

# Cataract Surgical Coverage

**An important indicator for eye health and for monitoring  
progress towards Universal Health Coverage**

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Cover photo courtesy

**HelpMeSee,**  
**a global campaign to end**  
**cataract blindness**

## Acronyms and abbreviations

CSC	Cataract Surgical Coverage
EMR	East Mediterranean
GAP	Global Action Plan (for the Prevention of Avoidable Blindness and Visual Impairment 2014-2019 – Towards Universal Eye Health)
GDP	Gross Domestic Product
IAPB	International Agency for the Prevention of Blindness
IOL	Intra-Ocular Lens
IP	International Partners: non-state organisations operating internationally and at local levels
NGO	Non Government Organisation
PPP	Purchasing Power Parity
RAAB	Rapid Assessment of Avoidable Blindness
RACCS	Rapid Assessment of Cataract Surgical Services
SDGs	Sustainable Development Goals
WB	World Bank
WHA	World Health Assembly
WHO	World Health Organization

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## Foreword

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Cataract is a condition that will affect the majority of people as they enter later life. Those fortunate enough to live in wealthier countries will probably have their cataracts treated before they cause significant vision problems and will enjoy a successful outcome that restores good vision for the rest of their lives. But for many people living in less well-resourced parts of the world it is a very different case. Cataract continues to be the major cause of blindness in the world, responsible for half of global blindness. As this report shows cataract surgical services are not accessible to vast numbers of the world's population.

There have been recent indications that the importance and positive impact of cataract surgery is being recognised by policy makers beyond the eye care world. The World Bank's inclusion of cataract surgery as one of 44 "Essential Surgeries" within its series of publications on disease control priorities is important and welcome. Likewise the recent and seminal World Health Organization and World Bank report on Universal Health Coverage (UHC) monitoring which has listed Cataract Surgical Coverage as one of just 13 treatment indicators to measure global progress towards UHC.

This IAPB report looks at the current availability of reliable national data on cataract surgical coverage (CSC). It shows how disaggregated coverage data provide valuable information on the effectiveness of eye health programmes and which sectors of the community are failing to access cataract surgery. The data clearly show that most countries in this study are falling well short in terms of ensuring access to cataract surgery for much of their population.

The report affirms the huge potential of using the cataract surgical coverage as an indicator for the monitoring of UHC. It concludes by making recommendations to governments and International Partners that will contribute not only towards achieving universal health coverage, a target within the Sustainable Development Goals (SDGs), but also the elimination of the main cause of avoidable blindness.



# Introduction

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Cataract is responsible for the blindness of an estimated 20 million people. Another 74 million people are visually impaired and of the total 90% live in developing countries<sup>1</sup>. It remains the main cause of avoidable blindness worldwide despite the wealth of evidence showing the cost effectiveness, the socio-economic benefits and the relative simplicity of carrying out cataract surgery, not to mention the impact that the treatment of cataract can have on a person and their family's life.

Cataract surgery is one of the most widely undertaken surgical procedures globally. It has recently been recognised by the World Bank as an “essential surgery”<sup>2</sup> i.e. one of a group of 44 surgical procedures deemed essential on the basis that they address substantial needs, are cost effective and can be feasibly implemented.

Cataract Surgical Coverage (CSC) is an indicator that assesses the extent cataract surgical services are meeting the need. CSC is identified within the WHA resolution 66.4 “Universal eye health: A global action plan 2014 -2019”<sup>3</sup> (GAP), as a key indicator to be collected to monitor progress on reducing the prevalence of avoidable blindness and visual impairment. CSC is defined in the GAP as:

*“The proportion of people with bilateral cataract eligible for cataract surgery who have received cataract surgery in one or both eyes (at 3/60 and 6/18 level)”*

As people may have cataract surgeries on just one or both eyes it is possible to calculate CSC for “persons” or for “eyes”. In this report we refer to CSC for persons in keeping with the GAP and in order to contribute to UHC measurement.

This paper supplements the first WHO/World Bank Universal Health Coverage (UHC) monitoring report where CSC is identified as one of thirteen UHC indicators<sup>4</sup>. It provides further evidence on the availability of national CSC data obtained from RAAB and National Blindness Prevention Surveys. Data from 27 countries are presented that demonstrate:

1. Inequities between countries in CSC
2. The influence of country wealth and government health expenditure on CSC
3. Inequities within a country, with a particular focus on access to cataract services by gender
4. Successful outcomes of cataract surgery – an additional indicator that measures quality of surgery, also derived from RAAB surveys

The paper confirms that it is beneficial for governments to collect CSC data and use CSC as an indicator both for the strength of their eye health system but also in their measurement of UHC. It highlights how approaches which tackle inequities in access are paramount to have a significant impact on reducing avoidable blindness and visual impairment.

# Methodology and data sources

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This paper is based upon CSC data (for persons) in 27 countries. In each country CSC data were available at three different presenting visual acuity<sup>5</sup> cut offs: <3/60, <6/60 and <6/18. For each country disaggregated CSC data by gender were available. These CSC data are shown in Appendix 1, Table 1 and were derived from two main sources:

1. The majority of RAAB studies conducted to date have measured access to cataract surgical services in sub-national geographic areas, which cannot be interpreted to represent the national picture. However some RAABs have been conducted that provide national information – the CSC data from 22 such national studies were provided by Dr Limburg from the information stored within the RAAB repository. For a further three countries, Nepal, Vietnam, and Malaysia, in which several RAAB studies have been conducted, it was possible to obtain national estimates using weighted averages.
2. A number of national prevalence studies in large populous developing countries were carried out early this century, including in Nigeria (2005-2007) and Pakistan (2003-2006). As with the RAABs, these provide information on CSC. CSC data for Pakistan were obtained from published sources<sup>6</sup>. CSC data for Nigeria were provided by Professor Clare Gilbert and Dr Selvarej Subramaniam the principle investigator and statistician involved in the original survey. CSC data available from the two national surveys in Nigeria and Pakistan contained further disaggregation by geographic area, urban / rural location, age, and literacy. These additional data are shown in Tables 2 and 3 of Appendix 1.

RAAB and national surveys also provide data on the proportion of cataract surgeries that result in a presenting visual acuity of  $\geq 6/18$  post operatively in the operated eye. 23/27 of the countries had these “successful outcome” data readily accessible as shown in Appendix 1, Table 1.

The World Bank International Comparison Program Database was accessed to provide data for:

Gross Domestic Product (GDP) per capita converted to international dollars using purchasing power parity (PPP) rates<sup>7</sup>.

Government health expenditure per capita, current US\$<sup>8</sup>.

For GDP and health expenditure, the data were accessed for the year in which the RAAB study providing the CSC data was conducted. GDP data were available for 24/27 of the countries and health expenditure data for 26/27 countries as shown in Appendix 1, Table 1.

Dr Jennifer Evans entered the data into Stata software (StataCorp, Texas, US.) and fitted linear regression lines to the graphical plots. Analyses were done in Stata 14 and Microsoft Office Excel.



Bangladesh cobbler at work post surgery.

Photo by  
**Shashi Mohon Das/Seeing is Believing**

## Limitations of the data used in this report

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As data from just 27 countries were available that provided national CSC, this represents only about 1/7th of the total number of countries in the world. Furthermore the 27 countries are not a representative sample – the inclusion criteria simply being if data were available. This makes the drawing of “global” conclusions infeasible.

