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# A multi-country, cross-sectional observational study of retinopathy of prematurity in Latin America and the Caribbean

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**ABSTRACT**

**Objective.** *To consolidate available information from the Latin American and Caribbean (LAC) region on 1) national incidence of retinopathy of prematurity (ROP) and 2) national-level government inputs on ROP (existing national policies, guidelines, programs, and financing for ROP prevention, detection, and treatment, including ROP screening) in 2014.*

**Methods.** *In March and April 2015, a multi-country online survey was distributed to 56 medical and public health experts working on ROP in LAC countries. Respondents were instructed to provide quantitative and qualitative information representative of the national situation in 2014 for ROP incidence and national-level government inputs (existing national policies, guidelines, programs, and financing for ROP prevention, detection, and treatment, including ROP screening) in their country.*

**Results.** *The survey was completed in full by a total of 11 experts from 10 LAC countries (Argentina, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, Mexico, Nicaragua, and Panama). According to the survey results, six countries had a national policy that includes ROP prevention, detection, and treatment, with screening and treatment covered by national/federal funding. Eight countries had national guidelines for ROP. Four countries had legislation mandating eye examination of preterm infants. Most countries had Level 3 and 4 neonatal intensive care units with ROP programs in public sector health care facilities. Five countries had a data collection or monitoring system to track the number of newborn babies screened for ROP within hospital settings. On average, countries with three or four of the above-mentioned ROP elements screened 95% of eligible newborns in 2014, while those with only one or two of the ROP elements screened 35% of eligible newborns.*

**Conclusions.** *National government buy-in and involvement in ROP screening and treatment legislation is related to a higher proportion of eligible premature newborns being screened and treated for ROP. Further research should include more countries and assess national-level engagement with ROP, including ROP screening and treatment.*

**Key words** Retinopathy of prematurity; premature birth; infant, newborn; Latin America; Caribbean region.

First identified in the 1940s in wealthier countries, retinopathy of prematurity (ROP) is an avoidable cause of childhood blindness. Currently, ROP primarily affects neonates in middle-income countries, where neonates of lower gestational age and birth weight are more likely to survive, versus neonates in lower-income countries, and where risk factors exist that are not present in higher-income countries (1–6). Globally, ROP is the biggest contributor to visual impairment in premature neonates and is related to the incomplete development of their visual structure at birth (1, 4). Over the past decade, ROP has emerged as an important cause of blindness and visual impairment among children in middle-income countries, particularly in Latin America and Eastern Europe (1–3). ROP is now the leading cause of preventable childhood blindness in Latin America (6). An estimated 185 000 preterm

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babies developed ROP globally in 2010. Approximately 10% of ROP cases resulted in blindness or severe visual impairment, most likely caused by the most acute stages of the disease (4 or 5) and in the absence of advanced treatment[5] (1, 5).

Research on ROP in Latin America and the Caribbean (LAC) began two decades ago and indicates the disease is a large problem in the region, where two-thirds of annual global cases of blindness caused by ROP occur (7). The authors of this study identified 26 previous studies that 1) reported ROP incidence in neonates with low gestational age/birth weight, incidence of the different stages of ROP, and/or incidence of ROP in all neonates examined for ROP, and 2) were conducted in the LAC region. The studies reported 6.0%–44.5% of neonates with low gestational age and/or birth weight present with ROP, and most concluded that ROP incidence is more than 20% among these high-risk neonates. Previous ROP research was only conducted in seven LAC countries (Argentina, Brazil, Chile, Colombia, Cuba, Dominican Republic, and Mexico), at the subnational or single-clinic level (8–33).

Globally, there is minimal research in the scientific literature evaluating the effectiveness of existing interventions to prevent, diagnose, or treat ROP. Some studies have found that optimal oxygenation of premature infants (90%–95%) is ideal for ROP prevention and treatment (4, 34–37). However, of the nine studies identified in this study that investigated optimal oxygen management of ROP, the conclusions are mixed. Five studies concluded that a lower range of oxygen saturation (85%–89%) can prevent ROP (4, 34–37) and four studies concluded that a lower oxygenation range for preterm infants does not result in a lower proportion of mortality and morbidity of at-risk neonates (38–41). Past research has emphasized improved primary care and approaches tailored appropriately to the local population (7, 42). The authors of this study found only six studies that identified an effective treatment for ROP, illustrating a lack of conclusive findings on methods to effectively treat ROP. All six studies covered methods and strategies other than optimal oxygenation and tailoring programs to local populations, and each found a unique treatment to effectively treat ROP (43–48).

