

Preliminary clinical outcomes from the Peruvian National Cataract Elimination Plan

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ABSTRACT

Objective. To evaluate the clinical outcomes of a publicly funded cataract elimination program. **Methods.** Outcomes of all patients (186) who received extracapsular cataract extraction (ECCE) surgery free of charge at the Instituto Regional de Oftalmología in northern Peru in the first year (August 2008 to July 2009) of the Peruvian National Cataract Elimination Plan were compared retrospectively with the outcomes of all patients (68) who paid in the highest charge tier for ECCE surgery during the same period. Preoperatively, the median uncorrected visual acuity (UCVA) of National Plan patients was Hand Motion; the UCVA of paying patients was Counting Fingers ($P = 0.09$). Complication frequency and visual acuity (uncorrected visual acuity, pinhole visual acuity, and best correct visual acuity) were the primary outcome measures. The World Health Organization (WHO) Vision 2020 goal is for 85% of operated eyes to achieve 20/60 vision; the Ministerio de Salud del Perú goal is for 75% of eyes to achieve 20/50.

Results. One month postoperatively, only 24% of National Plan patients achieved a UCVA of 20/60. The median UCVA for both groups was 20/100 ($P = 0.23$). Intraoperative complications occurred in 27% of all patients; postoperative complications occurred in 39%. Patients more likely to have a poor outcome (UCVA < 20/200) were those who experienced a postoperative complication (odds ratio [OR] 3.3, $P = 0.002$), who experienced an intraoperative complication (OR 2.5, $P = 0.01$), and who were 75 years or older (OR 2.7, $P = 0.008$). National Plan patients were more likely to have an OCTET Grade II intraoperative complication (OR 4.2, $P = 0.03$) and were less likely to receive refractive services (OR 1.5, $P = 0.002$).

Conclusions. Neither WHO nor Peruvian benchmarks for surgical outcome were achieved in the first year of the Peruvian National Cataract Elimination Plan. Providing more comprehensive services to patients and addressing variables correlated with poor outcomes may improve interventions and help achieve Vision 2020 goals.

Key words

Cataract extraction; blindness; eye health services; cataract; visual acuity; Peru.

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In 1999, the World Health Organization (WHO) with the International Agency for the Prevention of Blindness launched the Vision 2020: Right to Sight initiative with the aim of eliminating avoidable blindness in the world by the year 2020. It charged each signatory to the declaration with the task of creating and implementing a national plan reflecting its needs and available resources (1). This paper assesses the steps taken

by one country, Peru, in its efforts to decrease the prevalence of unoperated cataract, the leading cause of blindness in the world (2).

Peru, like many nations of Latin America, is classified by the World Bank as a middle-income country based on its gross national income (3–5). However, considerable disparities exist regarding the distribution of income, the geographic distribution of economic oppor-

tunities, and access to health services. For example, the percent of national income generated by the richest quintile is 54%, compared with the lowest quintile of 3.6%, and the poverty rate in metropolitan Lima is 19%, compared with the rural sierras where it is about 73% (6, 7).

In Peru, the prevalence of bilateral blindness (visual acuity [VA] < 20/400) is high, estimated recently to be 2.1% among individuals age 50 or older, and cataract remains its single leading cause (8). Compounding this problem is that 75% of Peruvian ophthalmologists live and practice in the capital city, Lima, resulting in some areas of the country having only 1 ophthalmologist per 760 000 inhabitants (9). Substantial geographic barriers, poorly maintained roads, a low population density in rural areas, limited access to new technologies, and lower rates of reimbursement represent only a few of the many logistic difficulties in delivering surgical services to these traditionally underserved areas.

In 2007, the Ministerio de Salud del Perú (MINSA) announced the start of a 3-year National Cataract Elimination Plan with the intention of providing “low cost, safe, effective, and quality surgery for cataract blind individuals in all parts of the country” (10). The MINSA target for intervention is for 75% of eyes to achieve 20/50 vision postoperatively; the WHO Vision 2020 target is for 85% of eyes to achieve 6/18 (or equivalent 20/60) vision (10, 11).