The 27 countries are not drawn equally from around the world; 10 are Latin American countries, 8 are Asian, 6 are African, 2 were Eastern Mediterranean and there was just 1 European country. In some sections of this report we have grouped 26 countries into three broad geographic areas – Latin America, Asia & East Mediterranean and Africa and made some comparisons about CSC of the countries within these groupings – but this should not be construed as representative of larger regional performance.

## Finding 1 Much progress is needed to achieve universal access to cataract surgical services

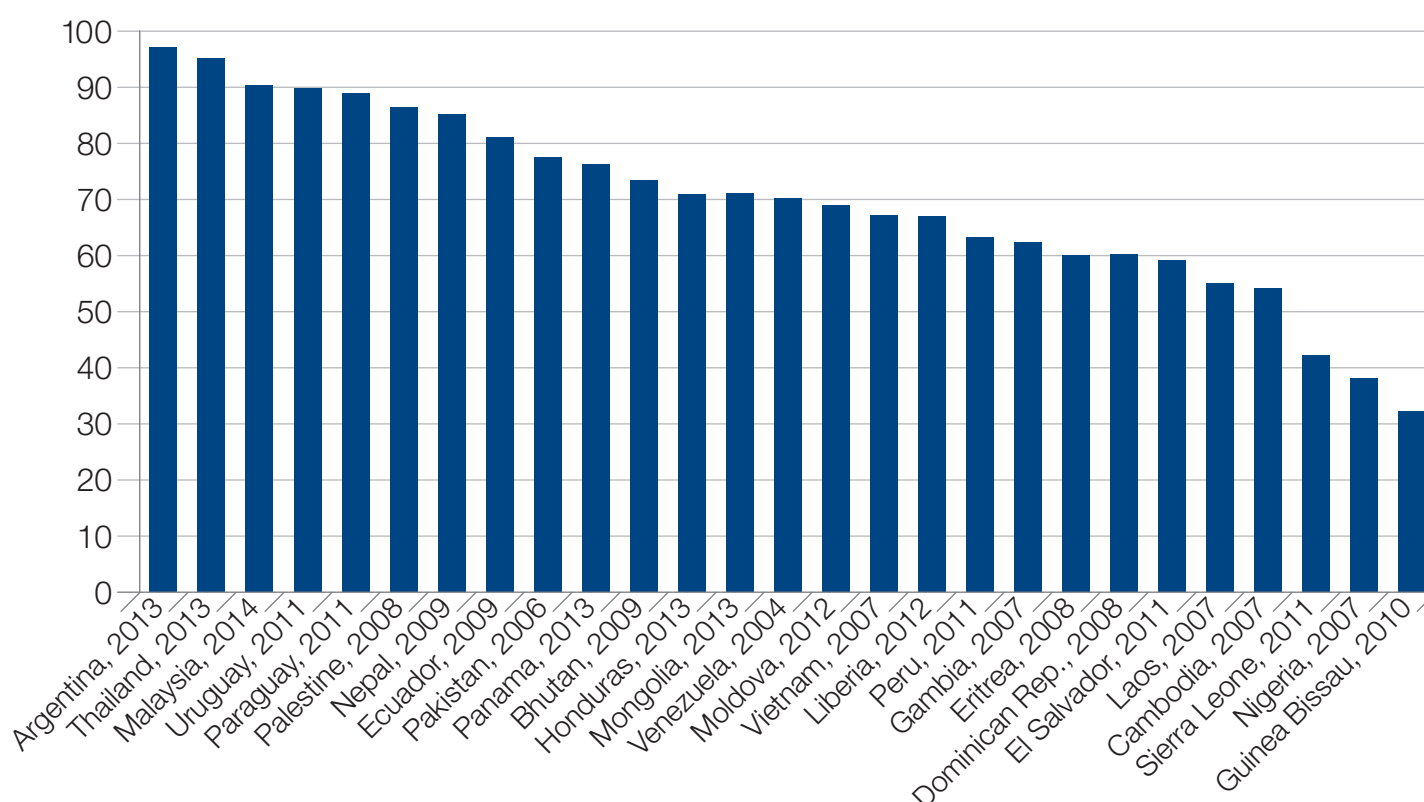
### Observation 1

Of the 27 countries one third achieved a cataract surgical coverage of 80% or higher at <3/60 and a half achieved 40% or higher coverage at <6/18.

Across the 27 countries, there is a wide degree of variation in terms of people's access to cataract services (Figure 1). Many countries are left with quite some way to go to achieve universal coverage. There are some positive examples with eight of these countries, led by Argentina, achieving coverage in excess of 80% at a preoperative visual acuity of <3/60 (blindness). In the sample the Latin American countries generally fare better than the African countries. Nigeria and Guinea-Bissau have the biggest challenges to overcome with CSC at <3/60 of under 40%.

Though there is no internationally accepted target as to what constitutes an adequate CSC, the 80% threshold has been used in discussions around the UHC target to be included within the Sustainable Development Goals. Where CSC is low, large numbers of these countries' populations remain avoidably blind due to cataract. Even where countries are reaching 80% coverage, it is likely that people from the poorest or more excluded sections of society such as persons with disabilities, minority groups and people living in remote areas will not get access to the services they need.

