2011

TRACHOMA ELIMINATION IN THE AMERICAS

First Regional Meeting of Program Managers

Bogota, D.C., May 23 – 25, 2011

Pan American Health Organization
Regional Office of the World Health Organization

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GLOSSARY OF TERMS AND ACRONYMS

ATO	Annual Treatment Objective
DALY	Disability-adjusted life year
IDB	Inter-American Development Bank
CID	National Commission for the Development of Indigenous Peoples – Government of Mexico
CO	Corneal opacity
Community	Minimum group of individuals subject to trachoma mass control activities
CONAGUA	National Water Commission – Government of Mexico (by its Spanish acronym)
Contraindication	A condition, especially any condition of disease, which makes a particular treatment improper or undesirable
District	The normal administrative unit for health care management
NID	Neglected Infectious Diseases
Endemic	Present in a population or area at all times (said of a disease or infectious agent)
EPS	Health risk insurance company in the Colombian Health System (by its Spanish acronym)
GET 2020	The Alliance for the Global Elimination of Blinding Trachoma by 2020
HDI	Human Development Index
Incidence	The number of new cases of a specific disease or infection occurring in a particular population over a defined period
IPS	Health Service Delivery Institution in the Colombian Health System (by its Spanish acronym)
ITI	International Trachoma Initiative
LAC	Latin America and the Caribbean
UIG	Ultimate Intervention Goal
MSPAS	Ministry of Public Health and Welfare of Guatemala (by its Spanish acronym)
NTDs	Neglected Tropical Diseases
WHO	World Health Organization
Prevalence	The number of cases of a disease that are present in a population at a particular time
Region	Administrative unit one level higher than the district
SAFE	Surgery, Antibiotics, Face-washing, Environmental improvement
SECAM	Rural Affaires Unit – Government of Chiapas State, Mexico (by its Spanish acronym)
SEDESOL	Social Development Department – Government of Mexico (by its Spanish acronym)
Sign	Evidence of a disease perceptible to an examining physician, as opposed to the subjective sensations (symptoms) of the person with the disease
TF	Trachomatous inflammation – Follicular
TI	Trachomatous inflammation – Intense
TRA	Trachoma Rapid Assessment
TS	Trachomatous scarring
TT	Trachomatous trichiasis

Executive summary

Neglected tropical diseases affect population groups living in poor socio-economic conditions, with low income and education levels, poor housing, lack of access to basic services such as clean water and sanitation, and in areas where armed conflict is present, environmental conditions are deteriorated and there are access barriers to health services. As they share similar social and environmental factors, neglected tropical diseases frequently coexist in the same geographical areas. The burden of neglected tropical diseases in Latin America and the Caribbean represent 8.8% of the global disease burden, i.e., around 5 million DALYs[1]. In October 2009, PAHO's Directing Council adopted Resolution CD49.R19 on the "Elimination of Neglected Diseases and other Poverty-related Infections[2]", which expresses the commitment of member states regarding specific goals for the control or elimination of neglected diseases.

Trachoma control was set as a priority by the World Health Organization already in 1998, a purpose later ratified in Resolution CD49.R19 by the Ministers of Health for the Region of the Americas, establishing the commitment of eliminating all new cases of blindness caused by trachoma by 2015 (reduction of trachomatous trichiasis prevalence to less than 1 case per 1,000 and reduction of trachoma inflammation - follicular prevalence to less than 5% in 1-9 year-old children). To accomplish this task, a global strategy known as SAFE was designed including four basic components: antibiotic treatment for the infection, surgery for the inflammatory sequelae and implementation of sanitation and education activities aimed at preventing the occurrence of new cases.

The Pan American Health Organization's Regional Programs for Neglected Infectious Diseases and for Eye Care and the Prevention of Blindness are working together with a series of organizations and strategic partners focused on these issues to help the countries in the Region move towards their elimination goals. This First Regional Meeting of Trachoma Elimination Program Managers in the Americas was organized and is held as part of these efforts and its aim is to analyze the present situation of the disease in the Region and to define activities that will enable the achievement of the goals established for the 2011 – 2015 period.

The response to the invitation for this meeting could not have been better: Brazil, Guatemala, Mexico and Colombia, the host country, sent their experts and delegates from the Global Initiative against Trachoma (ITI), from the Lions Club International and from Colombia's SightFirst initiative also accepted the invitation. After a detailed discussion on their strengths, weaknesses, opportunities and threats regarding each of the components of the SAFE strategy, the participants established a starting point to promptly set their Ultimate Intervention Goals and to design and implement their action plans in the framework of the integrated plans against neglected infectious diseases. The meeting counted as well with the sponsorship of the Global Network for Neglected Tropical Diseases (GNNTD); together with the Inter American Development Bank and PAHO, the Network has been promoting an integrated approach to the control and elimination of neglected diseases in Latin America and the Caribbean since 2009.

[1] Hotez PJ, Bottazzi ME, Franco-Paredes C, Ault SK, Periago MR. The Neglected Tropical Diseases of Latin America and the Caribbean: A Review of Disease Burden and Distribution and a Roadmap for Control and Elimination. PLoS Negl Trop Dis 2(9): e300. doi:10.1371/journal.pntd.0000300. Accessed in June 21, 2011, at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2553488/?tool=pubmed

[2] Pan American Health Organization, Directing Council. Resolution CD 49. R19: "Elimination of neglected diseases and other poverty-related infections"; October 2, 2009. Accessed on June 21, 2011, at: http://new.paho.org/hq/index.php?option=com_content&task=view&id=1640&Itemid=1425&lang=es

There is still evidence of trachoma in the Region of the Americas in Brazil, Guatemala and Mexico, and it is estimated that around 50 million people live in risk areas.[3] A paper presenting clinical evidence of trachoma in a Colombian indigenous community was published in 2010, but there is no data on prevalence yet.[4] At the end of 2010, Guatemala completed a survey to assess historic trachoma transmission foci whose results are to be published in 2011. Brazil completed in 2010 the mapping and classification of states according to their trachoma risk, and Mexico has set priority activities in its only focus located in the State of Chiapas. No country in the Region is presently implementing massive treatment with azithromycin, and only Brazil and Mexico are delivering individual treatment to new cases detected and surgery to trichiasis patients. Mexico will begin documenting the probable interruption of transmission in its Chiapas focus in 2011.

These were the main conclusions:

1) Brazil, Colombia, Guatemala and Mexico have stated their commitment to reinforce actions aimed at reaching their elimination goals by 2015.
2) Brazil has laid an intervention plan against trachoma based on the stratification of states according to epidemiological and poverty parameters with the aim of enhancing its activities until 2015; the approval and implementation of the plan is expected for the second semester of 2011 in the framework of the national initiative for the control and elimination of neglected diseases.
3) During the meeting, Colombia set up a national committee to speed up an immediate intervention plan among Vaupes indigenous communities where cases have been detected, and to structure a mid term intervention plan aimed at determining the prevalence in Vaupes and other departments located in the Orinoco and Amazon basins so as to enable the implementation of the SAFE strategy components.
4) Guatemala will complete its trachoma intervention plan based on the results of a survey carried out in four municipalities during 2010 as part of its National Plan for the Prevention of Blindness.
5) Mexico is implementing a plan for the elimination of trachoma in Chiapas based on the SAFE strategy. With the support of PAHO, the country will start gathering the documents required to verify elimination as part of the regional goals; they will be adjusting their ultimate intervention goals and annual objectives to enhance monitoring and follow up.
6) The International Trachoma Initiative (ITI) ratified their commitment on continued assistance to the Region of the Americas in the effort of eliminating trachoma, especially through azithromycin donations if the countries so required them; to this end they will also offer technical support for countries to comply with donation requirements.
7) The Lions Club International and the SightFirst initiative also committed to continue supporting the work and efforts of the countries in the Region for the implementation of the SAFE strategy, especially regarding surgeries.

The main recommendations were the following:

1) To keep organizing regional meetings on trachoma to monitor and follow up each country's progress, and to share experiences and enhance relations among the countries with PAHO's technical cooperation and the support of international strategic partners.
2) All four countries requested PAHO to continue its cooperation activities aimed at the implementation of their trachoma action plans according to the specific situation in each country.
3) There is a need to encourage and promote cooperation between Guatemala and Mexico in Central America and between Brazil and Colombia in South America aimed at implementing surveillance

[3] Schneider MC, Aguilera XP, Barbosa da Silva Junior J, Ault SK, Najera P, Martinez J, Requejo R, Nicholls RS, Yadon Z, **Silva JC**, Leanes LF, Roses M. 2011 Elimination of Neglected Diseases in Latin America and the Caribbean: A Mapping of Selected Diseases. PLoS Negl Trop Dis 5(2): e964. doi:10.1371/journal.pntd.0000964.

[4] Miller H, Gallego G, Rodríguez G. Evidencia clínica de tracoma en indígenas colombianos del departamento del Vaupés [Clinical evidence of trachoma among Colombian indigenous communities in the Department of Vaupes]. Biomédica, 2010;30:432-9

activities in border communities and at sharing experiences between countries that have work the most on trachoma in the last years such as Brazil and Mexico, and those that are just starting or resuming their activities in this field such as Colombia and Guatemala.

4) Trachoma surveillance must be enhanced in other countries in the Region for which it is necessary to inform about present foci and about the importance of increasing surveillance in border areas.
5) Close links and joint work must be established with international strategic partners such as the International Trachoma Initiative (ITI), the Lions Club International, SightFirst, Johns Hopkins University and the Cristoffell Blinden Mission (CBM), among others, towards achieving the goals set for the Region.

We want to thank Sabin/Global Network for Neglected Tropical Diseases (Sabin/GNNTD), whose support was essential for holding this *First Regional Meeting of Trachoma Elimination Program Managers in the Americas*.