Data on ROP across LAC countries were incomplete and only existed for certain cities (8–33). There were no national-level data on ROP incidence; specific policies, guidelines, and/or programs targeting ROP; or the cost of ROP screening. To help fill this information gap, this study aimed to consolidate available information from the LAC region on 1) national incidence of ROP and 2) national-level government inputs on ROP (existing national policies, guidelines, programs, and financing for ROP prevention, detection, and treatment, including ROP screening) in 2014.

## MATERIALS AND METHODS

A multi-country quantitative and qualitative online survey of medical and public health experts working on ROP across the LAC region was carried out in 2015 to determine national ROP incidence and the existence of national-level government inputs (existing national policies, guidelines, programs, and financing for ROP prevention, detection, and treatment, including ROP screening) in 2014. The survey was crafted with the assistance of regional experts from the United Nations Children's Fund (UNICEF) and the Pan American Health Organization (PAHO)/World Health Organization (WHO) specializing in newborn health and/or ROP, and global expert Clare Gilbert, Professor of International Eye Health at the London School of Hygiene & Tropical Medicine. Survey questions covered the proportion of newborns at high risk for ROP; ROP screening eligibility; ROP treatment; guidelines for the prevention, diagnosis, and treatment of ROP; ROP-related costs and program coverage; and monitoring, evaluation, and reporting of ROP. The cutoffs for higher-risk birth weight (< 1500 g and 1500–1999 g) and gestational age (< 32 weeks) and the specific stages of ROP (4 and 5) used in the survey questions were defined using international norms and expert opinions (1, 4, 5).

Data were obtained through a Web-based questionnaire version of the survey (in English or Spanish, as appropriate) completed by respondents in March and April 2015. Invitations to complete the questionnaire were extended to key ROP and neonatal health experts at the national level in all 43 countries in the LAC region. Selection of respondents was based on input from the UNICEF LAC Regional Office (LACRO) and PAHO/WHO staff familiar with the ROP situation, as well as key players at the LAC regional, national, and/or subnational level. As explained in the invitation to complete the questionnaire, completion of the survey was considered respondent approval for the authors to use the information obtained from the responses in this analysis. Respondents were instructed to provide information representative of the national situation, for the country indicated, for 2014. Respondents provided citations for all metrics reported.

The survey was distributed to all country-level ROP experts in the LAC region known to the authors (a total of 56), but only 11 surveys were completed in full. Comparison of data from more than one respondent per country, as a quality control measure and to confirm the accuracy of the responses, could only be carried out for one country (Colombia). For the other nine countries in the study, there was only one respondent. All qualitative and quantitative data were extracted from the Web-based questionnaire and translated into English to maintain consistency across all responses included in the analysis.

## RESULTS

Eleven of the 56 respondents invited to participate in the online survey responded to it in full, providing the set of 11 responses included in the analysis. Together, these 11 respondents reported information for 10 countries in the region (Argentina, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, Mexico, Nicaragua, and Panama). In those 10 countries, 7 021 979 live births occurred in 2014, representing 45.0% of births for that year in the region (49). The survey respondents reported 0.0%–13.0% of live births in 2014 weighed < 1 500 g at birth, with an additional 0.0%–13.0% live births weighing 1 500–1 999 g, and 0.0%–13.0% live births born before 32 weeks gestational age (Table 1).

All countries had a national ROP policy, except the Dominican Republic (where some hospitals were reported as beginning to develop protocols) and Colombia. Respondents from the eight countries with a national ROP policy reported that international criteria were used to

[5] Stage 4 ROP is defined as a partially detached retina; Stage 5 ROP is the complete detachment of the retina and is the end stage of the disease.