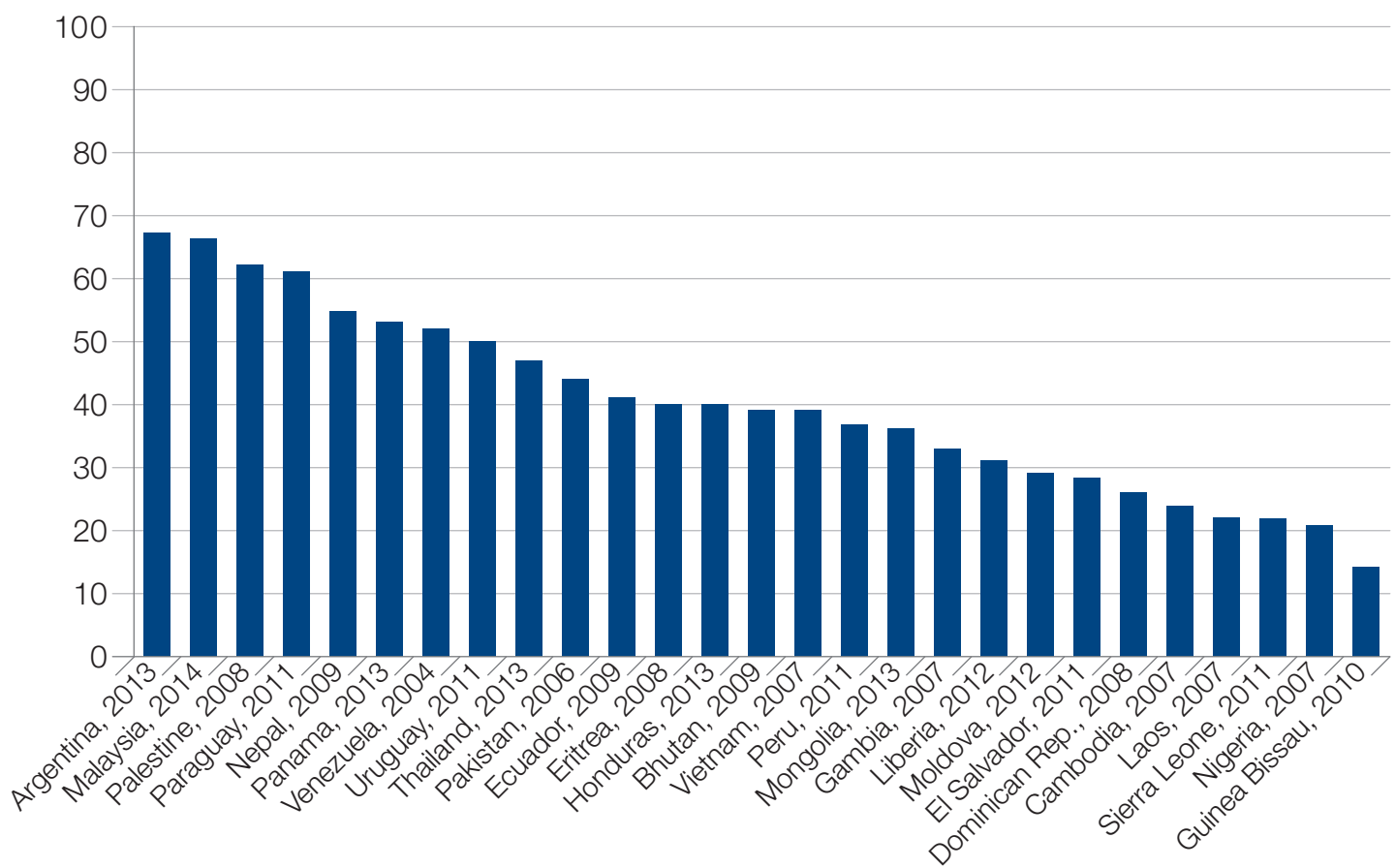
**Figure 1. CSC in 27 countries – visual acuity of <3/60**





At a preoperative visual acuity of <6/18 lower cataract surgical coverage rates are observed (Figure 2). It is concerning that few countries are succeeding in preventing visual impairment caused by cataract before the impairment becomes severe. The data shows 14/27 countries achieved less than 40% coverage at <6/18.

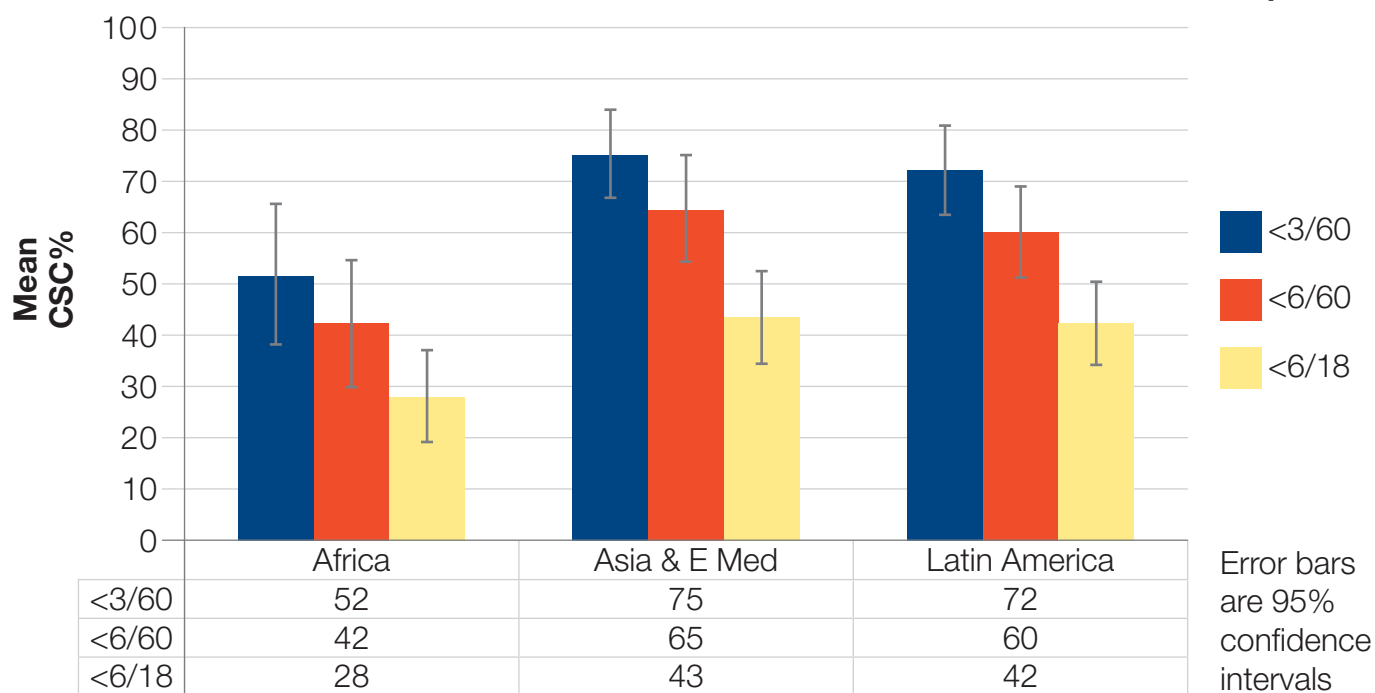
**Figure 2. CSC in 27 countries – visual acuity of <6/18**



Some countries perform well at some visual acuity levels compared to other countries, and not so strongly at others, such as Thailand which is very highly ranked at <3/60 (blindness) and not so high on <6/18 (moderate visual impairment).

Figure 3 shows the mean CSC at different acuity rates for the Latin American, Asian & East Mediterranean, and African countries included in this sample. The mean CSC in the six African countries was notably less than the mean for the countries in other parts of the world. This is reflective of the extent of challenges to eye health in many African countries, the dearth of human resources where there are less than 1% of the world's ophthalmologists and serious shortfalls in the eye health personnel at all levels, aside from other challenges to demand and supply<sup>9</sup> such as inaccessible services.

**Figure 3. Mean CSC at three visual acuity levels for the 10 Latin American, 10 Asian & Eastern Mediterranean and 6 African countries in this sample**



In all three parts of the world the CSC at <3/60 was higher than at <6/60 with CSC at <6/18 being appreciably lower. A number of factors may contribute to this including strategies to target people who are blind or close to blind, eye surgeons who may prefer to operate on patients with relatively poor vision, “because such patients appreciate any improvement”. Sometimes patients don’t seek help until their sight is quite poor (late reporting) which depending on context may be due to costs of surgery, and in some countries with limited resources there is not enough capacity to operate on the much larger numbers of earlier cataracts.

Without doubt it is important to target those who already have severe sight loss or are blind. However treating those with moderate sight loss i.e. at the early stages of cataract development is also extremely important. It can prevent the negative impacts of sight loss on the individual which can include social and economic exclusion, depression and poverty. Even in poor countries society will benefit in providing early cataract surgery because it reduces care costs and enables people to remain economically productive<sup>10</sup>.