This comprehensive report was compiled to keep a record of the present situation and to follow up the commitments adopted and the goals to be achieved during the following five years.

Welcoming remarks

Dr. Juan Carlos Silva, Regional Advisor on Eye Care and the Prevention of Blindness, PAHO/WHO.

Dr. Juan Carlos Silva opened the meeting and welcomed all participants. He reminded the commitment made by all the Ministers of Health of the Americas to work towards the elimination of trachoma, in whose context this meeting of Program Managers from countries where removable foci have been detected was convened. The agreement was to hold annual meetings to exchange opinions, share progress, and give and receive recommendations on the identification of needs and alternatives.

Dr. Juan Carlos Silva introduced Dr. Danik Valera, Deputy Director of Public Health Control and Surveillance at the Colombian National Institute of Health (INS, by its Spanish acronym), institution attached to the Ministry of Social Protection and in charge of neglected diseases, among others.

Dr. Danik de los Ángeles Valera Antequera, Deputy Director of Public Health Control and Surveillance, INS, Colombia

Dr. Danik Valera thanked the Pan American Health Organization for the initiative of convening the first meeting of trachoma elimination national program managers. She greeted all delegates from Brazil, Guatemala, Mexico and Colombia on behalf of the Colombian National Institute of Health, institution responsible for the control and surveillance of public health issues in Colombia, and stated their committal with the implementation of all the plans, proposals and strategies resulting from the meeting aimed at achieving the goal of eliminating trachoma by 2015.

In her welcoming speech, Dr. Valera briefly presented the background of this initiative launched in 2006 when the Director of the Pan American Health Organization in her annual report identified Brazil, Guatemala and Mexico as trachoma endemic countries and underscored the need to enhance and plan actions for a common strategy to identify all endemic areas and the presence of trachoma among vulnerable populations, such as indigenous communities. She then recalled the five-year report presented by the Director of the Pan American Sanitary Bureau in 2007 when the initiative to fight neglected diseases, among them trachoma, was born. Finally, she mentioned Resolution CD49.R19 on the "Elimination of neglected diseases and other poverty-related infections" issued in October 2009 when the Pan American Health Organization's Directing Council established not only the commitment signed by Member States, but also specific goals for the control or elimination of such diseases, among which the elimination of trachoma was set for year 2015. Additionally, she shared the results of the 2010 Miller, Gallego and Rodríguez study reporting for the first time the presence of trachoma in five indigenous communities of the Department of Vaupes in Colombia, which meant the inclusion of the country in the group of those engaged in achieving the elimination of trachoma by 2015 or before if possible.

After introducing all participants, Dr. Juan Carlos Silva explained the meeting's agenda and methodology: six sessions dedicated to the global, regional and national contexts of the disease including progress and challenges; presentations on the tools used in each country to design elimination plans and on the general framework of the SAFE strategy; a SWOT analysis of each of the SAFE strategy components in each participating country; the design of integrated plans for trachoma elimination and of a roadmap for the next five years.

Session 1. Trachoma background at global, regional and national levels

Global elimination of trachoma

Presented by: Dr. Juan Carlos Silva, Regional Advisor for Eye Care and the Elimination of Blindness, PAHO/WHO

Review of the disease

- Eye infection caused by *Chlamydia trachomatis* transmitted from person to person by direct contact with affected skin areas, but commonly related to lack of access to clean water, presence of flies and overcrowding; in other words, this is a poverty-related disease.
- Infection starts in childhood. Repeated infection and its impact on the conjunctiva result in scarring and, consequently, retraction of the upper eyelid producing eyelashes to turn inwards and thus rub the cornea. This permanent trauma produces loss of corneal transparency, which finally leads to blindness.
- Irreversible blindness appears at the age of 30 to 40 years, occurring more commonly in women given that they spend more time with children.

Figure 1. Pictures of trachoma cases for diagnostic support

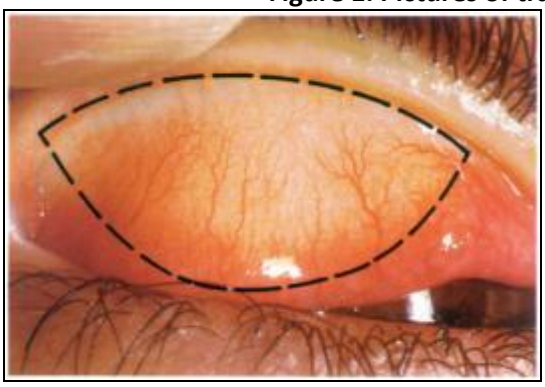
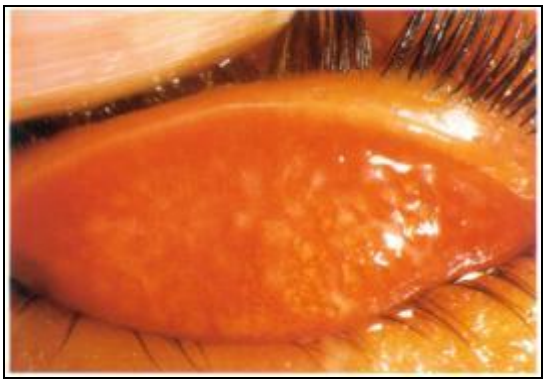


Image of a normal conjunctiva

Follicular conjunctivitis



Follicular and inflammatory conjunctivitis

Conjunctival scarring determining eyelid contracture and entropion

Source: WHO. Available, among others, at: http://www.who.int/blindness/causes/priority/en/index2.html

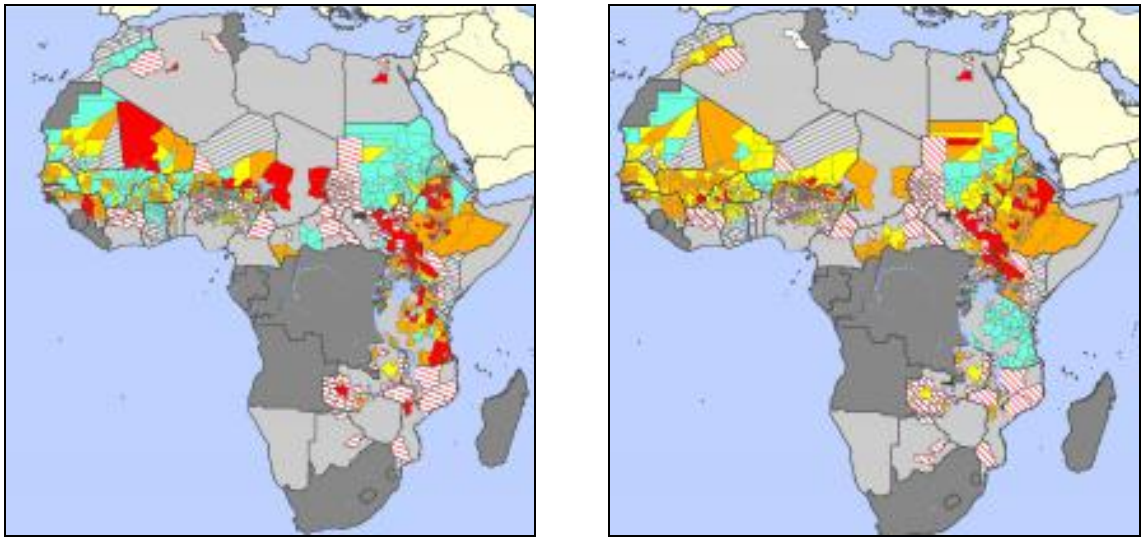
About the Global Program for the Elimination of Blindness caused by Trachoma

- In 1998, the Resolution 51.11 of the World Health Organization called all Member States to carry out an assessment of trachoma-endemic areas; as a response, Brazil and Mexico have already completed a clear mapping of their present situation regarding trachoma. Guatemala is now completing the mapping and Colombia is starting to do it. The Resolution also called for the implementation of the SAFE strategy, as well as for a global partnership aimed at eliminating trachoma. Naturally, the whole process must go hand in hand with community development activities for improved access to water and basic sanitation.
- WHO has called for enhancing cooperation to eliminate trachoma; for the implementation of operative research within the programs; for the strengthening of inter-institutional collaboration and with other specialized organizations (e.g., the ITI -*International Trachoma Initiative*), academic institutions (e.g., Johns Hopkins University) and among countries; for fundraising activities beyond the framework of official budgets and for reporting to the World Health Assembly on the progress achieved as evidenced by indicators.

Trachoma in the world

- Trachoma affects about 84 million people of whom around 8 million are visually impaired. It was once endemic in most countries. It is responsible, at present, for more than 3% of the world's blindness, but the number keeps changing due to the effect of socio-economic development and current control programs for this disease. In spite of this, trachoma continues to be endemic in many of the poorest and remotest rural areas of Africa, Asia, Central and South America, Australia and the Middle East.