**TABLE 1. Live births in 2014 at risk for retinopathy of prematurity (ROP), based on birth weight (BW) and gestational age (GA) criteria, reported in survey of experts in Latin America and the Caribbean, March–April 2015**

| Country | Live births | Live births at risk for ROP (%) | | |
|---|---|---|---|---|
| | *n* | BW < 1 500 g | BW = 1 500–1 999 g | GA < 32 wks |
| Argentina | 754 603 | 1.1 | 1.5 | 8.5 |
| Brazil | 2 902 186 | 1.4 | –[a] | – |
| Colombia | 659 202 | 0.3 | 2.0 | 0.7 |
| Costa Rica | 71 793 | 0.9 | 2.1 | – |
| Cuba | 122 537 | 0.5 | 1.1 | 0.2 |
| Dominican Republic | 200 404 | 0.0 | 0.0 | 0.0 |
| El Salvador | 95 112 | 0.9 | 1.3 | 1.3 |
| Mexico | 2 100 000 | 1.0 | 1.1 | 1.1 |
| Nicaragua | 40 656 | 2.0 | 4.0 | 4.0 |
| Panama | 75 486 | 13.0 | 13.0 | 13.0 |

***Source:*** Compiled by the authors based on the study results.
[a] Data not provided by survey respondent.

**TABLE 2. Criteria for retinopathy of prematurity (ROP) examination eligibility in 2014, reported in survey of experts in Latin America and the Caribbean, March–April 2015**

| Country | Criteria for ROP examination eligibility | | |
|---|---|---|---|
| | BW[a] | GA[b] | Additional "sickness" criteria |
| Argentina | < 1 500 g | ≤ 32 wks | 33–36 wks, of any weight, with risk factors |
| Brazil | ≤ 1 500 g | ≤ 32 wks | Respiratory distress syndrome; sepsis; blood transfusion; multiple pregnancies; intraventricular hemorrhage |
| Colombia | < 1 800 g | < 32 wks | Chorioamnionitis; intraventricular hemorgia PVL[c]; oxygen therapy; mechanical ventilation; PVL or hydrocephalus |
| Costa Rica | ≤ 1 500 g | ≤ 34 wks | Higher weight but with associated risk factors |
| Cuba | ≤ 1 700 g | ≤ 32 wks | Use of oxygen therapy; use of erythropoietin |
| Dominican Republic | < 1 800 g | < 30 wks | Prolonged oxygen therapy |
| El Salvador | < 1 750 g | < 32 wks | BW 1 750–2 000 g meeting neonatologist criteria |
| Mexico | < 1 750 g | < 34 wks | > 1 750 g or > 34 wks that receive supplemental oxygen |
| Nicaragua | < 2000 g | < 37 wks | Severe asphyxia; poor birth outcome |
| Panama | ≤ 1500 g | ≤ 32 wks | Unstable condition; neonatologist or pediatric recommendation |

***Source:*** Compiled by the authors based on the study results.
[a] BW: birth weight.
[b] GA: gestational age.
[c] PVL: periventricular leukomalacia.

define ROP for their national policy and determine eligibility for an ROP examination (birth weight < 1 500 and gestational age < 32 weeks). However, in the survey responses, birth weight and gestational age cutoffs listed for ROP examination eligibility ranged from < 1 500 g to < 2 000 g, and from < 30 weeks to < 37 weeks, respectively. This may be explained by the fact that all 10 countries represented in the survey by a respondent were reported as also using additional indicators for ROP examination; these included physician recommendation and "sickness" criteria (risk factors) such as severe asphyxia, sepsis, use of oxygen therapy or erythropoietin, respiratory distress, multiple pregnancies, and blood transfusion (Table 2). The national percentage of ROP cases that did not match the international criteria for birth weight and gestational age was reported as 0% (Dominican Republic and Panama); 15%–25% (Argentina, Colombia, and Nicaragua); and 30% (Cuba and El Salvador).

There was great disparity across countries in the proportion of eligible premature newborns reported as screened and/or treated for ROP. For example, all eligible premature newborns in Costa Rica and Cuba were reportedly screened for ROP, no eligible premature newborns were reportedly screened in the Dominican Republic, and the highest national percentage of eligible premature newborns reportedly receiving treatment for ROP was 20%, with most countries treating less than 5% (Table 3).

Respondents from all 10 countries reported the use of lasers for treating sight-threatening ROP. Additional treatments reported for this condition included anti-vascular endothelial growth factor (VEGF) injections (Argentina, Brazil, Colombia, El Salvador, and Nicaragua) and cryotherapy (Brazil, Colombia, and Mexico). Only seven countries were reported as having vitreoretinal services[6] available for management of Stage 4 and 5 ROP. Of those seven countries, five were reported as having those services available in the public sector (Argentina, Costa Rica, Cuba, Mexico, and Panama), and two (Colombia and El Salvador) were reported as having those services only available in the private sector.