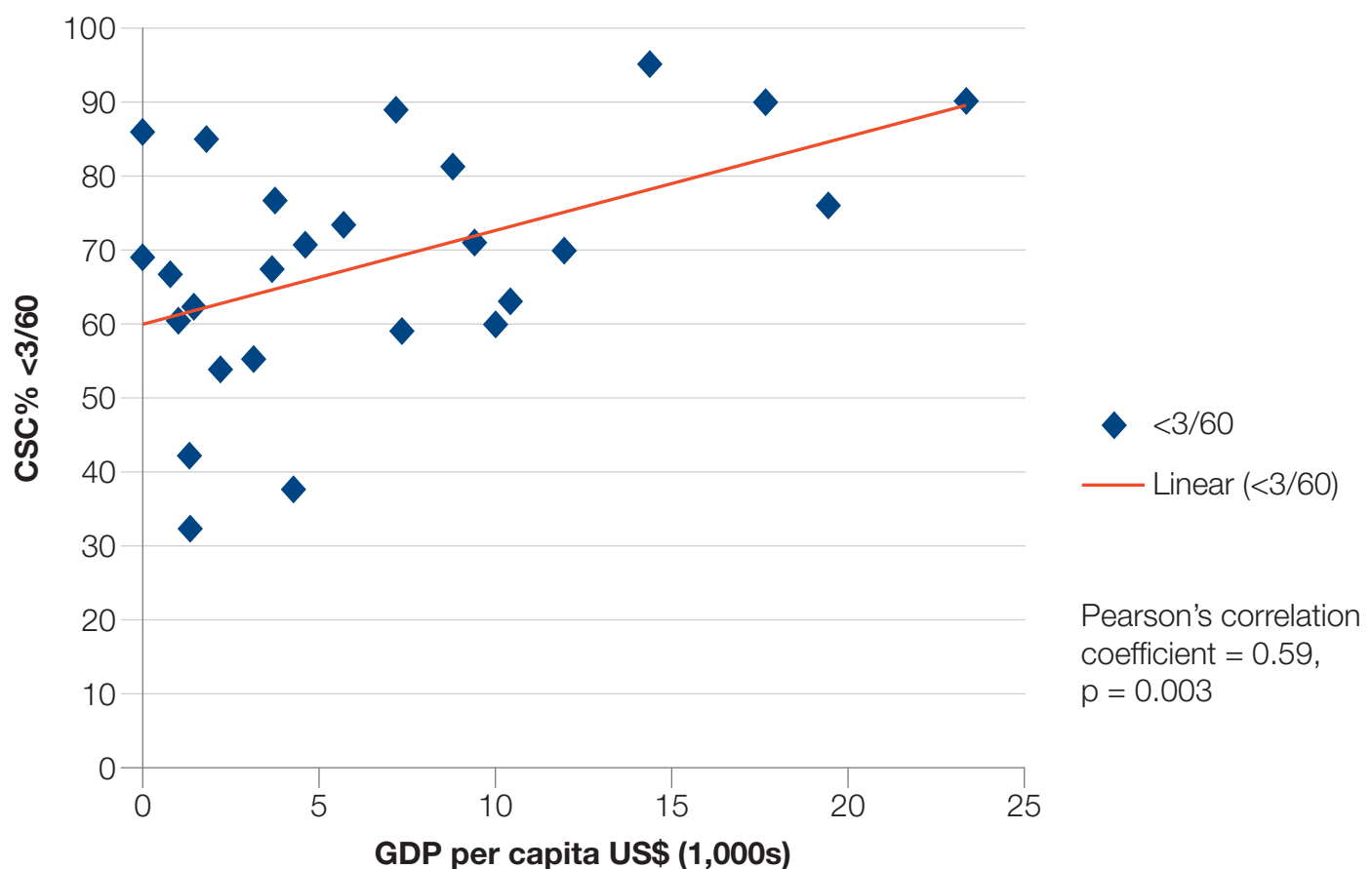
## Finding 2 There is a correlation between Gross Domestic Product and government health expenditure with CSC

### Observation 2.1

CSC improves as GDP increases, though there is considerable variation with some poorer countries outperforming wealthier countries.

It has long been known that the effectiveness and coverage of many public health interventions is highly influenced by economic determinants<sup>11</sup>. The data show that CSC is no exception. Considering the 24 countries of this study that had available GDP data CSC is generally higher as GDP per capita increases (Figure 4) but with some countries with low GDP per capita significantly outperforming some countries with considerably higher GDP.