Map 1. Trachoma in Africa – 16 surveys, 2011

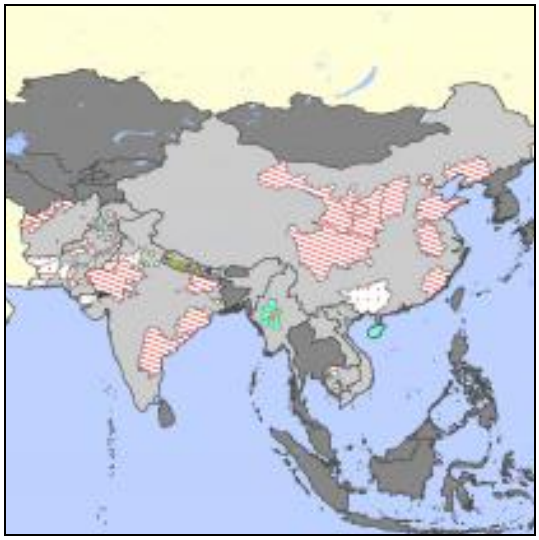


Active trachoma in Africa *Trichiasis in Africa*

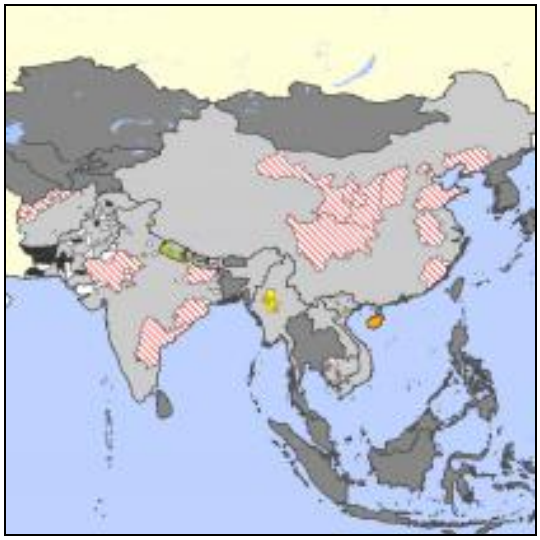
Source: London School of Hygiene and Tropical Medicine

- The areas in red in the maps correspond to those where there is high prevalence (more than 30%) of active trachoma (left) and trichiasis (right) in Africa. Trichiasis is a consequence of trachoma, and the fact is that if not treated with surgery, trichiasis cases result in blindness.

Map 2. Trachoma in Asia and Western Pacific – 14 endemic areas, 2011 (incomplete data)



Active trachoma in Asia



Trichiasis in Asia

Source: London School of Hygiene and Tropical Medicine

- Areas shown in pink within Asia are suspected or have shown signs of trachoma presence. Data is missing to typify which have prevalence between 5 and 10% and which are above 10%. This is not clear yet.

Map 3. Trachoma in the Middle East, 2011 (Some countries have achieved their goals. Data is still missing for Iran, Oman, Saudi Arabia & Emirates, Iraq and Yemen)

Active trachoma in the Middle East

Trichiasis in the Middle East

Source: London School of Hygiene and Tropical Medicine

- In the Middle East, there are problems still in Yemen, where hyper-endemic areas persist, but other countries have already eliminated the disease.

The Alliance for the Global Elimination of Trachoma

- All of us are part of this alliance: governments, non governmental organizations, supporting international organizations and the World Health Organization as facilitator of the process. We are all responsible.
- The activities of the Alliance for the Global Elimination of Trachoma include epidemiological assessments, project implementation, coordination and follow up; surveillance, evaluation and fundraising.

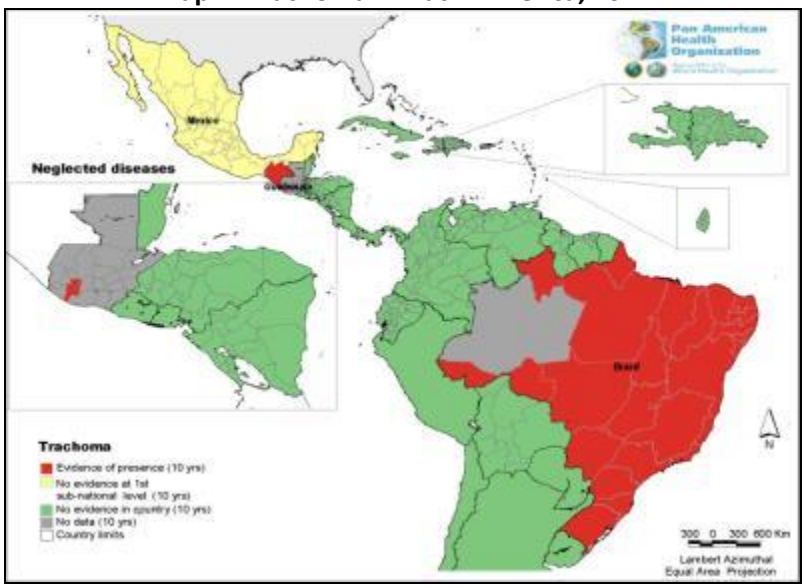
Conclusions arrived at in Global Alliance meetings during 2010 and 2011

- In 2010, the Alliance requested that priority be given to countries where the situation was most serious. Fortunately, prevalence in our Region is not very high. There are small foci where prevalence is more than 30%, but they are not very big.
- Countries where the problem is small, or where elimination is close or the process is just starting should not be forgotten.
- The work should be jointly addressed by neglected diseases and prevention of blindness programs.
- Programs should be led by the governments with the support of partners.
- It is important to implement plans with annual objectives and budgets to be able to reach the Ultimate Intervention Goals (UIG). Ultimate Intervention Goals must be defined and annual plans must be laid based on them. We have 7 to 8 years left, as the last year, i.e. 2020, must be dedicated to collecting the information required.
- Data collection on the SAFE strategy implementation must be carried out in order to monitor indicators and progress towards the achievement of goals.
- The requirements and the process to certify the elimination are still being defined.
- In the 2011 meeting in Lima, the significant progress achieved since 1997 was acknowledged, but there is still a long way to go until trachoma is eliminated.
- The importance of the link between the trachoma problem and the programs for neglected diseases and for the prevention of blindness has been acknowledged, and this represents an opportunity.
- A new template has recently been adopted in Kenya for the development of annual plans, and the recommendation is to use this template to help in planning.
- All SAFE strategy components must be included. It should no be restricted to surgery and the use of antibiotics, but should comprise human development elements such as facial cleanliness and environmental improvement, which will contribute to the final elimination of the disease. If this is not accomplished, the disease will re-emerge.

The situation in Latin America

- Besides the WHO Resolution, Resolution CD49.R19 of the Pan American Health Organization, signed by all Member States in 2009, establishes the commitment adopted by the Ministers of Health to eliminate all new cases of blindness caused by trachoma (TT < 1/1000), to reduce active trachoma prevalence (TF and TI < 5%) in 1 to 9 year-old children and to implement the SAFE strategy.

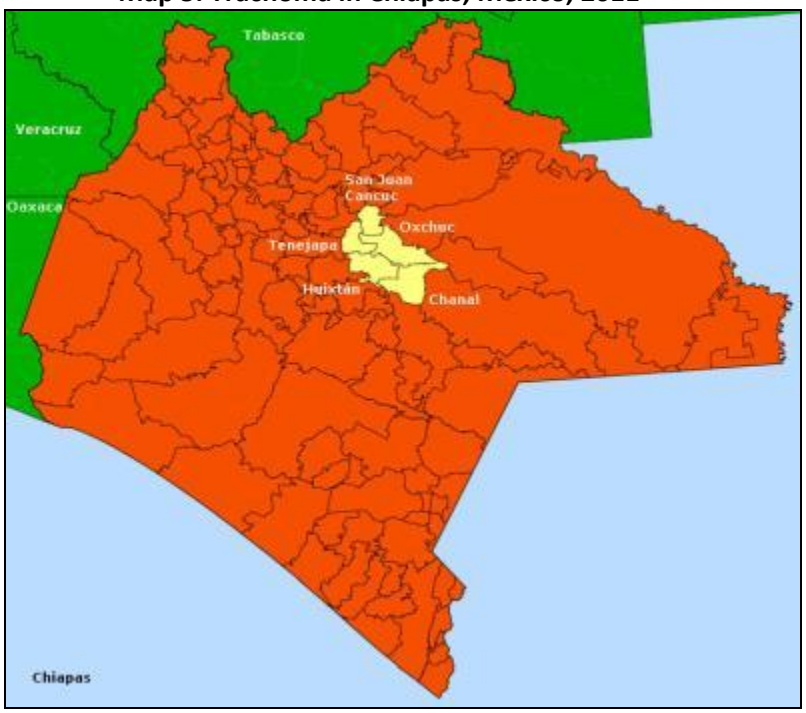
Map 4. Trachoma in Latin America, 2011



Source: PAHO, Epidemiological profiles of neglected diseases and other infections related to poverty in Latin America and the Caribbean, 2009.

- Until now, only three countries were deemed as endemic: Brazil, where practically all states, especially in the North, are trachoma endemic; Guatemala, with historical endemicity in Solola and Suchitepequez, where the Committee for the Blind and Deaf has undertaken significant interventions for years, and Chiapas in Mexico.

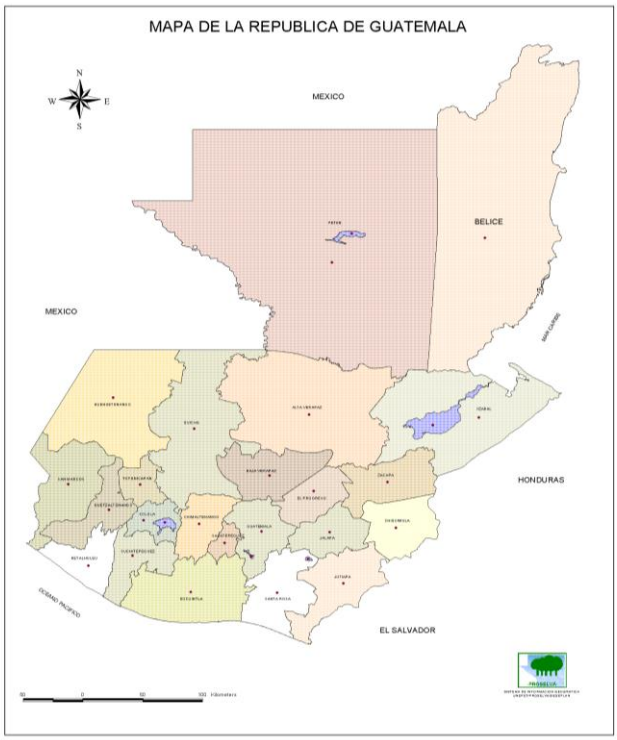
Map 5. Trachoma in Chiapas, Mexico, 2011



Source: PAHO, Mexico.