Through its network of clinics and hospitals, MINSA serves as the primary provider of health services for the poorest quintile of Peruvians (12). Two institutes of ophthalmology, in Lima and Trujillo, operate as specialty MINSA hospitals. In 2008, the 12 residents and 8 attending ophthalmologists of the Instituto Regional de Oftalmología (IRO) located in Trujillo, capital of the La Libertad department, saw 66 573 outpatients drawn from across northern Peru. Approximately 40% of the population of La Libertad live below the poverty line; in the neighboring department of Cajamarca, the poverty rate approaches 70% (6).

In Peru, as in other developing countries, the cost of surgery has been perceived to be the most important factor for underutilization of surgical services (8, 13). The model of the Peruvian National Cataract Elimination Plan therefore has been to provide surgery free of charge at its public hospitals (7). Consid-

ering the multitude of economic, social, and geographic disadvantages faced by impoverished, rural Peruvians, a group whose utilization of surgical services and access to health care has historically been low, a question arises as to whether simply funding current systems of surgical delivery will be sufficient to consistently achieve excellent visual outcomes or whether improved models of care may be needed.

Well-documented efforts by non-governmental organizations (NGOs) in Tanzania, India, and Nepal have demonstrated the ability to provide highly efficacious, quality cataract surgery through skilled and highly coordinated care teams at very low costs (14–16). Nevertheless, as Vision 2020 initiatives begin to take effect, it is unknown to what extent these outcomes will be reproducible in public, government-funded hospitals. Though outcomes of surgery performed at pioneering eye hospitals such as the Tilganga Eye Center of Nepal, a close affiliate of the NGO The Himalayan Cataract Project, may routinely exceed more than 89% of patients achieving an uncorrected visual acuity of 20/60 in settings unsupported by NGOs, limited reports have suggested a less optimistic view, with one recent study of Peruvian providers demonstrating only 40% of patients achieving 20/60 vision (8, 15). This discordance poses a challenge for policy makers because the clinical effectiveness of cataract surgery in publicly funded contexts has been understudied in the global ophthalmological literature and what interventions will be most effective in these settings is unknown. Therefore, to evaluate the clinical effectiveness of an early Vision 2020 program, we examined the visual outcomes of patients receiving cataract surgery free of charge, funded by a newly created national surgical and public health initiative, compared with patients receiving fee-for-service surgery at a major public eye hospital in Peru.

MATERIALS AND METHODS

Outcomes of all patients (186) who received free extracapsular cataract extraction (ECCE) surgery in the first year (August 2008 to July 2009) of the Peruvian National Cataract Elimination Plan at IRO were included. National Plan inclusion criteria were that patients be \geq 50 years old, have a best correct visual acu-

ity (BCVA) \leq 20/100, be living in a state of poverty or extreme poverty (defined as a per capita monthly income of US\$72.36 or US\$38.23, respectively), and have no significant comorbidities. Virtually no women in this study worked outside the home and the most common profession for men was farming, followed distantly by construction and day labor. At IRO, all patients diagnosed with cataract were evaluated by social services staff to determine payment obligation. A detailed social history examining factors such as living circumstance and employment status was taken and cross-referenced with the Registro Nacional de Identificación y Estado Civil, a national database linked to the census. A final decision of a patient's obligation to pay or eligibility to receive free surgery under the National Plan was then determined by the IRO social services staff. The outcomes of all patients (68) who paid in the highest charge tier (US\$254.24) for ECCE surgery during the same period were comparatively examined as the paying cohort. Complication rate and visual acuity (uncorrected visual acuity [UCVA], pinhole visual acuity, and BCVA) were the primary outcome measures assessed in this study. The 254 ECCE operations included in this study were completed by 10 attending IRO surgeons and 6 supervised residents in the usual operative fashion for extracapsular cataract extraction. The intraocular lens (IOL) used in surgeries was a three-piece PCL PMMA IOL (Monoflex[®], Alcon). Because of operative complications, 23 eyes (12%) in the National Plan received an anterior chamber lens and 8 eyes (4%) remained aphakic. In the paying group, seven eyes (10%) received an anterior chamber lens.