**Figure 4. CSC for 24 countries, at visual acuity of <3/60 versus Gross Domestic Product per capita**

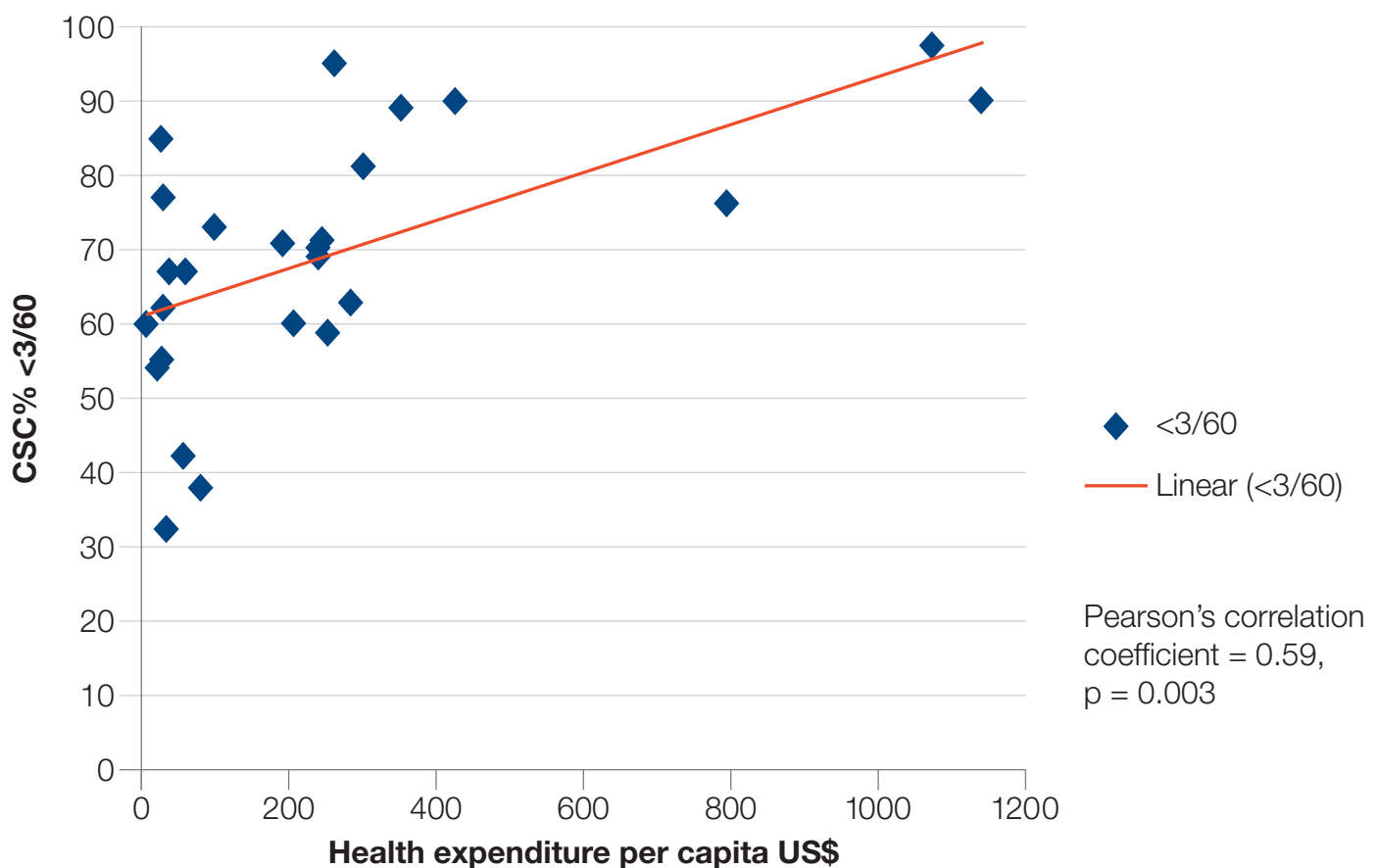


### Observation 2.2

CSC increases as government expenditure on health per capita increases, but there is a variation with some of the countries that spend less on health having higher CSC rates than those that spend more.

The amount of government health spending also tends to have a positive relationship with CSC across the 26 countries where expenditure data were available (Figure 5). Also, as with GDP, it is notable that there is considerable variance with some countries with low health expenditure per capita having good CSC whilst some countries with higher health expenditure having lower CSC. More detailed information on eye health budgets and expenditure would however provide fuller understanding regarding health financing and the outcomes, as in some cases there may be higher health expenditure spends but eye health may not be prioritized.

**Figure 5. CSC for 26 countries, at visual acuity of <3/60 versus government health expenditure per capita**



Nepal is one of a few countries notable in terms of achieving good CSC despite its low GDP and health expenditure. In 2009 CSC in Nepal was 85% at <3/60 and 54% at <6/18, yet expenditure on health was only IntUS\$29 per capita and its GDP per capita was IntUS\$1,867 (PPP).

Enormous strides have been made in Nepal in the reduction of prevalence rates of avoidable blindness and visual impairment between 1981 when the first National Blindness Study was carried out and 2009 when the latest series of RAABs were conducted. In spite of this progress, underlying concerns have been voiced – there is a lack of integration with mainstream health, 63% of people are operated in NGO hospitals, 25% in eye camps, and only 6% in government hospitals, and 5% in private hospitals. Only a small proportion of health expenditure goes to eye health and only about 10% of total eye care expenditure is funded by the government; and more work needs to be done to reach people in remote areas. Continuing the integration of eye care into the general health care system at community level would lead to longer term sustainability and more equitable access.



**Finding 3** Disaggregated CSC illustrates differences in access to cataract surgical services for men and women. In many poorer countries, and particularly in the African countries in this sample, women have worse access than men, though in a minority of countries it is men who fare less well.

#### Observation 3.1

CSC for most of the 10 Latin American countries is at parity or tends to favour women, whilst in all but one of the 16 African, Asian and Eastern Mediterranean countries men generally have greater access.

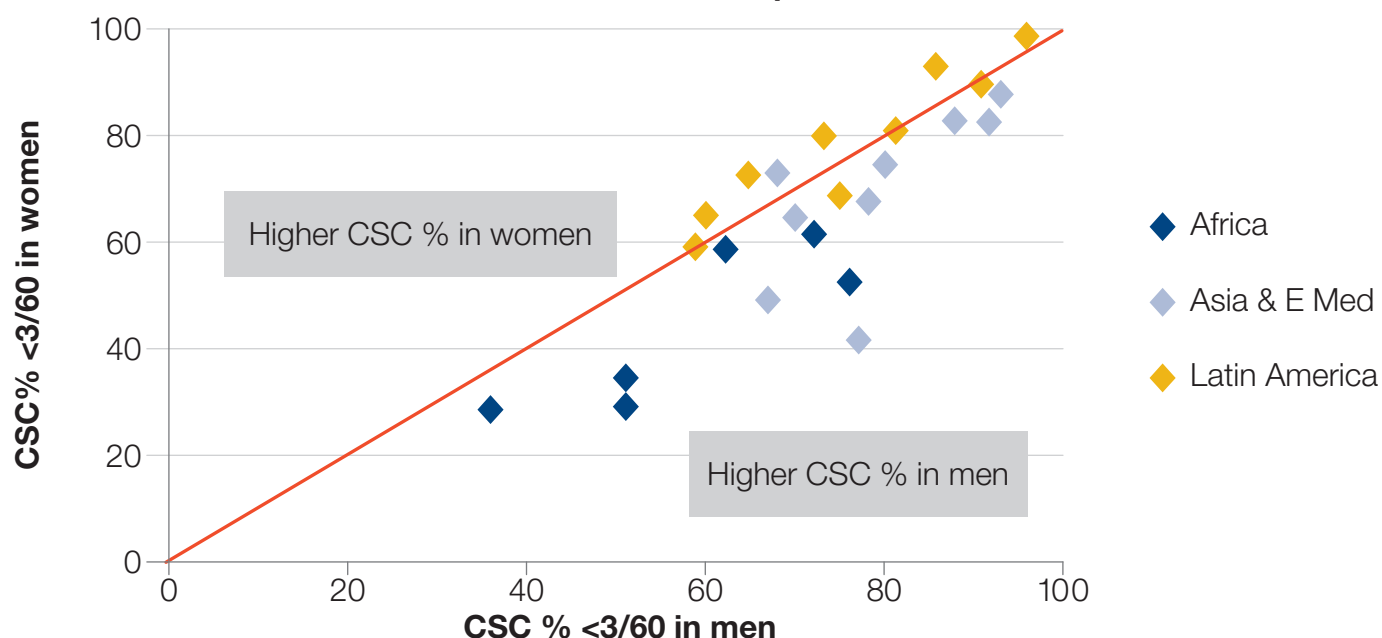
#### Observation 3.2

There are a few countries where there are very significant differences between the coverage of men and women and in each of these it is men that have greater coverage.

When CSC rates for men and women are compared CSC can become a powerful indicator to illustrate inequities in access to cataract surgery. Findings from the countries in this study show that there is a disparity in terms of coverage for women versus men in a majority of countries (Figure 6). In all but one of the African, Asian, and Eastern Mediterranean countries men are more likely to have access to cataract services. By contrast, with some exceptions, CSC for the Latin American countries was at parity or favoured women.

Laos, Nigeria, Sierra Leone and The Gambia have very significant gaps in terms of coverage for women. At visual acuity  $<3/60$  in Laos coverage for men is 77% compared to women 42%, in Nigeria it is 51% and 30%, in Sierra Leone 51% and 35%, and The Gambia 76% and 53% respectively.