- Chiapas program was started in 2001. Its elimination goal was set for 2013 and they are on the verge of reaching it.

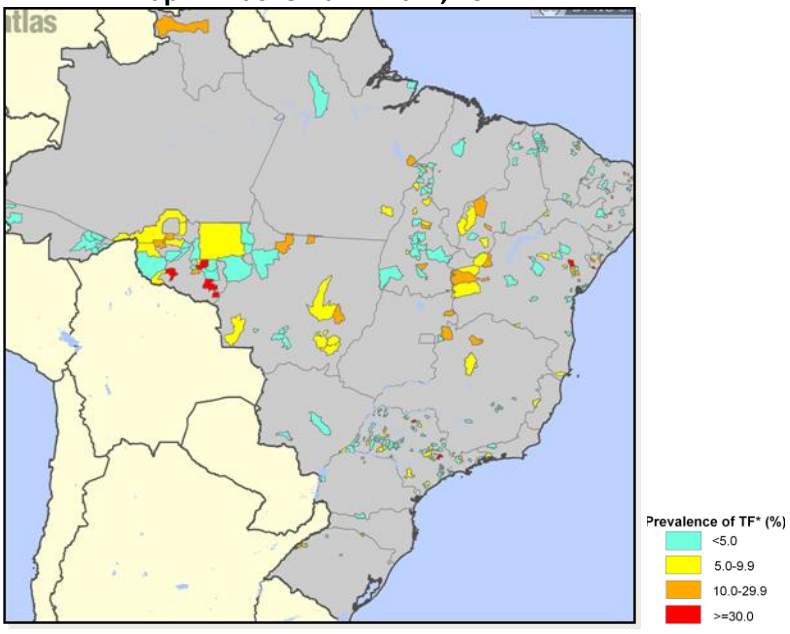
Map 6. Trachoma in Guatemala, 2011



Source: Committee for the Blind, Guatemala.

- New foci have been detected in some sub-districts of Guatemala, two of them with more than 5% prevalence; these foci are circumscribed to very specific areas. There are some communities with more than 30% prevalence.

Map 7. Trachoma in Brazil, 2011



Source: London School of Hygiene and Tropical Medicine.

- From 2000 to 2008, a study was undertaken in Brazil to identify municipalities with low socio-economic development and trachoma prevalence. The survey was done in 295 of the total

5,000 municipalities. Indigenous communities were also considered, as there were few experiences among them, and today intervention plans are being designed for jungle indigenous communities.

- Additionally, Brazil has been working in its national plan, as well as in some state plans, some of which have already completed their trachoma intervention component.
- Map 7 shows the border with Peru, Bolivia, Venezuela and even Paraguay, where trachoma foci have been identified, although prevalence there is not very high, except in two areas. In almost all these countries foci have been detected.

Map 8. Trachoma in Colombia, 2010

Source: Miller H, Gallego G, Rodríguez G. Evidencia clínica de tracoma en indígenas colombianos del departamento del Vaupés [Clinical evidence of trachoma among Colombian indigenous communities in the Department of Vaupes]. Biomédica, 2010;30:432-9

- Our Colombian colleagues attending the present meeting carried out a study in some communities whose findings were published in the journal of the National Institute of Health. They found active trachoma and trichiasis cases, which proves the presence of trachoma in the past, probably active trachoma.

Progress achieved in the Region

- Mexico is close to eliminating the disease
- Brazil already counts with data at national level; there is a new five-year national plan and also updated state plans
- A survey was already carried out in Guatemala during 2011
- TT and TF cases were identified and validated in Colombia. Besides those reported in the publication, new cases have been detected.

Countries by category

1. Non active old endemic foci: There is no active trachoma (Mexico)
2. Active endemic foci (Brazil, Guatemala)
3. Recently reported foci under study (Colombia)
4. Possible foci not reported before in Brazil's bordering countries (Venezuela, Bolivia, Peru). Warnings have already been issued in international meetings, so ophthalmologists in these countries begin searching for cases.

- Verification in Mexico must establish if there are trichiasis cases still pending surgery; TT detection and treatment must continue until reaching the goals; active surveillance must continue to monitor the behavior of the disease, and the information must be collected and systematized for the verification of elimination.
- In Brazil, state baseline studies would be required to typify the foci; SAFE strategy implementation plans must be laid for each state or municipality; financial support must be sought for the program, management and implementation should be enhanced.
- In Colombia, there is a call for greater leadership from national health authorities, whose presence in the meeting shows clearly their commitment; there is need to plan a baseline study, maybe using the instrument of a census of communities to be the base for interventions; lab confirmation of data collected is required; a TT intervention plan must be laid and financial support should be sought.
- Regarding the possible foci not yet reported in Brazil's bordering countries (Venezuela, Bolivia, Peru), it is advisable to inform their national health authorities and NGOs on the risk of active or scarring trachoma presence in the border with Brazil; a case-detection program should be encouraged in municipalities at risk and, later on, include other steps such as lab confirmation procedures and a plan for a reference study. The basic task, however, is to promote advocacy activities to start trachoma health care.

Needs identified for the Region (presented at the recent GET 2020 meeting)

- Carry out an annual regional meeting of program managers (May 2011, i.e., this is the first meeting).
- Technical support for survey design including baseline studies, as well as final report to certify trachoma elimination.
- Technical support for trachoma grading. The grading varies a lot among observers.
- There is need to train trachoma surgeons. Programs should not be discredited due to deficient surgeries. Excellence must be sought, avoiding both over and under-correction.
- Instruments for program planning. A form or template will be prepared.
- Laboratory support.
- Funding sources.
- Guidelines for the verification of elimination, as there is no clear definition of this aspect yet.

Session of questions and comments

Question 1: Has somebody used trachoma rapid evaluation (TRA) in the world? What is the experience in this regard at world level? Is it worth to introduce it in Colombia?

Answer 1:

- TRA in Brazil is not adequate because prevalence is too low. TRA is best when prevalence is very high, above 30% (e.g., in Africa). In Brazil we have a very low prevalence. From an epidemiological point of view it is better to undertake technically adequate surveys.

Rapid evaluation does not provide a very good confidence interval or an accurate prevalence.

- In Africa, where prevalence is very high, trachoma rapid evaluation is more feasible. But, in general, epidemiological evaluations should follow these steps: 1) Identify at-risk populations, be it because there are trachoma reports from the past or poor socio-economic conditions, which was the criterion used in Brazil to apply the survey. Usually, this is done by districts or states and, depending on the findings, it is extended to higher levels. It is generally done at sub-national levels because those are the places where trachoma is usually present in our countries; 2) in countries such as in Africa, where socio-economic conditions are usually poor, the rapid evaluation method can be used.
- Rapid evaluations enable us to know if a disease is present or not, but they do not measure prevalence, and we need prevalence data to: 1) Determine what type of intervention is to be implemented for each of the SAFE strategy components; 2) evaluate progress towards set goals: if we need to reduce follicular inflammatory trachoma prevalence, we have to know clearly the prevalence through a population-based survey. In the case of our Region, the use of the trachoma rapid evaluation is unlikely.

Question 2: Have there been trachoma studies in Colombia before? Knowing the socio-economic conditions in some of its regions, for example the Amazon area, why no interest had been shown?

Answer 2:

- The same has happened in almost all the countries in our Region. In Brazil, for example, when trachoma was mentioned, the medical community said the disease was not present because usually this type of patients never goes to the doctor. You find them only if you look for them. In Colombia, the first study was done in Vaupes, and we don't rule out the possibility of cases occurring in other areas too. Living conditions of Vaupes indigenous communities do not differ much from those in Guainia or the Amazon. We must undertake new studies and encourage the search for signs. Once the areas are detected, we can go ahead with typifying.
- In jungle nomadic communities, it would be useful to implement something similar to the rapid data collection method, as conditions are not appropriate to undertake surveys. First, foci could be identified, and then more complete studies could be carried out.
- That is precisely why trachoma is a neglected disease. Health care institutions ignore what trachoma is. In rural areas there are no specialized physicians. A rural doctor or health promoter sometimes does not even know what malaria is, much less trachoma. Poor populations are the most neglected ones within health care systems. That is why the World Health Organization has insisted on including trachoma in the group of neglected diseases so it becomes a visible issue and gets due attention, as it competes with other public health priorities such as tuberculosis, dengue, chronic diseases, etc.

Presentation by Dr. **Lisa Rotondo**, Director of the International Trachoma Initiative (ITI), through which azithromycin, the antibiotic used in trachoma control, is donated.

- The Initiative is in charge of this issue since 2004.
- Our work has developed mainly in Africa, but we are pleased to learn that all parties involved in the Americas are coordinating efforts to tackle the issue guided by the idea that there are no small problems, and that this one needs to be addressed and solved.
- The main objective of the ITI is to ensure antibiotics delivery in countries where trachoma control and elimination programs exist.
- The ministries of health must comply with the selection criteria established to access our program.
- We also work in resource mobilization through fundraising activities in other countries to support those in need of funds for their trachoma elimination plans.
- Information management is also one of our objectives, as it is required to ensure that we are moving on the right path. The information collected by the ITI is available at its Web site www.trachoma.org. The data is provided not only by country health ministries, but also by other partners and surveys undertaken in different countries. We invite you to send us updated information if you happen to see outdated data when consulting, or if you have new information.
- Although resolutions talk about elimination, we have to be aware that if this is not yet possible, we do have the opportunity to eliminate blindness caused by trachoma and to reduce morbidity due to *Chlamydia trachomatis* infections.

