**Cover page**

**The Sustainable Development Goals and implications for eye health research**

Clare Gilbert1 and GVS Murthy1

1International Centre for Eye Health, Department of Clinical Research, London School of Hygiene & Tropical Medicine, UK

**Corresponding author**

Clare Gilbert

International Centre for Eye Health

Department of Clinical Research

London School of Hygiene & Tropical Medicine

Keppel Street

LONDON WC1E 7HT

clare.gilbert@lshtm.ac.uk

+44 207 958 8332

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**Running head**

Sustainable Development Goals and eye health research

On Friday 25th September 2015 world leaders met at the United Nations Sustainable Development Summit in New York and committed to the 17 Sustainable Development Goals (SDGs) which follow on from the Millennium Development Goals (MGDs). The SDGs are very broad and ambitious in scope, with 169 global, social and environmental targets and indicators that UN member states are expected to achieve by the year 2030 (1). The SDGs are transformational, with the vision of “a world with equitable and universal access to quality education at all levels, to health care and social protection, where physical, mental and social well-being are assured”. In terms of health and well-being, member states are charged with achieving universal health coverage and access to quality health care.

Several of the MDGs relate directly or indirectly to eye health (2), as do the new SDGs. For example, there is increasing evidence that poverty is both a cause and consequence of blindness, with cataract surgery improving household economic status, for example, so contributing to Sustainable Development Goal 1: “End poverty in all its forms everywhere” (3). Many sight restoring interventions improve quality of life (4,5), participation and engagement in income generating activities, as do interventions for prevention of visual loss from conditions such as diabetic retinopathy, an important cause of visual impairment among those of working age in high income countries (6). These eye care interventions contribute to Goal 3: “Ensure healthy lives and promote well-being for all at all ages”, and to Goal 8: “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. Global efforts to scale up the SAFE strategy for trachoma control (7) will contribute to Goal 6: “Ensure availability and sustainable management of water and sanitation for all”. However, as indicated in a recent Editorial in Ophthalmic Epidemiology (8), Goal 10: “Reduce inequality within and among countries” remains a challenge in relation to eye disease and visual impairment within all countries regardless of their level of development (9,10).

A key question is, how might the SDGs guide priorities for research in relation to eye health? There seem to be four key areas: research which promotes the scale up of effective treatments or preventive measures, particularly amongst those with poorer access; studies which focus on quality assurance of eye care delivery; research on barriers and solutions to achieving universal eye health care, as promoted by the World Health Organization’s Global Action Plan 2013-2020 (11), and lastly, evaluation of interventions for conditions where effective and acceptable treatments or preventive measures are not yet available.

Research which leads to the scale up of effective treatments would entail identifying subgroups in the population with poorer access, identifying their barriers to access, and designing and evaluating scalable interventions which promote access and uptake. Despite multiple papers which report barriers to the uptake of cataract surgery, for example, there is very limited evidence on which interventions are effective at improving uptake, particularly among disadvantaged group (12). As many of the interventions are likely to be complex, suitable methodological approaches will be required, including formulation of a theory of change, followed by formative research to explore barriers, assumptions, processes and potential outcomes. The findings can then be used to evaluate the intervention, using a design which can detect change in order to measure effectiveness. Engagement of those who have the potential to take the intervention to scale at the outset is a critically important element. Such implementation science, defined as *“*the study of methods to promote the integration of research findings and evidence into healthcare policy and practice”(13) although increasingly used in other areas of health, has not been widely adopted by eye health researchers.

Addressing the other key research areas will require health services and health systems research, such as addressing the integration of screening for sight threatening diabetic retinopathy into services for diabetics for example, exploration of the impact of different health financing mechanisms and the role of the private sector, for example. Epidemiological research, such as clinical trials, will be required to address the evidence gaps on effective and acceptable treatments or preventive measures, with treatment of glaucoma in low income settings being a priority.

Recent global data on the magnitude of blindness from the Global Burden of Diseases Vision Loss Expert Group indicate that two thirds of the 32.4 million people who were blind in 2010 had a treatable or preventable cause (14). The challenge for eye care researchers is to generate the evidence needed by policy makers, programme planners and eye care service providers in order to address the current need as well as the increasing challenges posed by the an expanding and aging population and the complications of non-communicable diseases.

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