**Figure 6. CSC for men and women at  $<3/60$  in the 10 Latin American, 10 Asian & East Mediterranean and 6 African countries in this sample.**



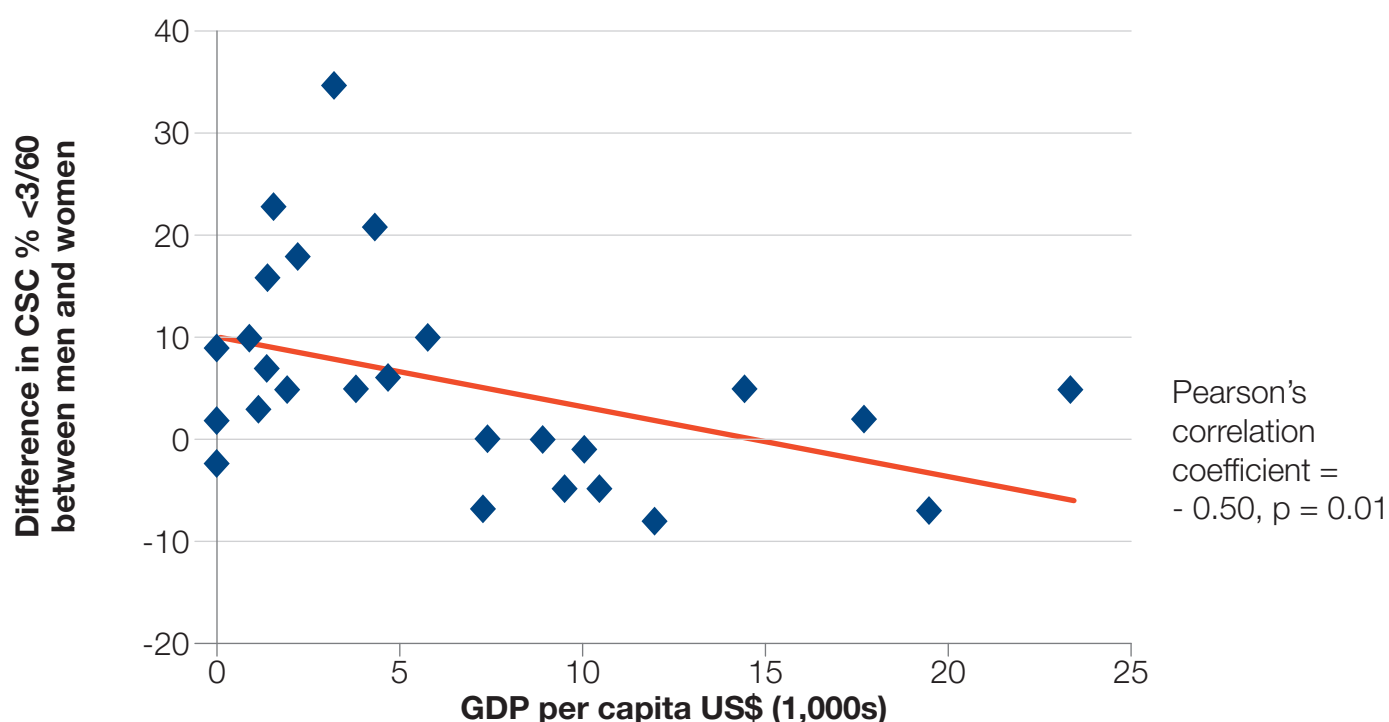
**Observation 3.3**

In wealthier countries women appear to have equal or even higher coverage (this is particularly true at the most severe vision loss <3/60); in poorer countries men are more likely to have higher coverage.

When considering countries' CSC and gender in relation to wealth, (GDP per capita) a pattern is apparent (Figure 7), suggesting that in poorer countries women have worse access to cataract surgical services than men, whereas in higher income countries there is parity or in some cases, greater access for women.

13/24 of the countries have a GDP per capita of less than Int.US\$6,000 and in all of these women had a lower CSC rate than men at <3/60. This may suggest that in poorer countries women are less likely to be prioritised in the family when it comes to their health needs, in this case cataract, and that a lesser importance is attributed to saving their sight. It can be expected that the reasons for this are context specific, and a number of structural factors may interplay related to gender relations in a country. In the poorer countries the barriers might be financial including cost to travel to and attend surgery, and/or that men are favoured if earning more or considered to be the head of a household, or the barriers to women's coverage could reflect other aspects such as restrictions on women's travel.

**Figure 7. Difference between CSC rates for men and women in 24 countries compared with the Gross Domestic Product per capita**



In higher income countries generally the coverage is at parity or better for women, which may be due to health systems and policies that are better developed, due to fewer barriers for women in these countries, and possibly better health seeking tendencies of women. As eye health policies and programmes are designed and delivered it is essential to take account of the particular causes that may be inhibiting access for both sexes. RAABs and national blindness surveys can provide important information for planners and policy makers on such barriers for both men and women.

## **Finding 4** Residence in urban or rural locations and literacy affected access to cataract surgical services in Nigeria and Pakistan, as well as gender

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The more detailed CSC data from the national surveys in Nigeria and Pakistan (Tables 2 and 3 of Appendix 1 respectively) provide further information of factors that affect access to cataract surgery.

In Nigeria there are notable differences in coverage across the sexes. There are also considerable disparities between rural and urban areas. At the <3/60 acuity level there is 58% coverage in urban areas compared to 32% in rural areas, at <6/18 coverage is 33% and 17% respectively. When considering locations most zones have similar levels of coverage with the exception of the South-South zone, where coverage is extremely low, 24% at <3/60 and 9% at <6/18. For rural women the situation is worse compared with men, and for women living in the South-South the difference is stark. Their coverage rates for women are less than a quarter of their male counterparts; they have the worst levels of coverage in the country. Large differences were also noted between the coverage rates for those that are literate compared with illiterate members of the community, 59% compared with 32% at the <3/60 level.