Presentation by Dr. **Kristen Eckert**, Coordinator of the SightFirst Program, Lions Club International for Latin America and the Caribbean.

- The Program works in three sub-regions in Latin America: South America, Central America and the Caribbean. The Lions Club has contributed to trachoma programs in Africa and partly in Asia with funds that sum up to more than 12 million dollars.
- Our programs aim at the prevention of blindness, especially through surgery and training, social mobilization, public relations and communication activities related to surgery. For more than a year now we have been investing in elimination plans and we expect to extend our support to the countries attending this meeting, considering they are just few countries in the Region. There is also an opportunity to integrate trachoma elimination programs and those of onchocerciasis, as they also receive the Lions Club support in the Region.
- Our donations are channeled through Lions Clubs in each country, and they manage the funds establishing partnerships with health ministries and other partners such as hospitals and NGOs, or directly with the World Health Organization which is the guiding and coordinating institution for the certification of elimination.

Trachoma in Brazil: situation, progress and challenges

Presentation by **Dr. Maria de Fatima Costa Lopes**, Manager of the Trachoma National Program, Brazil.

General context

- According to the 2010 census, Brazil's total population is estimated in 190 million people, out of whom 80% live in urban areas and only 20% in rural areas. The country has 27 states or federal units and 5,565 municipalities. Trachoma cases have been reported in all 27 states.

Map 9. Political-administrative division of Brazil

Source: Secretaria de Vigilância em Saúde, Ministério da Saúde, Brasil.

Epidemiological situation of trachoma

- Trachoma in Brazil was classified as an important public health problem already in the middle of the twentieth century when a high prevalence of the disease was detected in a series of states. The Ministry of Health established a Control Program based on a centralized, federal and vertical care model whose activities are directly managed by the Ministry of Health. Since then, national trachoma campaigns are conducted by the Ministry.
- From 1970 to 2000, the prevalence of trachoma decreased, and this led to minimize the importance of the problem and, consequently, to the gradual disintegration of the National Trachoma Control Program, whose financial and technical resources were unfortunately withdrawn. Thus, the disease lost priority in the framework of surveillance activities in the country to the point that by 1999 only six states were implementing trachoma control and surveillance in Brazil. Map 10 shows trachoma case distribution in Brazilian municipalities in 1999, which was limited to a relatively low number of states.
- Surveys conducted in the 1980-1990 period showed different types of population groups affected by the disease, as well as prevalence estimates, but there was no comprehensive national survey on the epidemiological situation of trachoma in the country.
- For this reason, a National Survey on Trachoma Prevalence was conducted in 2002 among 1st to 4th grade primary school students from municipalities with a Human Development Index below the national average, i.e., the poorest municipalities of Brazil. The sample was random, stratified according to the size of the population in each municipality, and classified in three population groups: younger, medium and elder.

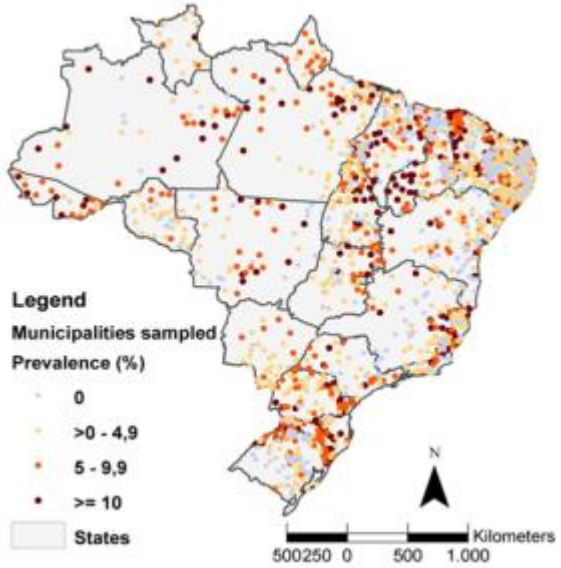
Map 10. Distribution of trachoma cases in Brazilian municipalities, 1999.

Source: Secretaria de Vigilância em Saúde, Ministério da Saúde, Brasil.

- The survey used the definitions set by the World Health Organization:
  TF → Trachomatous inflammation - follicular
  TI → Trachomatous inflammation – intense
  TS → Trachomatous conjunctival scarring
  TT → Trachomatous trichiasis
  CO → Corneal opacity

- As a result of the survey, trachoma cases were found in all 27 states and classified according to the strata set and the prevalence percentage (Map 11).

Map 11. Prevalence of trachoma by municipalities in Brazil, 1999.



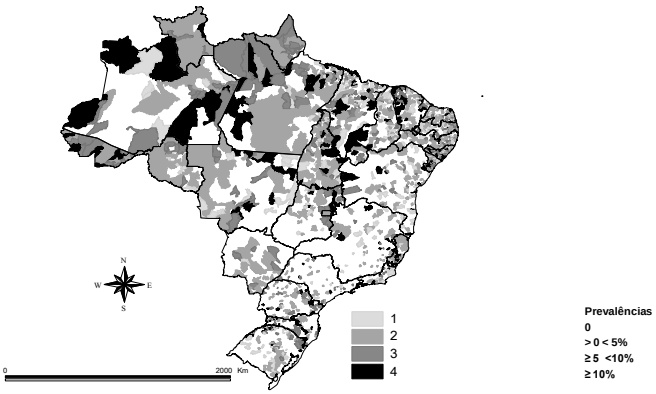
Source: Secretaria de Vigilância em Saúde, Ministério da Saúde, Brasil.

- A total of 166,138 students were examined in 1,514 municipalities, of whom 8,420 were positive for trachoma representing an average prevalence of 5.07%. Nevertheless, Map 11 shows in orange and red color those municipalities where prevalence was over 5% and 10%, respectively; municipalities

located in the border with Guyana, Venezuela, Colombia, Peru, Bolivia, Argentina and Paraguay had very high prevalence indeed.

- Map 12 shows trachoma prevalence distribution in Brazil from 2002-2008. The darkest colored areas correspond to municipalities with prevalence over 5% and 10% where the poorest populations live and development resources and opportunities are less.

Map 12. Distribution of trachoma prevalence, Brazil, 2002 - 2008



Source: SVS/MS CDTV/CGDT/DEVEP

- Table 1 shows the distribution of trachoma prevalence in Brazil by geographic areas. It can be seen how 20.1% of municipalities had no prevalence; 42.3% had a prevalence of up to 5%; 22.1% had over 5% and up to 10%, and 15.5% had prevalence over 10%, which is a matter of concern.

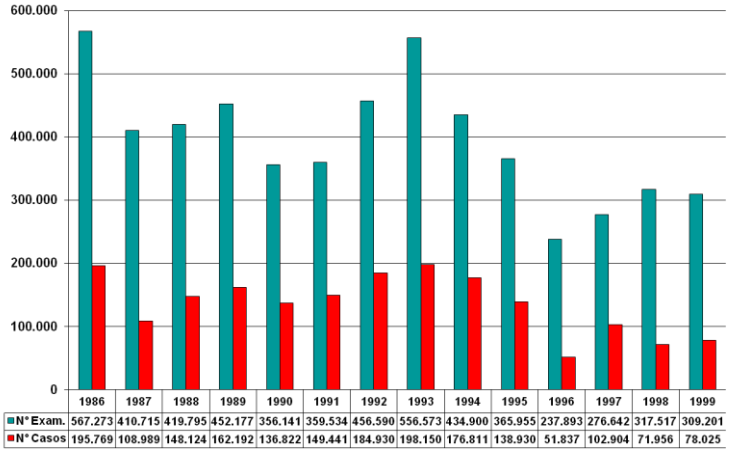
Table 1. Trachoma prevalence by regions and municipalities, Brazil, 2002 - 2008

Trachoma prevalence in municipalities	North	North East	South East	South	Midwest	Total Brazil	%
Zero	35	172	38	39	21	305	20,1
> Zero < 5	128	290	80	79	63	640	42,3
5% - < 10%	69	136	28	72	30	335	22,1
10%	51	102	25	42	14	234	15,5
Total	**283**	**700**	**171**	**232**	**128**	**1514**	**100**

Source: National Survey on Trachoma Prevalence among Students.

- Concerning health care services, the 1998 shift in priorities introduced a decentralized policy which places activity implementation under the responsibility of states and municipalities, while the Ministry of Health guides and gives specific support. Measures were then adopted to enhance joint management by states and municipalities and to strengthen human resource training and technical support for active search and treatment among native communities, including different research processes regarding trachoma prevalence in the country in order to assess the epidemiological situation.
- Graph 1 shows the results regarding the number of people examined from 1986 to 1999 and the number of positive cases by year during that period when activities were carried out by the Ministry of Health. In the following years, trachoma control and surveillance programs were affected by other emerging priorities, and this explains the reduction in active search activities and positive case detection during the following decade (Graph 2).