Information on the proportion of ROP cases born to the poorest group nationally was only reported for two countries (Colombia and El Salvador). The respondents for Colombia, which defined the "poorest group" as those unable to utilize the national health system, reported that less than 25% of ROP cases were born in this group. The respondent for El Salvador reported that 5%–10% of ROP cases were seen in live births in the "poorest group," defined as neonates born to individuals experiencing the chronic deprivation of resources, capabilities/capacity, choices, security, and power necessary to enjoy an adequate standard of living.

According to the survey results, national government policies for ROP were introduced as far back as 1981 (Costa Rica) and as recently as 2012 (El Salvador). Respondents reported that six of the countries (Argentina, Costa Rica, Cuba, El Salvador, Mexico, and Panama) had a government policy that included prevention, detection, and treatment of ROP, with screening and treatment covered by a government program and/or health insurance through national/federal funding (Figure 1). The respondents from Brazil and Colombia reported that although those countries did not have a government policy for ROP, the costs of ROP screening and treatment were covered by government funding (national/federal, state/subnational, and Ministry of Health funding in Brazil, and national/federal funding in Colombia). The respondents from the remaining two countries without a government

[6] Specialized ophthalmologic treatment for retinal diseases.

**TABLE 3. Number and proportion of eligible[a] premature newborns screened and treated for retinopathy of prematurity (ROP) in 2014, reported in survey of experts in Latin America and the Caribbean, March–April 2015**

| Country[b] | Screened | | Treated | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Argentina | 6 300 | 90 | 248 | 4 |
| Colombia | 1 152 | 40 | 45 | 20 |
| Costa Rica | 706 | 100 | 22 | 3 |
| Cuba | 1 333 | 100 | 12 | 1 |
| Dominican Republic | 0 | 0 | 0 | 0 |
| El Salvador | 1 150 | 90 | 48 | 3 |
| Nicaragua | 264 | 25 | 11 | 14 |
| Panama | 2 000 | 75 | 20 | 2 |

***Source:*** Compiled by the authors based on the study results.
[a] According to criteria for birth weight and gestational age.
[b] Brazil and Mexico were part of the study but were not included here due to missing data.

**FIGURE 1. National-level inputs for retinopathy of prematurity (ROP) in 2014, reported in survey of experts in Latin America and the Caribbean, March–April 2015**

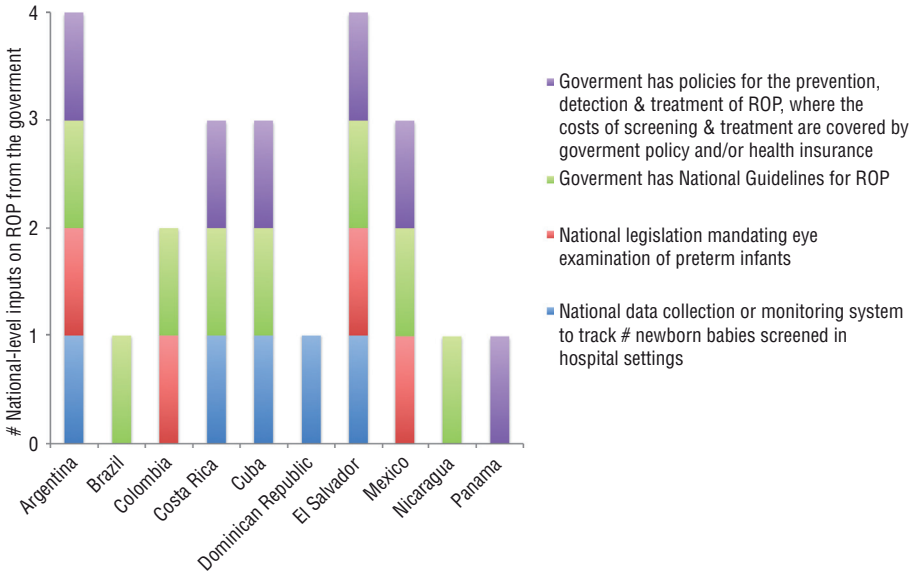


**TABLE 4. Number of public/private Level 3 or 4[a] neonatal intensive care units (NICUs) with retinopathy of prematurity (ROP) programs in 2014, reported in survey of experts in Latin America and the Caribbean, March–April 2015**