Data collection and statistical analysis

Data from patients' charts were recorded in a standardized instrument (Microsoft Excel; Microsoft, Redmond, WA). In this clinic, visual acuities were recorded with a 20-foot Snellen eye chart. For statistical analysis, visual acuities were converted from the Snellen foot scale to the logMAR scale (17). Visual acuities were analyzed with Wilcoxon rank-sum tests and categorical variables were analyzed with Fisher exact tests. To assess complications, the Oxford Cataract Treatment and Evaluation Team (OCTET) rating scale was used (18, 19). Multiple logistic

regression models were built to examine factors associated with visual acuity and with surgical complications. Therefore, in addition to analyzing visual acuity as a continuous variable, uncorrected visual acuity and pinhole visual acuity were also dichotomized at the WHO defined “poor” level—that is, visual acuity < 20/200, and the regressions modeled the probability of having the “poor” outcome (20). All models were constructed by first fitting univariate logistic regressions to determine significant predictors. Only clinically relevant predictors were entered into the univariate regression model. These predictors were then entered into a single multiple logistic regression model and predictors that were jointly insignificant (at $P < 0.05$) were dropped. Final models controlled for pay group, age, gender, cataract hypermaturity, occurrence of surgical complications, and baseline visual acuity. The initial model for poor uncorrected visual acuity had a c -statistic of 0.66 while the final model had a c -statistic of 0.76; poor pinhole visual acuity had an initial c -statistic of 0.72 and a final c -statistic of 0.79. The complications regression models also controlled for hypertension and diabetes as well as suspected vitreoretinal and anterior chamber disease on a dichotomized basis—that is, documented presence of disease or no documented presence of disease. The intraoperative complication model had an initial c -statistic equal to 0.56 and a final model c -statistic of 0.63; the postoperative complication model had a best initial c -statistic of 0.56 and a final c -statistic of 0.64. Statistical analyses were performed with R (Version 2.9.1, R Foundation, 2009).

RESULTS

Baseline characteristics are presented in Table 1. The average number of visits made by National Plan patients to IRO between initial presentation and surgery was 4.3. Thirty-eight patients received surgery by IRO surgeons in one of four clinics in villages outside Trujillo as part of the National Plan outreach program. All other National Plan surgeries (148) were performed in IRO operating rooms. Location of surgery did not confer a greater risk of poor visual outcome in univariate analysis ($P = 0.61$), nor did surgeries completed by residents ($P = 0.91$). Despite National Plan enrollment criteria set at an age of 50 years and a BCVA of $\leq 20/100$, the uptake of services was seen primarily by

TABLE 1. Baseline characteristics of National Plan versus paying patients, Instituto Regional de Oftalmología, Peru, 2008–2009

Variable	National Plan (<i>n</i> = 186)	Paying patients (<i>n</i> = 68)	<i>P</i> value
Mean age (years)	70.6	70.1	0.78
Patients ≥ 75 years (%)	44.1	35.3	0.25
Female (%)	49.5	57.4	0.32
Median preoperative uncorrected visual acuity	HM ^a	CF ^b	0.09
Median preoperative pinhole visual acuity	HM ^a	CF ^b	0.04
Hypermature cataracts (%)	50.5	36.8	0.06
Living outside Trujillo (%)	58.0	35.0	0.001
Residing above 2 500 meters (%)	26.0	6.0	0.0006
Surgery performed by resident (%)	57.0	60.0	0.67
Suspected vitreoretinal or anterior chamber comorbidity (%)	19.0	14.0	0.40

^a HM = Hand Motion visual acuity.

^b CF = Counting Fingers visual acuity.

