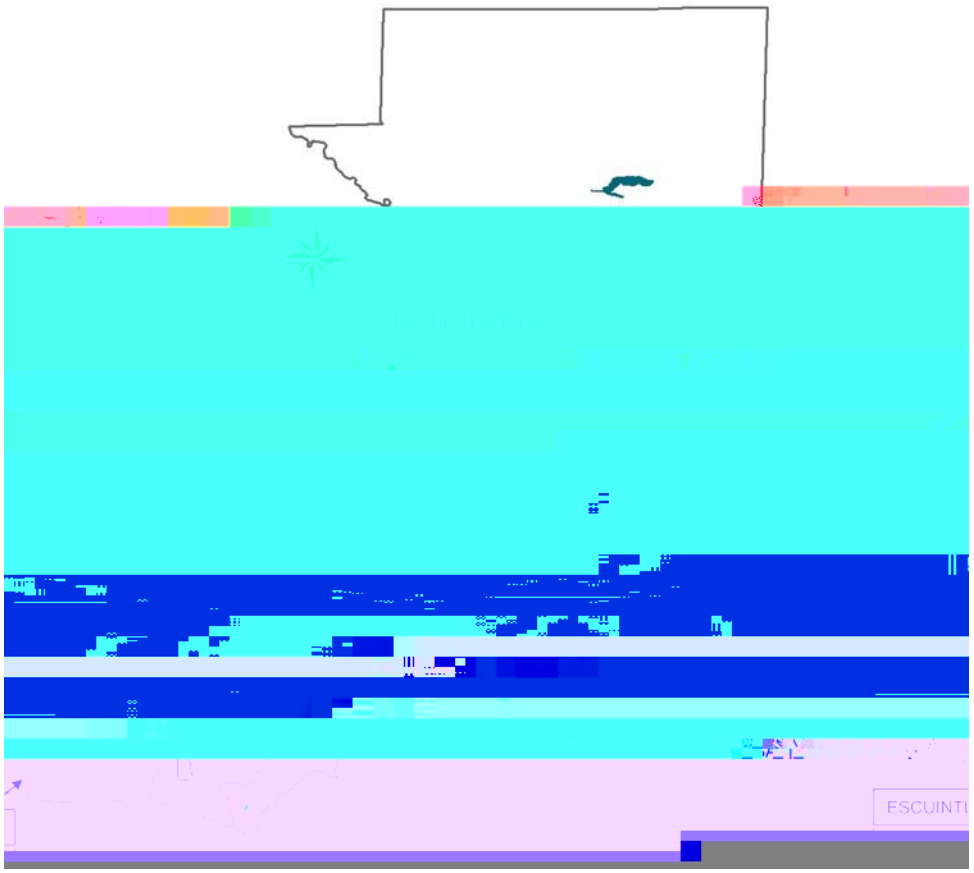

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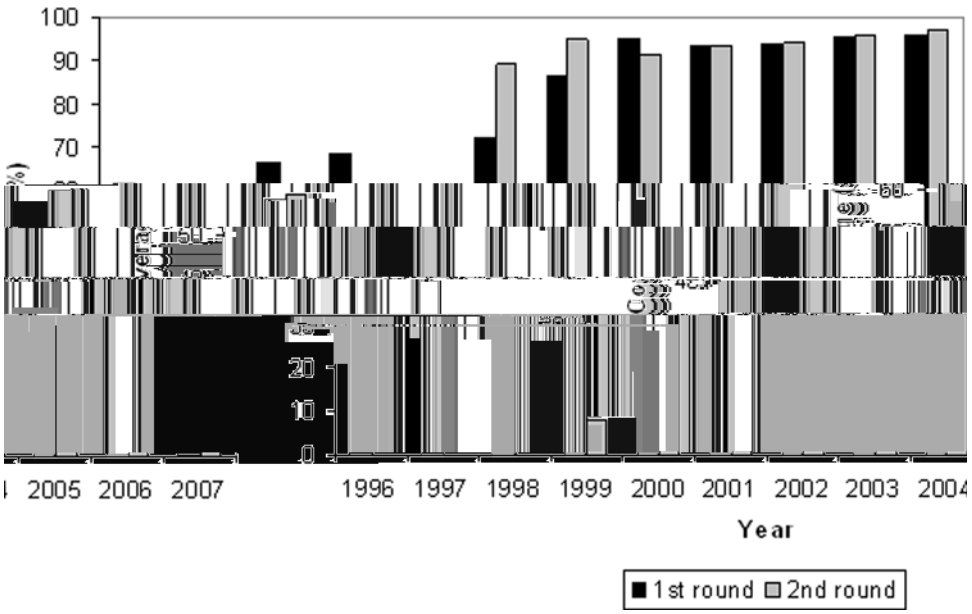
into those with <90 eligible residents and those with ≥90 eligible residents. In the small communities (<90 residents), all eligible individuals (N~266) were invited to participate. In the larger communities (≥90 residents), a PDA-based algorithm was applied in the field to randomly select 12% of the households and their members for inclusion in the evaluation (N~223).



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An ophthalmologist (OO) with extensive experience conducting evaluations of onchocerciasis-related eye disease performed the ophthalmologic evaluations. Visual acuity was measured with a Snellen chart using standard methods. Ocular examinations were conducted with a split-lamp in a darkened area after the patients were asked to sit with their head between their legs for 5 minutes [16]. MfAS were noted as live/coiled or dead/straightened. Data were entered in the PDA and later downloaded to a database for subsequent analysis.

We estimated the cumulative incidence of *O. volvulus* infection by measuring the prevalence of antibodies (IgG4) to a recombinant antigen of *O. volvulus*, OV-16, [17] in a stratified sample of school children 6–12 years old. We chose to stratify the sample into urban and rural schools because it was possible that levels of transmission would differ significantly between industrialized urban areas and rural communities located close to black fly breeding sites. The urban areas were taken to be the 2 large cities in the focus (San Vicente Pacaya and Palín), and the remainder of the schools located outside these cities were considered to be rural.

Information about schools and the number of children aged 6 through 12 who were attending was obtained with the help of the MSPAS and the Ministry of Education. Based on these figures, we estimated 4,674 eligible children in the urban schools and 9,815 in the rural schools. Schools were ordered at random within each stratum and then selected until the target sample size had been reached. The selected schools were visited and meetings were held with directors, teachers and parents to explain the evaluation. Teachers were asked to prepare a list of all enrolled children for the day of the evaluation.

Based on the WHO certification for elimination criteria (cumulative incidence $<0.1\%$) and considering antibody prevalence equivalent to the cumulative incidence rate, 3,000 children were required in each stratum to calculate a one-sided 95% CI that excluded 0.1% when no seropositives were encountered. Given an expected 30% non-response rate, our target sample size was 4,286 in each stratum.

The methods used to collect finger-prick blood samples and data on residency from children participating in the evaluation have been described previously [12]. Briefly, each participant provided 80–120 uL of blood by standard sterile finger prick procedures. Whatman filter paper No. 2 was used to collect the

blood directly after the finger prick. Children who didn't attend school on the appointed day were traced to their homes and asked to participate. Blood samples were processed within two months of collection using a standard ELISA [12].

O. volvulus transmission in the Escuintla-Guatemala focus was extensively documented from 1979 to 1984 by the Guatemala-Japan Cooperative Project on Onchocerciasis Research and Control, which conducted a large-scale larval elimination program in the area around the town of San Vicente Pacaya in the Department of Escuintla [21]. Several communities in that area

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Ack

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