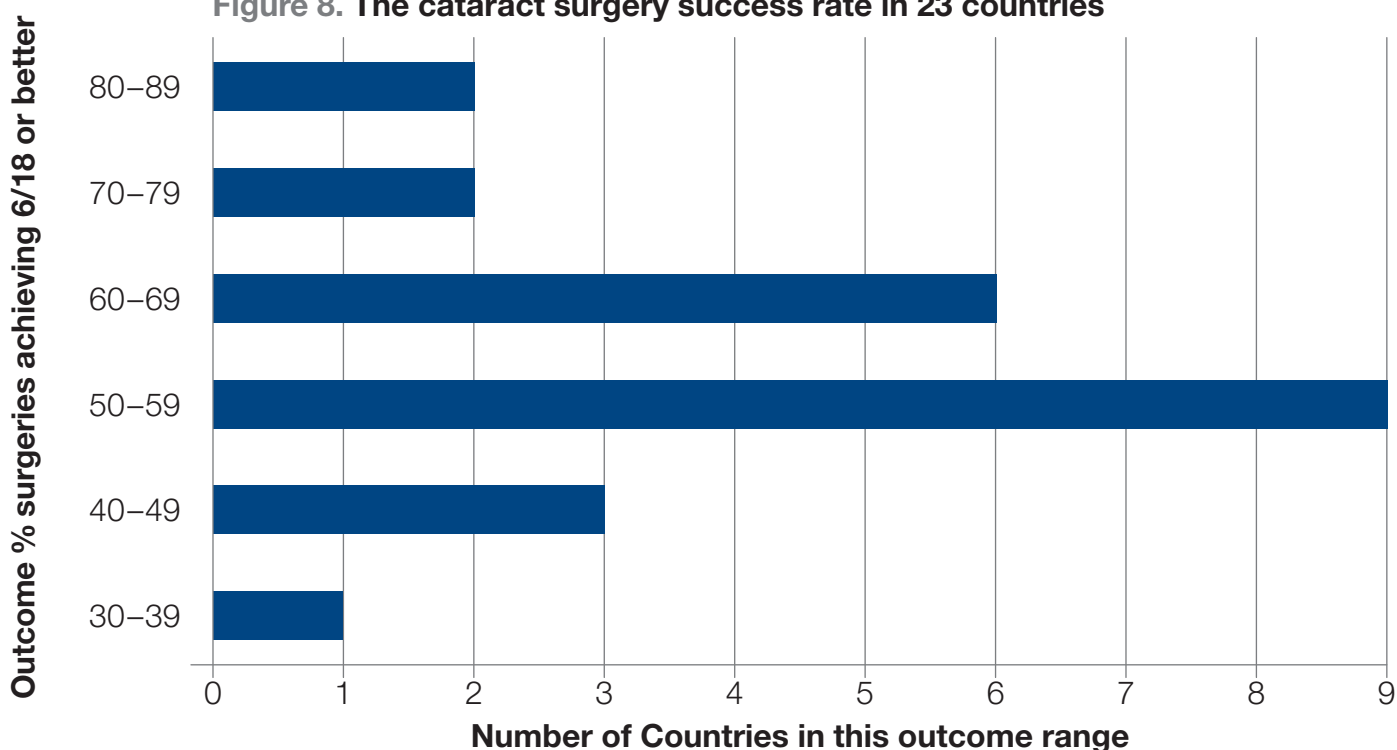
In Pakistan<sup>13</sup> gender differences were less marked than in Nigeria with just a marginal difference in most provinces with the exception of Balochistan a less developed province. Here the difference in coverage between men and women at <3/60 was 79% for men and 72% for women, with a wider gap at <6/18 with 54% for men and 44% coverage for women. As in Nigeria literacy has an impact on CSC; at <3/60 it is 88% for literate and 76% for those illiterate, at <6/18 it is 50% and 43% respectively. Coverage was higher in urban than rural areas, 80% compared to 76 % at <3/60. Some of the differences cited above are quite small and it is doubtful that these are significantly different in statistical terms.

## Finding 5 In many countries a great deal has to be done to enhance the quality of cataract surgery

Data for 23/27 countries was available on the outcome of the cataract surgery performed (Appendix 1, Table 1). The quality criteria established by WHO for cataract programmes is that at least 80% of operations should meet a presenting visual acuity of  $\geq 6/18$  in the operated eye<sup>14</sup>. Figure 8 shows that only two of the 23 countries attained this standard with four countries recording successful outcomes in less than 50% of cataract surgeries performed.

A great deal needs to be done to enhance the quality of cataract surgery performed. Post-operative uncorrected refractive error and surgical complications such as vitreous loss or capsule rupture account for much of the poor performance. Some older members of the community may have received cataract surgery prior to the widespread use of IOLs and subsequently lost or have aphakic glasses which are damaged. For these people this would result in very poor presenting visual acuities at the time of survey. Standard RAAB reports show outcomes for surgeries conducted 0-3, 4-6 and  $\geq 7$  years after surgery and whether the main cause was uncorrected aphakia or surgical complication. Analysis of this disaggregated outcome data is necessary to draw a true understanding of current performance.

**Figure 8. The cataract surgery success rate in 23 countries**



Consideration might also be given to creating an “Effective Cataract Surgical Coverage” metric which combines CSC and successful outcome indicators. Indeed the WHO / World Bank UHC monitoring report calls for such indicators to be made available and points out how few health intervention indicators can successfully measure both coverage and quality. The RAAB methodology potentially allows this construction for cataract surgery, which further cements the value of CSC as a good indicator to monitor progress on UHC.



# Discussion

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Cataract is a universal condition that affects vast numbers of people. It has been estimated that 73% of the population of India aged  $\geq 60$  years have some level of cataract<sup>15</sup> and 50% and 68% of US citizens aged between 75-79 and  $\geq 80$  years respectively<sup>16</sup>. Cataract surgery is a low cost, highly cost-effective, intervention. Recent systematic reviews<sup>17, 18</sup> confirm the conclusions of many previous studies that cataract is amongst the most cost effective of all surgical interventions.

In 2010 there were some 750 million people aged  $\geq 60$  years; by 2030 that number is projected to increase to 1.4 billion and to 2 billion by the year 2050<sup>19</sup>. Given the close association between ageing and cataract prevalence it may be estimated that at least 60-70 million cataract operations will be required per year by 2050. It is appropriate that the World Bank<sup>20</sup> has recently selected cataract surgery as one of just 44 essential surgical interventions.

Further CSC has recently been identified as an important indicator that can contribute to the measurement of UHC. It is one of just 13 health intervention coverage indicators proposed in the seminal WHO / World Bank 'Tracking Universal Health Coverage First Global Monitoring Report'<sup>21</sup>. The report states that:

*"As cataract is highly prevalent amongst older people so in addition to providing coverage information for cataract services, the CSC can also serve as a good proxy of access to health care for older persons."*

Efforts to measure progress on UHC must account for inequities, providing sufficient information to provide impetus and direction for positive change in practice. Disaggregated data can provide powerful evidence around inequity of access for various disadvantaged communities. The disaggregated CSC data highlighted in this report clearly illustrate inequity of access and signpost policy makers and service providers to measures they need to take to address this inequity.

The WHO has recently published the "Global Reference List of 100 Core Health Indicators"<sup>22</sup>. CSC is noted in the appendix under a list of additional indicators meriting consideration. CSC should be elevated to be within the top 100 indicators of the list in future versions as it meets all four of the key criteria required of indicators for the global list:

- i) *The indicator is prominent in the monitoring of major international declarations to which all member states have agreed:*

The WHA Resolution 66.4 "Universal Eye Health: a global action plan 2014 – 2019"<sup>23</sup> (GAP) was adopted by the WHA in 2013. CSC is one of the five key indicators identified to monitor progress against the targets of the GAP. Resolution 66.4 is the latest of four recent resolutions (66.4, 62.1, 59.25 and 56.26) focusing on the elimination of avoidable blindness and visual impairment and adopted by the WHA since the launch in 1999 of the "VISION 2020 Global initiative" a partnership between WHO and the International Agency for the Prevention of Blindness (IAPB). CSC has been identified from the very beginning of VISION 2020 as one of the key monitoring indicators.

- ii) The indicator is scientifically robust, useful, accessible, understandable and SMART*
- iii) Strong track record of extensive measurement experience, supported by an international database*

The CSC indicator was first described in 1998<sup>24</sup> following successful piloting as part of prevalence studies conducted in India in the mid-1990s. The indicator is derived from prevalence surveys using methodologies such as RAABs and its predecessor the Rapid Assessment of Cataract Surgical Services (RACSS) published by WHO in 2001<sup>25</sup>.

CSC data have been collected for the past 20 years. The results of the RACCS and RAAB studies that have given rise to most CSC data have been collated into an open access database “The RAAB repository” [www.raabdata.info](http://www.raabdata.info). The database contains records of 229 prevalence studies conducted between 1995 and 2014, which cover 70 countries.