TABLE 2. Postoperative outcomes of National Plan versus paying patients, Instituto Regional de Oftalmología, by World Health Organization criteria, 30 days postoperatively, Peru, 2008–2009

Outcome	National Plan (<i>n</i> = 186)		Paying patients (<i>n</i> = 68)		<i>P</i> value
	No. of patients	% of total	No. of patients	% of total	
Uncorrected visual acuity, 30 days postoperatively					
Good ($\geq 20/60$)	45	24	20	29	0.51
Borderline (< 20/60 through $\geq 20/200$)	81	44	32	47	0.77
Poor (< 20/200)	36	19	9	13	0.26
Lost to follow-up	24	13	7	10	0.67
Pinhole corrected visual acuity, 30 days postoperatively					
Good ($\geq 20/60$)	106	57	41	60	0.87
Borderline (< 20/60 through $\geq 20/200$)	32	17	14	21	0.58
Poor (< 20/200)	24	13	6	9	0.39
Lost to follow-up	24	13	7	10	0.67
Best corrected visual acuity, 30 days postoperatively					
Good ($\geq 20/60$)	42	23	35	51	0.004
Borderline (< 20/60 through $\geq 20/200$)	14	8	2	3	0.02
Poor (< 20/200)	4	2	0	0	0.29
Lost to follow-up	126	68	31	46	0.002

patients substantially older (median age 70.6; Table 1) and with worse visual acuity (median pinhole visual acuity Hand Motion; Table 1).

At 30 days postsurgery, uncorrected visual acuity outcomes among patients receiving free surgery under the National Plan and those paying were comparable, with both groups achieving a median UCVA 20/100 ($P = 0.23$). Median pinhole visual acuity was 20/50 and 20/40 for the National Plan and paying patients, respectively ($P = 0.27$). National Plan patients were less likely to receive refractive services than patients paying for surgery (odds ratio [OR] 1.5; $P = 0.002$; Table 2). Table 2 presents postoperative outcomes. In total, 45 of the 254 eyes included in this study (18%)

had a poor UCVA (< 20/200) and 30 of the 254 eyes included in this study (12%) had a poor pinhole visual acuity (< 20/200). Patients more likely to have a poor outcome (< 20/200) were those who experienced a postoperative complication (OR 3.3; $P = 0.002$), who experienced an intraoperative complication (OR 2.5; $P = 0.01$), and who were 75 years or older (OR 2.7; $P = 0.008$; Table 3).

Operative complications are reported in Table 4. Overall, 27.1% of the patients experienced an intraoperative complication and 38.5% experienced a postoperative complication. The odds of a Grade II intraoperative complication occurring in National Plan patients were higher than in those paying to receive surgery (OR 4.2; $P = 0.03$). In total, 69 patients (27%)

TABLE 3. Adjusted odds for poor visual acuity of postoperative patients, Instituto Regional de Oftalmología, Peru, 2008–2009

Variable	OR ^a for uncorrected visual acuity < 20/200 at 30 days (n = 45)			OR for pinhole visual acuity < 20/200 at 30 days (n = 30)		
	OR	95% CI ^b	P value	OR	95% CI	P value
Baseline visual acuity (< 20/400, exclusive)	0.575	0.186, 1.777	0.34	1.056	0.377, 2.955	0.92
National Plan enrollment	1.653	0.697, 3.917	0.25	1.778	0.638, 4.951	0.27
Age ≥ 75 years	2.719	1.301, 5.68	0.008	3.097	1.309, 7.331	0.01
Male	0.895	0.432, 1.857	0.77	1.095	0.471, 2.543	0.83
Hyper mature cataract at diagnosis	0.99	0.459, 2.135	0.98	1.05	0.406, 2.713	0.92
Intraoperative complications	2.586	1.215, 5.505	0.01		n/a ^c	n/a ^c
Postoperative complications	3.348	1.56, 7.189	0.002	7.946	3.092, 20.423	< 0.0001

^a OR = odds ratio.

^b CI = confidence interval.

^c Not significant in univariate analysis.

TABLE 4. Operative complications and findings of National Plan versus paying patients, Instituto Regional de Oftalmología, Peru, 2008–2009

