causes of blindness receiving little attention. This is analogous the *inverse-care law*, which highlights the well-established observation that those with the greatest health needs often have the least access to services.[4]

Low- and middle-income countries carry disproportionately high levels of blindness. These countries invariably have to develop national eye health programs informed by very little context specific evidence to guide implementation of effective approaches.[5]

There is clearly a justification for acting in the national self-interest when setting priorities for publicly funded research programmes. However, given the UK's commitment to the United Nations Sustainable Development Goals, with the headline aspiration of "leaving no one behind", we believe the UK has a role to play in supporting low- and middle-income countries to generate the evidence they require to improve eye health in their populations. To achieve this, we call for research funding allocation to aspire to better reflect the causes of the global burden of eye disease.

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Titles to figures

Figure 1 - Relative magnitude of causes of blindness globally

Figure 2 – Relative frequency of MeSH terms from core ophthalmic journal articles