| Country[b] | Public NICUs | | Private NICUs | |
|---|---|---|---|---|
| | Total | With ROP programs | Total | With ROP programs |
| Argentina | 101+ | 83 | –[c] | 7 |
| Brazil | 101+ | – | 101+ | – |
| Colombia | 30 | 8 | 101+ | 46 |
| Costa Rica | 11 | 11 | 0 | 0 |
| Cuba | 41 | 41 | 0 | 0 |
| Dominican Republic | 5 | 4 | – | – |
| El Salvador | 5 | 5 | 1 | 1 |
| Nicaragua | 7 | 4 | – | – |
| Panama | 4 | 3 | 4 | 0 |

***Source:*** Compiled by the authors based on the study results.
[a] Highest level of care.
[b] Mexico was part of the study but was not included here due to missing data.
[c] Missing data.

ROP policy—Dominican Republic and Nicaragua—reported that the cost of ROP screening and treatment was covered by ROP patients' families. The respondent from Nicaragua also indicated that these costs were sometimes covered by state/subnational funds.

In five of the six countries with a national ROP policy (Argentina, Costa Rica, Cuba, El Salvador, and Panama), ROP screening and treatment were covered by the public sector, and in three of the six countries (Argentina, Costa Rica, and Mexico), there was an option for obtaining screening and treatment via a public–private partnership.

National ROP guidelines were reported by respondents from eight of the 10 countries (Argentina, Brazil, Colombia, Costa Rica, Cuba, El Salvador, Mexico, and Nicaragua) (Figure 1). The guidelines were published between 1981 (Costa Rica) and 2013 (Nicaragua). According to the respondents from all eight countries, the guidelines were drafted by national societies of ophthalmologists and neonatologists, and recognized by the Ministry of Health. The guidelines provided guidance on the role of antenatal steroids and early resuscitation in all eight countries except Brazil.

Respondents from four countries reported national legislation mandating eye examination of preterm infants (Figure 1). All legislation was passed in the past seven years (El Salvador in 2009, Argentina in 2010, and Colombia and Mexico in 2013).

Most respondents indicated that public sector Level 3 and 4 neonatal intensive care units (NICUs)—the highest level of intensive care for neonates—had ROP programs. Data on private sector NICUs with ROP programs were only reported for six countries, of which only three were reported as having NICUs with ROP programs (Argentina, Colombia, and El Salvador) (Table 4).

Respondents from five countries (Argentina, Costa Rica, Cuba, Dominican Republic, and El Salvador) reported an existing data collection and/or monitoring system for tracking the number of newborn babies screened for ROP in hospital settings (Figure 1). Argentina was the only country whose respondent indicated an annual report about ROP screening had been issued by the Ministry of Health within the past five years.

Overall, all four indicators of national-level government inputs on ROP (a national ROP policy including

prevention, screening, and treatment, with costs covered by the national/federal government; national guidelines for ROP; legislation mandating eye examination of preterm infants; and a data collection and/or monitoring system to track the number of newborn babies screened for ROP within hospital settings) were reported by respondents from two countries (Argentina and El Salvador). For countries whose respondents reported three or four of the national-level inputs and provided data on the proportion of eligible newborns screened for ROP (Argentina, Costa Rica, Cuba, and El Salvador), the average proportion of eligible newborns screened for ROP was 95%. For the remaining countries (those with one or two national-level inputs reported) whose respondents provided data on the proportion of eligible newborns screened for ROP (Colombia, Dominican Republic, Nicaragua, and Panama), the average proportion was only 35% (Table 3, Figure 1).

## DISCUSSION

To the best of the authors' knowledge, this research is the third study to examine ROP at the national or regional level in LAC and the second study to focus on the LAC region exclusively (6, 50, 51). Despite the fact that ROP has emerged as a key cause of visual impairment and blindness in the region, most previous research has focused on ROP incidence and/or treatment at one facility rather than at the national or regional level (1–3, 8–33), and only one study has investigated resources or coverage for ROP in NICUs (52). The paucity of data at the national level has made it difficult to accurately assess current ROP incidence and prevalence and the current status of prevention, detection, and treatment.