- iv) The indicator is being used by countries in the monitoring of national plans and programmes*

This report has only focused upon CSC data available at national level for 27 countries. However there are some 200 further studies which have provided CSC data at a local level and which have been used to monitor and plan eye health service provision.

Photo by Orbis



## Conclusion

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CSC data from the 27 countries clearly show that the majority of countries are failing in terms of ensuring access to cataract surgery for much of their population. There are significant inequities between countries, and the data that are available show inequity across gender, literacy and location. Many people are facing barriers to access the eye health services that they need whether due to cost, remoteness of services, or social and structural factors. A focus on making cataract services accessible and affordable for the most under-privileged communities is required if the objective of universal health coverage is to be attained.

CSC is a highly relevant indicator that can inform policy makers and service providers not only about the state of the eye health system in a country or location but also contribute to the measurement of universal health coverage. It is a useful proxy in determining broader health coverage and unmet need for older persons.

# Appendix

Table 1. CSC in persons

Country	Location	CSC in persons						GDP Int US\$ PPP per capita	Health expenditure per capita current US\$	% Successful Outcome
		<3/60			<6/60			at time of RAAB	at time of RAAB	
		Male	Female	Total	Male	Female	Total			
Argentina	Latin America	96	98	97	82	85	84	n/a	1,074	82
Bhutan	Asia	78	68	73	67	51	59	5,744	100	57
Cambodia	Asia	67	49	54	60	38	43	2,187	22	62
Dominican Republic	Latin America	59	60	60	46	50	48	10,012	208	59
Ecuador	Latin America	81	81	81	59	61	60	8,850	302	63
El Salvador	Latin America	59	59	59	44	44	44	7,352	252	56
Eritrea	Africa	62	59	60	59	53	56	1,045	9	41
Guinea Bissau	Africa	36	29	32	26	22	23	1,340	38	55
Honduras	Latin America	75	69	71	64	61	62	4,593	193	63
Laos	Asia	77	42	55	51	26	36	3,107	29	50
Liberia	Africa	72	62	67	58	44	50	797	39	n/a
Malaysia	Asia	93	88	90	88	85	86	23,338	423	82
Moldova	Europe	70	68	69	47	53	51	n/a	241	49
Mongolia	Asia	68	73	71	59	63	61	9,435	244	51
Nepal	Asia	88	83	85	72	69	70	1,867	29	64
Nigeria	Africa	51	30	38	42	25	32	4,266	81	n/a
Pakistan	EMR	80	75	77	70	68	69	3,741	29	n/a
Palestine	EMR	92	83	86	86	77	81	n/a	n/a	55
Panama	Latin America	73	80	76	65	68	67	19,416	796	57
Paraguay	Latin America	86	93	89	73	81	77	7,186	354	77
Peru	Latin America	60	65	63	50	56	54	10,429	284	61
Sierra Leone	Africa	51	35	42	44	26	33	1,319	58	38
Thailand	Asia	92	87	95	82	87	85	14,394	264	n/a
The Gambia	Africa	76	53	62	64	43	51	1,440	30	47
Uruguay	Latin America	91	89	90	86	82	84	17,645	1,138	70
Venezuela	Latin America	65	73	70	56	61	59	11,921	239	60
Vietnam	Asia	70	65	67	59	55	56	3,681	58	51



**Table 2. Nigeria Cataract Surgical Coverage in persons (%)**

	Presenting VA<3/60			Presenting VA<6/18		
	Men	Women	Total	Men	Women	Total
<b>Zone</b>						
North East	46.4	29.4	35.4	24.6	15.2	18.8
South East	54.2	36.1	43.3	27.6	17.2	21.4
South-South	43.8	9.1	23.7	17.5	3.9	8.5
North West	50.0	28.3	36.7	29.6	17.1	22.6
South West	52.4	43.8	47.2	32.5	24.0	27.0
North Central	58.3	27.6	41.5	32.7	19.6	26.4
<b>Age (years)</b>						
40-49	60.0	33.3	45.5	42.9	20.0	29.4
50+	50.7	29.9	38.1	27.4	15.9	20.6
<b>Residence</b>						
Rural	47.1	21.3	32.1	24.9	11.6	17.0
Urban	66.7	54.1	58.2	37.2	30.0	32.8
<b>Literacy</b>						
Literate	60.7	55.6	59.1	35.9	30.8	34.4
Illiterate	44.4	26.6	32.1	22.7	14.3	17.0
<b>Total Population</b>	<b>51.0</b>	<b>30.0</b>	<b>38.3</b>	<b>27.7</b>	<b>16.0</b>	<b>20.7</b>

**Table 3. Pakistan Cataract Surgical Coverage in persons (%)**

	Presenting VA<3/60			Presenting VA<6/18		
	Men	Women	Total	Men	Women	Total
<b>Province</b>						
Punjab	76.9	74.8	75.7	43.1	42.4	42.7
Sindh	84.8	78.7	81.7	45.5	45.0	45.3
NWFP	79.8	70.6	75.0	43.4	40.7	42.0
Balochistan	78.9	71.8	75.7	53.6	44.2	49.2
<b>Age (years)</b>						
<50	73.1	71.8	72.4	47.2	35.4	39.5
≥50	80.0	75.3	77.6	44.4	43.9	44.2
<b>Dwelling</b>						
Rural	77.9	74.0	75.9	43.6	41.8	42.7
Urban	83.9	76.9	80.0	47.3	45.3	46.2
<b>Literacy</b>						
Literate	89.7	71.4	87.9	51.2	40.0	50.0
Illiterate	77.2	75.1	76.0	43.0	43.0	43.0
<b>Total Population</b>	<b>79.6</b>	<b>74.9</b>	<b>77.1</b>	<b>44.6</b>	<b>42.8</b>	<b>43.7</b>

# Endnotes

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- <sup>26</sup> "International Partners" is used in the same context as it is in WHA Res 66.4 "Universal eye health: a global action plan 2014-19" and includes non-state organisations operating both internationally and at local levels.



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# Recommendations

For Governments	For International Partners <sup>26</sup> (IPs)
Given the importance and high impact of cataract surgery, governments should include cataract surgery within their essential packages of care.	IPs should advocate to governments for the effective inclusion of cataract surgery within essential packages of care.
Governments should collect data on CSC to inform the measurement of universal health coverage, as an important measure not only of eye health services and surgical care but also a key indicator of access to health services for the elderly.	IPs should continue to advocate for the use of CSC as an indicator for UHC and raise awareness of the added value of monitoring CSC at all levels.  RAAB developers should determine if further disaggregation of CSC data is possible in accord with the “ideal” characteristics identified for UHC indicators.
Governments should support and conduct national prevalence surveys such as RAABs that provide information on CSC and other eye health data.	IPs should advocate for and support governments to conduct RAAB studies.
Governments should strengthen eye health services to ensure that the quality criteria expected of cataract surgical service programmes are attained.	IPs should advocate for and support the building of strong quality assurance within cataract surgical service programmes.  RAAB developers should consider the case for an “Effective Cataract Surgical Coverage” metric which combines CSC with successful outcome indicators.





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