Complication	National Plan		Paying patients		P value
	No. of incidents	% of cohort	No. of incidents	% of cohort	
Intraoperative complications					
Eyes with a Grade I complication	3	1.6	2	2.9	0.61
Eyes with a Grade II Complication	23	12.3	2	2.9	0.03
Eyes with a Grade III Complication	31	16.7	10	14.7	0.71
Number of eyes with at least 1 intraoperative complication	55	29.6	14	20.6	0.16
Postoperative complications					
Eyes with a Grade I complication	29	15.6	18	26.5	0.07
Eyes with a Grade II Complication	27	14.5	9	13.2	1.00
Eyes with a Grade III Complication	31	16.7	8	11.8	0.43
Eyes with at least 1 postoperative complication	71	38.2	27	39.7	0.88
Visually compromising comorbidities discovered postoperatively					
Eyes with at least 1 postoperative finding	11	5.9	3	4.4	0.77

had an intraoperative complication. Additionally, 98 patients (39%) had a postoperative complication. In the complications multiple logistic regression models, patients who had either hypertension or diabetes were more likely to experience a postoperative event (OR 2.1; *P* = 0.02; Table 5). Patients with a suspected vitreoretinal or anterior chamber comorbidity were less likely to experience an intraoperative complication (OR 0.3; *P* = 0.03; Table 5).

DISCUSSION

Neither the WHO nor the MINSa outcome benchmarks for cataract intervention were met. Nevertheless, multiple variables were associated with poor outcomes and are avenues for future intervention to improve clinical outcome.

Patients receiving surgery under the National Plan were more likely to have a Grade II intraoperative complication compared with patients in the paying cohort (OR 4.2; *P* = 0.03). The operative experience of the surgeon, the microscope quality, and the availability of surgical equipment were explored as possible causes of this phenomenon. However, in the univariate analysis, surgeries performed by supervised residents did not confer a significantly greater risk of poor visual outcome (*P* = 0.91). The 38 surgeries completed at the village clinics used a different operating microscope than the one used at IRO, but increased frequency of poor outcome was not detected in univariate analysis (*P* = 0.61). The use of intraocular dyes has been documented to be a helpful adjuvant in decreasing the rates of zonular dialysis,

posterior capsule rupture, and other intraoperative complications, particularly in cases of mature cataracts (21–23). It is noteworthy that trypan blue was not included in all National Plan surgical kits as a cost saving mechanism. As the occurrence of intraoperative complications was associated with having a UCVA worse than 20/200 (OR 2.6; *P* = 0.01), it is believed that efforts to improve uniformity of available supplies could decrease the rate of these complications and improve the outcomes of patients receiving extracapsular cataract extraction.

Documentation of a vitreoretinal or anterior chamber comorbidity surprisingly conferred a protective effect for the incidence of intraoperative complication (OR 0.3; *P* = 0.03). The cause of this finding is unclear but may be the result of surgeons’ efforts to modify surgical approaches in an effort to preserve the vision of an eye assumed to be potentially compromised with sight-threatening comorbidity. Identification and emphasis on best practices and adaption of novel surgical methods, such as manual small incision cataract surgery, may decrease the rate of intraoperative complications and create meaningful improvements in future interventions (19, 24).

Postoperatively, 38.5% of all patients had an adverse event and were less likely to achieve a UCVA better than 20/200 (OR 3.3; *P* = 0.002). Many etiologies of postoperative complication in this study were inflammatory in nature. It has been proposed that the use of anti-inflammatory drops, such as dexamethasone, can decrease the incidence of ocular inflammation (25). Anecdotally, IRO staff noted that many patients were not administering the drops correctly or following the prescribed dosing schedule. Whether this factor accounts for some of the postoperative complications remains unclear, but improved education for these patient populations may be a useful intervention. Additionally, the presence of vascular disease such as diabetes or hypertension, which may interfere with wound healing, was found to correlate with an increased risk of postoperative complication.

Additionally, 5.5% of the patients from both cohorts were found postoperatively to have had preexisting vitreoretinal disease. The density and opacity of the presenting cataracts in these patients made sensitive detection of microvascular pathology challenging. Additionally,

TABLE 5. Adjusted odds for surgical complications, Instituto Regional de Oftalmología, Peru, 2008–2009