The 10 countries represented in the survey all used international criteria to define ROP and determine eligibility for an ROP examination. Use of defined criteria for classifying a neonate as being high-risk for ROP, in terms of birth weight and gestational age, based on carefully monitored program data, would help ensure that neonates receive the highest quality and level of care. However, the birth weight and gestational age cutoffs reported in this study for neonatal eligibility for ROP screening varied across countries. This may be due to the reported use of additional criteria for ROP screening eligibility (e.g., risk factors related to the level of oxygen saturation) for neonates outside the international birth weight and/or gestational age criteria, and the disparity of the level of development and available neonatal care across the 10 countries. Therefore, the authors propose that a set of universal criteria for neonates at high risk for ROP, based on birth weight, gestational age, and additional risk factors, be established internationally for each level of country development (low-, middle-, and high-income) to help health care providers identify all neonates eligible for ROP screening so that potential ROP cases don't "slip through the cracks" (4, 34–41).

For birth weight criteria, the authors propose that high-income countries classify neonates < 1 500 g as high risk for ROP and middle- and lower-income countries use a cutoff of < 2 000 g.

There was also substantial disparity across countries in the proportion of eligible premature newborns screened for ROP (Table 3). When compared with the information about national-level ROP inputs, these results indicated that national government buy-in and involvement in ROP screening and treatment legislation is related to a higher proportion of eligible premature newborns being screened and treated for ROP. For example, two of the three countries with the same three national-level inputs (government policies, national guidelines, and legislation mandating eye examination of preterm infants for ROP)—Argentina and El Salvador—reported that an impressive 90% of eligible premature newborns were screened for ROP.

Interestingly, respondents for Costa Rica and Cuba—the only two countries reported as screening all eligible premature newborns for ROP—indicated that neither country had legislation mandating eye examination of preterm infants for ROP (Table 3, Figure 1). Both countries were, however, reported as having government policies and national guidelines for ROP (Figure 1).

Respondents from eight countries (all but Dominican Republic and Nicaragua) reported an existing national ROP directive dictating that national/federal funding cover ROP screening and treatment; the respondent from Nicaragua reported that ROP screening and treatment costs were sometimes partially covered by state/subnational funds (Figure 1). However, information on funding directives should be interpreted with caution because, as shown in prior research, the existence of national guidelines does not necessarily translate into universal practice (52).

Laser treatment was reportedly used for treatment of sight-threatening ROP in all 10 countries included in this analysis. No pattern in the use of anti-VEFG injections (available in Argentina, Brazil, Colombia, El Salvador, and Nicaragua) or cryotherapy (available in Brazil, Colombia, and Mexico) for treatment of sight-threatening ROP was identified. Future research should investigate why certain ROP treatments are used in some countries and not others, and the effectiveness of each method—questions that were beyond the scope of this study.

According to the survey respondents, all countries that had vitreoretinal services for management of Stage 4 and 5 ROP had national policies for ROP (Argentina, Colombia, Costa Rica, Cuba, El Salvador, Mexico, and Panama), and most of them (all but Colombia and El Salvador) provided these services through the public sector. The lack of access to these services in the public sector in Colombia and El Salvador, along with evidence from the Dominican Republic—which does not have national policies, guidelines, or legislation on ROP—supports the claim that there is a positive relationship between national-level governmental involvement and the actual execution and availability of ROP screening and treatment in a given country.

### Limitations

This analysis had some limitations related to the small sample size and the different levels of development of the countries studied. In addition to including more national profiles, future research studies should collect data from multiple respondents from each country, and focus on middle-income countries, where preterm infants are more likely to survive and potentially experience ROP. While this study provides the most complete picture of ROP in the LAC region to date, only one-fifth of the original survey participant pool (56 experts) completed the survey in full, resulting in an analysis based on less than one-quarter of the 43 LAC countries. Nonetheless, the respondents that were included described the current ROP situation at the

national level in some of the most populous LAC countries, representing 45.0% of births in the region in 2014 (49).

Another limitation was the lack of data on wealth quintile or other source of equity data to ascertain if ROP cases are disproportionately occurring in the most marginalized populations, which prevented the authors from making any conclusions related to ROP and socioeconomic status. Only three respondents provided information on how the "poorest" populations were defined in their respective countries. One country reportedly used socioeconomic scale as the measure, defining the poorest as those in the lowest quintile; the other two countries reportedly focused on lack of access to health care services. These responses suggest that it would be beneficial for countries to agree upon a common socioeconomic measure for equity analyses.