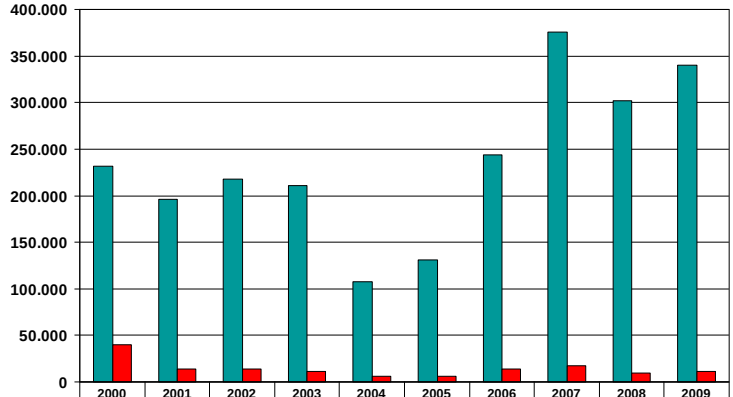
Graph 1. Number of people examined and trachoma positive cases in Brazil, 1986 to 1999



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
N° Exam.	567.273	410.715	419.795	452.177	356.141	359.534	456.590	556.573	434.900	365.955	237.893	276.642	317.517	309.201
N° Casos	195.769	108.989	148.124	162.192	136.822	149.441	184.930	198.150	176.811	138.930	51.837	102.904	71.956	78.025

Source: MS/SVS/DEVEP/CGDT/CDTV

Graph 2. Number of people examined and trachoma positive cases in Brazil, 2000 - 2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
N° Exam.	231.481	196.324	217.736	210.901	107.963	130.822	243.534	376.059	301.637	340.000
N° Casos	39.804	13.767	14.135	11.255	5.715	6.113	13.628	17.353	9.745	11500

Source: MS/SVS/DEVEP/CGDT/CDTV

- When priority was given to the study of trachoma epidemiological situation among native communities, the new information gathered showed higher prevalence levels in these communities, and a new direction was given to the work in subsequent years. Table 2 shows these findings among native communities in the States of Tocantins, Rondônia, Pernambuco and Amazonas. We have the bibliographical records of surveys showing how in 1999, in Amazonas State, bordering Vichada in Colombia, trachoma prevalence among the indigenous communities of São Gabriel da Cachoeira, in Rio Tiquie, and of Dãw was 8% and 6%, respectively.

Table 2. Results from active surveillance among indigenous people, Brazil, 1999 - 2005.

UF	Individuals examined	Trachoma / cases	Prevalence %
TO	3557	991	38.3
RO	427	153	35.8
PE	2303	445	19.3
AM	3923	589	15.1

Source: MS/SVS/DEVEP/CGDT/CDTV

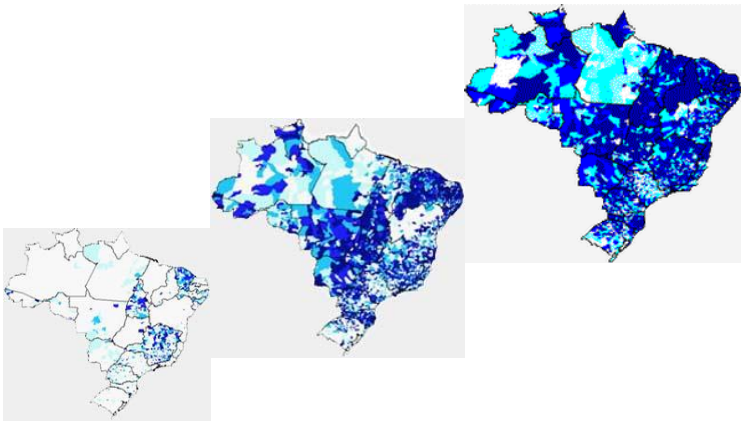
Performance of the National Trachoma Program, 2006 – 2010

- Technical meetings have been held with program directors and advisors; Trachoma Control State Program Managers have been appointed in 25 states; training materials and regulations have been produced; around 2,000 members of the personnel from these 25 states have received training, and azithromycin has been distributed by the Ministry of Health. The national survey on trachoma prevalence was completed and a Work Group was established to prepare the Elimination Plan with the participation of basic care teams and members of the Ministry's national program.
- We can mention achievements such as the inclusion of trachoma as a parameter to allot funds for state surveillance activities under the leadership of the Health Surveillance Program, setting the goal of examining 10% of 1st to 5th grade elementary school students per year in municipalities where active trachoma prevalence is 5% or more. Equally, trachoma has been included as a priority for sanitation budget allotment through the National Health Foundation, a body under the Ministry of Health in charge of environmental issues (Funasa/MS). Finally, trachoma has been included in the national information system (SinanNet).

Achievements and perspectives of the Plan to Eliminate Trachoma as a Cause of Blindness in Brazil

- The first step was to set up an Advisory Technical Group for Member States aimed at defining strategies for the development of national elimination plans.
- Trichiasis detection in old population pockets was included, especially in the States of Ceara, Pernambuco and Bahia.
- The location of areas at risk for active trachoma and trachomatous inflammation - follicular above 5%.
- State and municipal elimination plans are being laid, some of which are well advanced, but others are behind schedule.
- Ensure referral of cases for eye surgery. There are no difficulties regarding the personnel in charge of surgeries, but there are setbacks as regards the location and transfer of patients given the access barriers existing.
- Another approach is to integrate primary care and family health strategies in order to increase coverage and integrated care. Map 13 shows the development of the Family Health strategy; the gradual inclusion of the trachoma program in family health and primary care strategies will enable a better coverage towards the accomplishment of set goals.
- Integration with education, sanitation and policy planning sectors will facilitate addressing social issues related to health.
- The decision of structuring trachoma epidemiological surveillance in the context of primary care has been made.
- The participation of primary care managers and teams is essential for the implementation of the plan to eliminate trachoma as a cause of blindness.
- The training of health professionals and the political priority can be achieved through agreements and consultation processes among the Ministry, the states and the municipalities.

Map 13. Coverage of the Family Health strategy, Brazil, 1998, 2002 and 2006



Source: MS/SVS/DEVEP/CGDT/CDTV

- Managers, organizations, workers and general opinion's awareness must be pursued. The national health council has expressed political will to strengthen the trachoma national program by August 2011.
- The Ministry of Health must prioritize the establishment of a coordinating committee for neglected diseases.
- Inter-sector integration must be sought, especially with sanitation and education sectors.
- A more articulated and coordinated relation with non governmental organizations should be encouraged.
- Another approach would be to integrate the various programs that are separately working with visual problems leading to blindness in a single program for the elimination of blindness including cataract, among others.

Challenges of the Trachoma Elimination Program

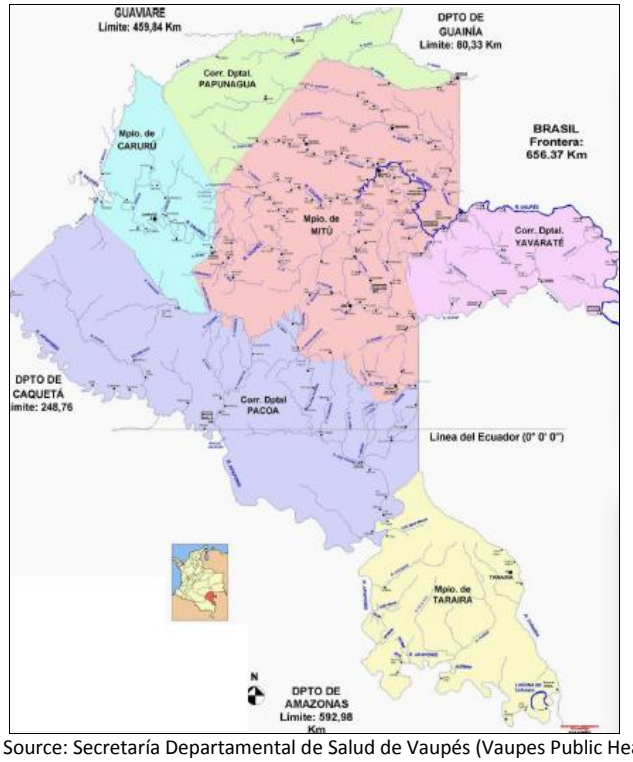
- There is need to continue trainings on diagnosis.
- There are logistical difficulties to assess the epidemiological situation in areas at risk, especially regarding personnel transportation.
- Search for cases in distant rural and indigenous communities.
- Logistics problems for the location and support required by surgery teams in rural and indigenous communities and for organizing referral networks. Logistics support systems are deficient.
- Difficulties to carry out situation analysis, diagnosis and massive treatment in at-risk areas.
- Political and institutional priority should be given to trachoma elimination in the management of the Brazilian Unified Health System (SUS).
- The country's epidemiological and social diversity is still a challenge for all health programs.
- Brazil is a country of continental magnitude.
- Trachoma is widely spread around the country.
- Difficulties in getting to the most vulnerable groups of population.
- Health teams lack training on diagnostic techniques.
- Problems in the implementation of health discussion networks. The SUS is just starting exchange regarding the development of health care models.

Presentation by **Dr. Hollman Miller Hurtado**, Coordinator of the Program for Vector-borne Diseases, Public Health Bureau, Department of Vaupes.

General context

- The Department of Vaupes is located in South East Colombia. It is mainly formed by jungles. From an administrative point of view it belongs to the Orinoco region, but from a biogeographical standpoint it is part of the Amazon region. It borders with Brazil on the East, with the Department of Amazonas on the South, with Caqueta on the West and with Guaviare and Guainia on the North.

Map 14. Political-administrative division of the Department of Vaupes, Colombia.



Source: Secretaría Departamental de Salud de Vaupés (Vaupes Public Health Bureau).

- Its area is 54,000 sq Km and it has around 33,000 inhabitants. The most densely populated town is Mitu, whose characteristics are basically rural. The main access to the area is by air, as there are no roads between the town and the country's capital city. The airport has a runway of about 2,500 m.
- The population estimated by the census does not correspond with the real figures, which hinders reaching vaccination coverage indicators, for example, because the denominator is higher than the actual one.
- There are 23 ethnic groups speaking an equal number of completely different dialects and with different cultural features and habits; the main groups are the Maku, formed by four sub-groups which share the territory with Brazil: the Junta, the Yugu, the Kacua and the Nukak. This last one is settled in a very small area.
- Subsistence economy prevails, and there is no trade in the strict sense of the term. Economic resources available in the department are mainly managed by government institutions and delivered to the population through projects or contracts.
- Accessibility problems are not only geographical but cultural. Rivers are not easily navigable: the main river, the Vaupes, is navigable only up to the border with Brazil. In the dry season, around 35 waterfalls must be crossed and this makes navigation impractical. There are 14 secondary rivers,

many of which are not connected to the Vaupes river, where very dispersed indigenous communities are settled resulting in about 0.2 inhabitants per Km^2. None of the communities has more than 120 people and, as they are so dispersed, the operative costs of any State service-delivery program are huge.