Variable	OR ^a for any intraoperative complications, Type I, II, or III (n = 69)			OR for any postoperative complications, Type I, II, or III (n = 98)		
	OR	95% CI ^b	P value	OR	95% CI	P value
Baseline visual acuity (< 20/400, exclusive)	0.63	0.227, 1.748	0.37	0.454	0.184, 1.121	0.09
National Plan enrollment	1.599	0.802, 3.187	0.18	1.123	0.618, 2.041	0.7
Age ≥ 75 years	1.162	0.642, 2.106	0.62	0.75	0.43, 1.306	0.31
Male	0.864	0.482, 1.547	0.62	0.958	0.561, 1.636	0.87
Hypermaturation cataract at diagnosis	1.441	0.792, 2.623	0.23	0.64	0.369, 1.109	0.11
Diagnosis of hypertension						
OR diabetes	1.586	0.821, 3.065	0.17	2.128	1.157, 3.915	0.02
Suspected vitreoretinal or anterior chamber disease	0.324	0.117, 0.893	0.03	0.735	0.346, 1.561	0.42

^a OR = odds ratio.

^b CI = confidence interval.

more than 40% of the patients in this study were 75 or older. As observed in other reports, advanced age was a risk factor for a poor postoperative visual outcome (26). Efforts that encourage the visually impaired to present sooner could improve surgical outcomes.

In this study, more than half the patients in both groups achieved 20/60 vision with the aid of a pinhole, though only 23% of National Plan patients and 51% of paying patients returned for refraction within 90 days postoperatively ($P = 0.004$). Increasing the availability of refractive services alone would more than double the number of individuals achieving 20/60 vision. The National Cataract Plan does not finance refractive services for postoperative patients and therefore an inability to pay may explain the lower uptake of these services by poorer patients; further study in this regard is warranted. The introduction of inexpensive, adaptive focus lenses, which permit self-refraction by the user, may represent an important avenue in improving the best-corrected visual acuity in settings where geography and high costs represent barriers to care and should be evaluated further (27).

A recent review of cataract surgery in Latin America indicates that the visual outcomes of patients enrolled in the National Plan at IRO in this report were slightly lower than outcomes of regional peers (28). In this report, 57% of National Plan patients had a pinhole visual acuity $\geq 20/60$ at 30 days, compared with 90% in a study in Buenos Aires, Argentina, the site with the highest outcomes, and

54% in a study of four provinces in Guatemala, the site with the lowest outcomes (29, 30). A study completed in Piura and Tumbes, Peru, close to the Ecuadoran border documented 63% of patients achieving a pinhole visual acuity $\geq 20/60$ (8). These studies were completed at a variety of locations, including private clinics, public hospitals, and NGO sites. A lack of regression analyses or documentation of operative complication limit to what extent comparisons may be made, but access to facilities, postoperative refraction availability, and familial support systems were also cited as difficulties in achieving best possible outcomes.

In this study population, the average number of visits needed between diagnosis and surgery was 4.3. A roundtrip bus ticket from a village in the Andes to IRO can cost upward of US\$15 per person; the burden of direct costs is easily imaginable for a patient and his or her chaperone, especially considering that National Plan patients have a per capita income less than US\$72.36 per month. Also, virtually all patients in this study were required to obtain different degrees of preoperative medical evaluation and laboratory testing, draining additional resources from an already financially strained population, for equivocal benefit (31). Therefore, it is believed that it is unlikely that the poor visual outcomes, operative complication rates, or the extreme demographics of this population—namely, the high proportion of grossly blind and very elderly—are unique to this site or to Peru generally.

Eliminating the cost of surgery alone may not be sufficient for rural, indigent populations to receive the best possible access or outcomes of surgery. Improving patient transportation, clinic workflow, patient education, and ancillary services may be needed as well and is worthy of further study.

Nevertheless, although the National Plan interventions in the first year failed to achieve targeted visual acuities, the program had success in addressing disparities in care. Nearly 58% of patients receiving surgery in the National Plan lived outside of Trujillo and a quarter lived in remote mountain valleys, settings where utilization of surgical services and access to healthcare has historically been low. Also, the increased number of surgeries that are being performed now due to funding from the National Plan will likely improve the outcomes of the continued interventions, as evidenced by the strong volume–outcome relationship that has been documented in cataract surgery (32).