## Conclusions

The results of this study showed great disparity across countries in terms of the coverage of ROP legislation and national data collection systems used for ROP monitoring. Only two countries reportedly had all four indicators of national-level government inputs on ROP included in this study, indicating extreme disparity in government involvement in ROP and in coverage and monitoring of ROP at the national level in the LAC region. Countries with three or four national-level ROP inputs averaged 95% of eligible newborns screened, while those with only one or two national-level inputs averaged 35% of eligible newborns screened. Greater national involvement and action clearly leads to positive results in terms of eligible newborns being screened for ROP.

While these results showed a positive relationship between national-level ROP inputs and ROP screening of eligible newborns, only 10 of the 43 eligible LAC countries were included in the study. Therefore, further research on the differences across the region, at the national level, in ROP policies, guidelines, and legislation; monitoring of ROP eligibility; ROP screening; ROP treatment; and the level of national government involvement and action related to ROP, is needed.

Including more countries in the study sample would allow future researchers to validate the strong correlation found in this study between national-level action on ROP and the proportion of eligible newborns screened for ROP. In addition, a larger study sample would allow for assessment of the relationship between specific national-level ROP inputs (e.g., legislation mandating eye examination for ROP, and ROP surveillance systems) and ROP screening and treatment of eligible newborns.

The authors also recommend strengthening ROP interventions at the political, programmatic, and technical level, given the positive correlation between national policies and the proportion of eligible newborns screened for ROP. This type of system strengthening would help address current gaps related to ROP screening, treatment, and surveillance across the LAC region.

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**Conflicts of interest.** None.

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**RESUMEN**

## Estudio de observación, multinacional y transversal de la retinopatía del prematuro en América Latina y el Caribe

***Objetivo.*** Reunir la información disponible de la región de América Latina y el Caribe sobre: 1) la incidencia nacional de la retinopatía del prematuro (RP); y 2) las aportaciones gubernamentales en materia de RP a nivel nacional (políticas, directrices, programas y financiamiento nacionales para la prevención, la detección y el tratamiento de la RP, incluidas las campañas de tamizaje) en el 2014.

***Métodos.*** En marzo y abril del 2015, se distribuyó en línea una encuesta multinacional a 56 expertos en medicina y en salud pública que trabajaban en el área de la RP en una serie de países de América Latina y el Caribe, en la que se pedía información cuantitativa y cualitativa que representase la situación de su país en el 2014, teniendo en cuenta la incidencia de la RP y las aportaciones gubernamentales a nivel nacional (políticas, directrices, programas y financiamiento nacionales para la prevención, la detección y el tratamiento de la RP, así como campañas de tamizaje).

***Resultados.*** Contestaron la encuesta íntegramente 11 expertos de 10 países de América Latina y el Caribe (Argentina, Brasil, Colombia, Costa Rica, Cuba, República Dominicana, El Salvador, México, Nicaragua y Panamá). Seis países cuentan con una política nacional de prevención, detección y tratamiento de la RP, con financiamiento nacional/federal para sufragar el tamizaje y el tratamiento. Ocho países cuentan con directrices nacionales sobre RP. En cuatro países, la legislación establece la práctica de exploraciones oftalmológicas a todos los prematuros. La mayoría de los países disponen de unidades de cuidados intensivos neonatales de nivel 3 y 4 con programas de RP en los establecimientos públicos de atención de salud. Cinco países cuentan con una base de datos o sistema de vigilancia para hacer un seguimiento del número de neonatos que pasan el tamizaje de RP en el ámbito hospitalario. En promedio, en el 2014, los países que disponían de tres o cuatro de los citados elementos de RP realizaron el tamizaje al 95% de los neonatos que presentaban los criterios oportunos, mientras que los países que solo contaban con uno o dos elementos de RP lo realizaron al 35%.

***Conclusiones.*** La implicación de los gobiernos nacionales y su participación en la legislación relativa al tamizaje y el tratamiento de la RP se relacionan con una proporción mayor de prematuros que pasan el tamizaje y reciben tratamiento por RP. En ulteriores investigaciones, habría que incluir a más países y evaluar el compromiso nacional con la RP, teniendo en cuenta el tamizaje y el tratamiento.

**Palabras clave** Retinopatía de la prematuridad; nacimiento prematuro; lactante, recién nacido; América Latina; Región del Caribe.