As in many retrospective studies, the data extracted from the medical charts used in this study were originally intended for clinical rather than research purposes. This introduces the possibility of bias and limits the extent to which conclusions can be drawn. The restriction of this study to one site location may also limit generalizability of results. Additionally, the scope of this paper limits its ability to comment on the WHO and MINSA goals for service delivery—that is, whether 85% and 95%, respectively, of patients diagnosed with cataract actually received surgery.

In summary, the outcomes from the first year of the Peruvian National Cataract Elimination Plan suggest that reducing the burden of cataract blindness in impoverished populations may be feasible under a coordinated national public health effort. Multiple variables have been associated with poor outcome and are targets for future intervention. Further study is warranted to assess why patients who are younger or with visual acuities closer to enrollment criteria are not receiving surgical services.

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stitutional Review Boards of Harvard Medical School, Boston, and the Regional Institute of Ophthalmology, Trujillo, and was found to be exempt from review by the Human Studies Committee under paragraph 4 of the Code of US Federal Regulations 45 CFR 46.101(b). The project does not fall under Health Insurance Portability and Accountability Act requirements because no protected health information was recorded or linked by code to data. The manuscript,

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RESUMEN

**Resultados clínicos
preliminares del Plan Nacional
de Lucha contra la Ceguera
por Catarata del Perú**

Objetivo. Evaluar los resultados clínicos de un programa de lucha contra la ceguera por catarata con financiamiento público.

Métodos. Los resultados obtenidos de todos los pacientes (186) sometidos a una operación gratuita de extracción extracapsular de catarata (EECC) en el Instituto Regional de Oftalmología del norte del Perú, durante el primer año (de agosto del 2008 a julio del 2009) de la ejecución del Plan Nacional de Lucha contra la Ceguera por Catarata del Perú, se compararon retrospectivamente con los resultados de los pacientes (68) que pagaron los honorarios más elevados por una operación quirúrgica de EECC durante el mismo período. Antes de la intervención, la mediana de la agudeza visual sin corrección (AVSC) de los pacientes beneficiarios del plan nacional era de percepción de los movimientos de la mano; mientras que en los pacientes de pago era de conteo de dedos ($P = 0,09$). Como mediciones primarias de los resultados se consideraron la frecuencia de complicaciones y la agudeza visual (agudeza visual sin corrección, agudeza visual con agujero estenopéico y mejor agudeza visual correcta). La meta de la iniciativa Visión 2020 de la Organización Mundial de la Salud (OMS) es lograr que 85% de los ojos operados alcancen un nivel de visión mínimo de 20/60; la meta del Ministerio de Salud del Perú es que 75% alcancen un nivel de 20/50.

Resultados. Un mes después de la intervención, solo 24% de los pacientes beneficiarios del plan nacional alcanzaron una AVSC de 20/60. La AVCS mediana en ambos grupos fue de 20/100 ($P = 0,23$). En 27% de los pacientes aparecieron complicaciones intraoperatorias; y en 39%, complicaciones posoperatorias. Los pacientes con mayor probabilidad de obtener un resultado deficiente (AVSC < 20/200) fueron los que presentaron alguna complicación posoperatoria (razón de posibilidades [OR] 3,3, $P = 0,002$), los que padecieron una complicación intraoperatoria (OR 2,5, $P = 0,01$) y los de 75 años de edad o mayores (OR 2,7, $P = 0,008$). Los pacientes beneficiarios del Plan Nacional tuvieron mayores probabilidades de tener complicaciones intraoperatorias de grado II de la escala de OCTET (OR 4,2, $P = 0,03$) y menores probabilidades de recibir servicios de corrección refractiva (OR 1,5, $P = 0,002$).

Conclusiones. Durante el primer año de ejecución del Plan Nacional de Lucha contra la Ceguera por Catarata del Perú no se alcanzaron los puntos de referencia peruanos ni los de la OMS en cuanto a los resultados de la cirugía. La prestación de servicios más integrales a los pacientes y la atención de las variables correlacionadas con los resultados deficientes pueden mejorar las intervenciones y contribuir a que se alcancen las metas de la iniciativa Visión 2020.

Palabras clave

Extracción de catarata; ceguera; servicios de salud ocular; catarata; agudeza visual; Perú.