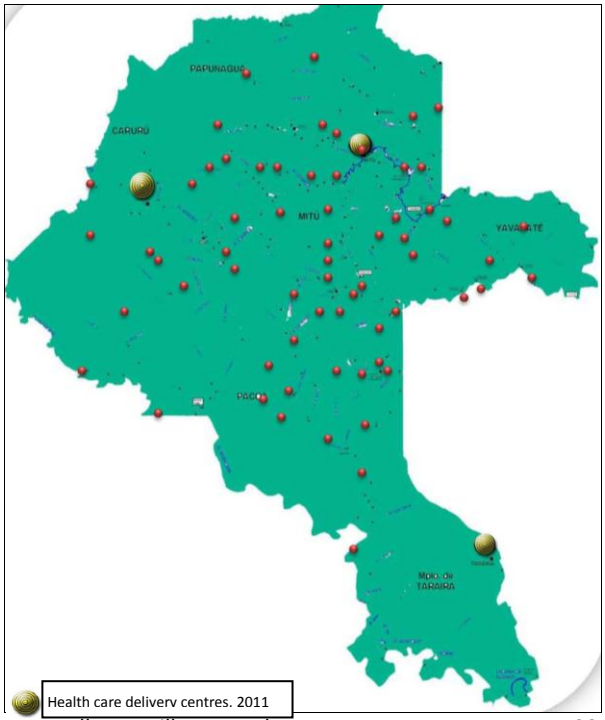
- The population is economically deprived; inequality and neglect are widespread, conditioning a situation which goes beyond the fact that they are indigenous communities, as this same type of communities live in better conditions in Brazil due to the subsidies they receive.
- There is high incidence of parasitic diseases as a result of communities' contact with nature without the proper education and protection.
- The health system in the department has collapsed. Besides the usual epidemiological triad of susceptible host, at-risk environment and causative agents, the social inequality and neglect, and the lack of political will and adequate guidelines add to the problem, placing the region in a more vulnerable situation.

Figure 2. Typical house of Vaupes indigenous communities.

Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

- Map 15 shows the health care delivery network in 2003. Each of this health care centers had an area assigned and through them rural communities were offered public health programs; today, however, only three of these health care centers remain due to the changes introduced in our General Social Security and Health System. This explains why in remote communities we find pathologies and skin lesions which have followed the natural course of the disease with no intervention whatsoever (Figure 3).

Map 15. Health service-delivery network in Vaupes, 2003 and 2011.



Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

Figure 3. Lesions found among the rural population in Vaupes, Colombia, 2011

Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011

Trachoma epidemiological situation

- In 2003 and 2006, we visited the Maku communities in San Joaquin and Santa Catalina, located 5 km from the Brazilian border, and from 2007 to 2009, we visited those located in San Gerardo, San Gabriel and Nuevo Pueblo, 35 km away from the first. In 2006, we examined 114 people in San Joaquin and Santa Catalina and diagnosed clinical trachoma in 21 of them (18.4%), out of whom 15 (13.2%) were under 15 years of age. We detected all the stages of the disease: three women presented with corneal opacity and significant reduction of visual acuity, and in the latter three

communities, three other women presented with advanced trachoma, corneal opacity and blindness.

- Our interest in the disease started in 1998 when during a visit to one of these communities we found that people had been dying due to snakebites. Two women had died after being bitten by snakes they had not seen because they had corneal opacity. We then started to study the vector situation and we found a report prepared by the Brazilian sanitation authorities which placed us on the track, as the epidemiological link was evident.
- From 2006 to 2009 we implemented some prevention measures taking advantage of the activities of the program of vector-borne diseases. However, such activities have not been systematic and they have not been measured, they have rather been focused on vector control through the use of chemicals to reduce the density of trachoma-transmitting flies.
- In 2010 we officially notified the presence of trachoma cases and by the end of that same year, alternatives to start managing the problem were discussed with the support of the Pan American Health Organization. The following priority actions were defined:
    - *Chlamydia* lab confirmation*;*
    - active search of new trichiasis, entropion and corneal opacity cases to prevent blindness caused by trachoma;
    - implementation of a prevalence survey;
    - design of a trachoma elimination plan, and
    - plan implementation, follow up and evaluation.
- From December 2010 to the present moment, we collected the smear samples of palpebral conjunctiva and send the spread plates to the microbiology laboratory of the Colombian National Institute of Health for bacterial identification. The samples were collected in patients with trachomatous inflammation – follicular and some others with trachomatous inflammation - intense. In San Joaquín we collected 12 samples in dry tube and prepared 12 spread plates. In Santa Catalina this could not be done, but we managed to collect 14 samples in dry tube. In San Gabriel and Wacará we also collected simples and prepared spread plates (Table 3).

Table 3. Collection techniques for trachoma case lab confirmation in communities, Vaupes, Colombia, 2010-2011.

COMMUNITY	DRY TUBE	SPREAD PLATES
San Joaquín	12	12
Santa Catalina	14	0
San Gabriel	3	3
Wacará	9	9
Total	**38**	**24**

Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

- The costs of transportation, sample collection, detection of trichiasis cases and surgery candidates summed up to 26 million pesos. Three health officials traveled to the communities and were able to detect a new community, the Wacara, which had not been identified before. They belong to the Maku Kacua group and they were included because of the epidemiological link. They are the focus nearest to Mitu while the farthest is around 90 Km. from this town and can be reached only by plane first, then by river and finally by walking. The total population of these four communities is around 300 people.

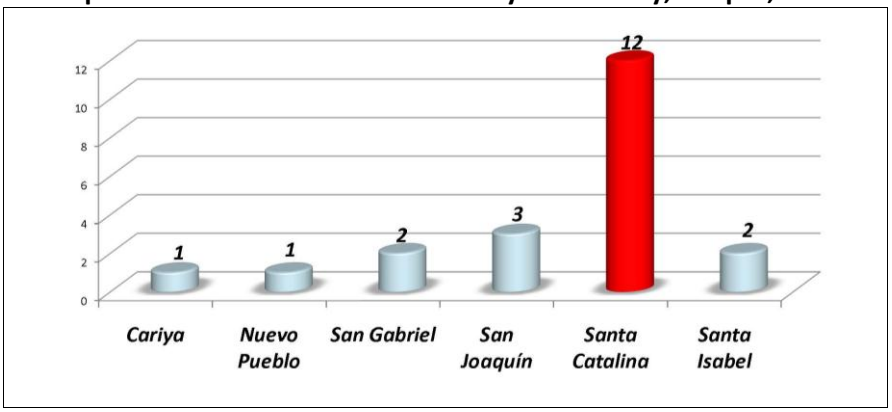
Table 4. Travel costs for visits to trachoma foci identified in Vaupes, Colombia, 2011 (cost in Colombian pesos).

Community	Air transportation	River transportation	Personnel	Total
San Joaquin	1`600,000 x4	200,000	1`600,000	8`200,000
Santa Catalina	1`800,000 x4	100,000	1`800,000	9`100,000
San Gabriel	1`900,000 x3	--------	1`400,000	7`100,000
Wacara	--------	300,000	1`600,000	1`900,000
Total	26`300,000			

Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

- We found 21 potential surgery patients in these four communities, but 57% of cases were in Santa Catalina. The two persons from Santa Isabel were detected in Mitu, as it has not been possible to have access to this community yet.

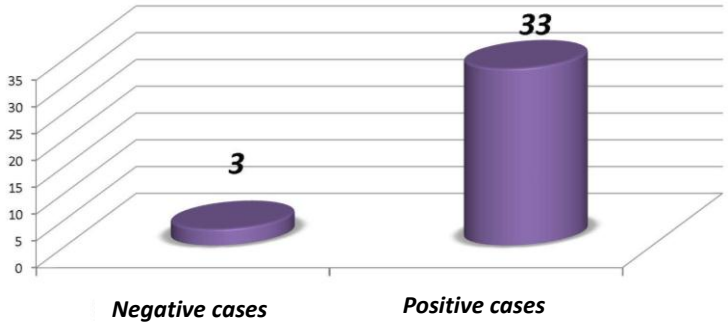
Graph 3. Trachoma case distribution by community, Vaupes, 2011.



Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

- We examined 131 persons in total of whom 45.8% (60) corresponded to children less than 14 years of age; 36 of them (27.5% of the total) were 1 to 9 year-old children. We found that 91.7% of the 1 to 9 year-old children presented with at least one clinical form of trachoma; 36.1% (13) presented with trachomatous inflammation - follicular (TF) and 50.2% (18) with trachomatous inflammation - intense (TI).

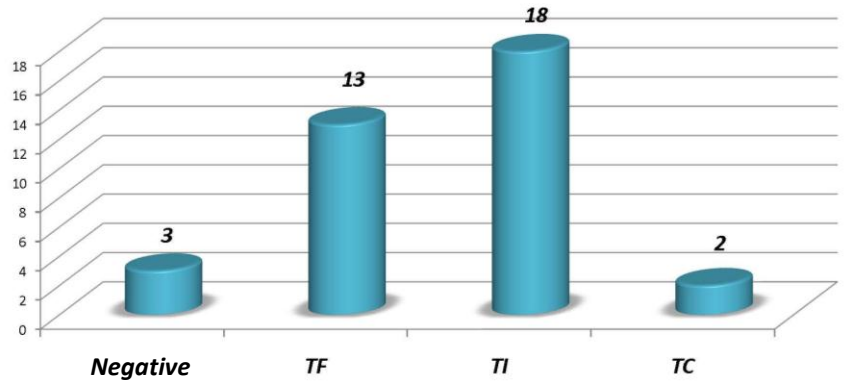
Graph 4. Trachoma case incidence among 1 to 9 year-old children in San Joaquin and Santa Catalina communities, Vaupes, 2011.



Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

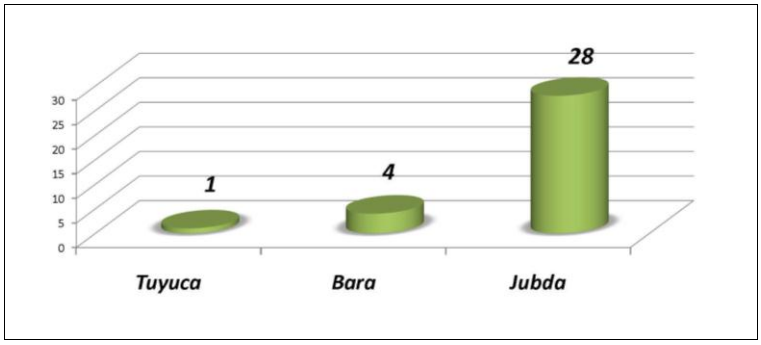
- The highest number of cases was found in the Jubda Maku ethnic group with 84.4% of them.

Graph 5. Trachoma clinical forms among 1 to 9 year-old children in San Joaquín and Santa Catalina communities, Vaupes, 2011



Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

Graph 6. Trachoma case distribution among 1 to 9 year-old children by ethnic group, Vaupes, 2011.



Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, 2011.

- Based on these findings, on June 10, 2011, surgeries will be performed according to the frequency and percentages presented in Table 5.

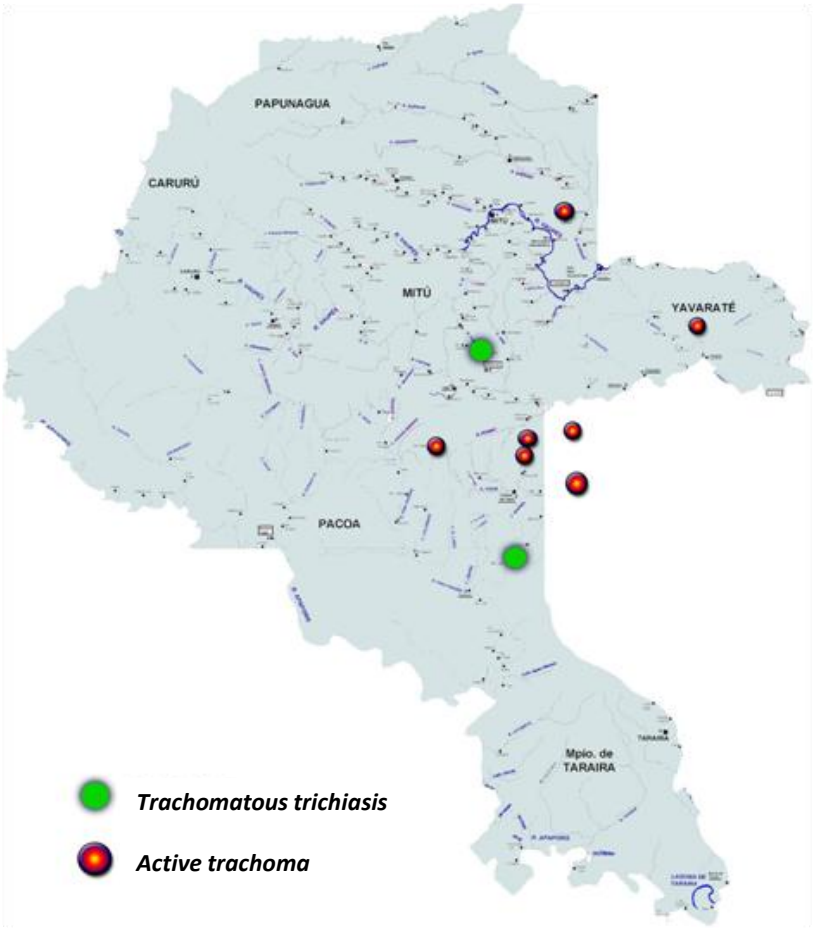
Table 5. Diagnosis and frequency of patients referred for surgery in June, 2011, Vaupes, Colombia.

Diagnosis	Frequency	%
Entropion	10	47.62
Mild entropion	4	19.05
Moderate entropion	2	9.52
Severe entropion	2	9.52
Districhiasis	8	38.10
Mild districhiasis	4	19.05
Moderate districhiasis	0	0.00
Severe districhiasis	1	4.76
Fibrosis	9	42.86
Edema	3	14.29
Corneal opacity (?)	3	14.29

Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes, Fernando Peña, 2011.

- From a geographical point of view, there are two Brazilian sites directly connected with trichiasis cases in Vaupes: Umari, on Tiquie River, and Ñandia, on Papuri River. Trichiasis cases were found in Santo Domingo and Santa Isabel.

Map 16. Trachoma geographical distribution in Vaupes, 2011



Source: Hollman Miller Hurtado, VBD Program, HDB, Vaupes,

Challenges of the Program in Vaupes

- It is essential to implement a bi-national management strategy of the problem. It is urgent to work together with Brazilian health authorities.
- Sub-national definition of regional borders of the outbreak. We have no information on how the disease is spreading, so there is need to search also in the bordering areas of Amazonas, Caqueta, Guainia and Guaviare Departments. In fact, there are signs that both in Guainia and Amazonas there are trachoma cases.
- The main challenge is collecting funds to conduct the prevalence survey using as reference the budget spent in the previous stage. Vaupes Health Bureau does not have the budget to contribute significantly to cover these costs.
- Additionally, teams must be set up for the prevalence survey and to ensure adequate coverage and sustainability for the SAFE strategy components to be implemented, whose methodology is still not clear. Finally, it is necessary to re-establish the health care service delivery network.

Trachoma in Guatemala: situation, progress and challenges

Presentation by **Dr. Oscar Leonel Figueroa Rojas**, National Trachoma Program, Ministry of Public Health and Welfare, Guatemala.

General context

- Guatemala's total population is 14.5 million people; 57% of the population is poor, and 16% live in conditions of extreme poverty. In 12 municipalities, one out of each two people lives in such conditions. In these rural and indigenous municipalities, extreme poverty incidence is very high (according to the 2002 census, 44% of the population is categorized as extremely poor). There are 25 dialects and four different peoples recognized by law: Mayas, Garifunas, Xinkas and Mestizos.

Trachoma epidemiological situation

- The endemic area in Guatemala is located in the southern portion of the Department of Solola, in the foothill area of Nahuala and Santa Catarina Ixtahuacan municipalities, with a population of about 58,000 people (population census - INE 2002).

Map 17. Areas of trachoma presence, Guatemala, 2011

Source: Ministry of Public Health, Guatemala.

- The Project for the Detection of Trachoma in the foothill areas of Guatemala was started in 1992 by the Committee for the Blind and Deaf with the support of PAHO/WHO, CBM and the INTERVIDA Foundation (from July 2005 to June 2006), and has been active for the last 18 years.
- Statistics from 1994 to 2001 show that 8,047 trachoma cases were detected in the Department of Solola, representing 15.94% of the 50,482 people subjected to screening during those eight years (Table 6).

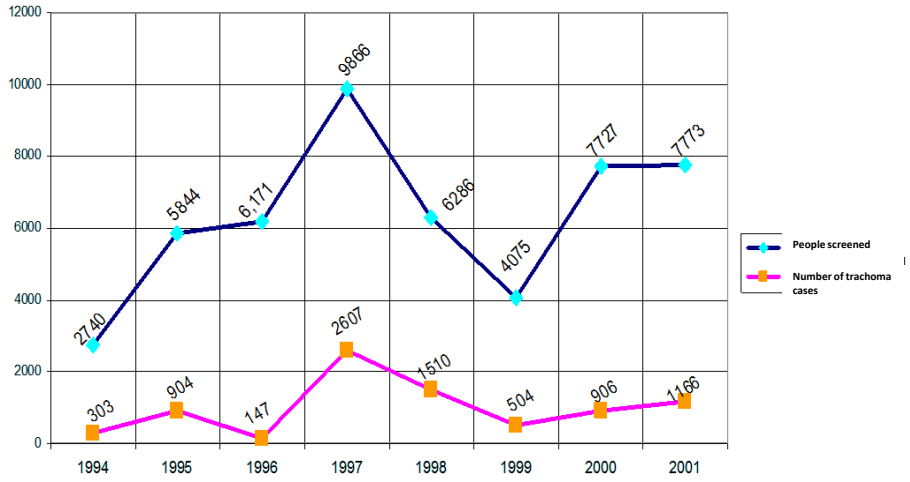
Table 6. Trachoma cases by stage, Solola, Guatemala, Blindness Prevention Program/CPCSG, 1994 – 2001

Year	Total subjected to screening	(TF)	(TI)	(TS)	(TT)	(OC)	Trachoma	Trachoma %
1994	2740						303	11.05
1995	5844						904	15.47
1996	6171						147	2.38
1997	9866	1573	527	473	29	5	2607	26.42
1998	6286						1510	24.02
1999	4075	330	132	35	7	0	504	12.37
2000	7727	564	253	75	14	0	906	11.73
2001	7773	805	171	172	17	1	1166	15.00
Totales	**50,482**	**3,272**	**1,083**	**755**	**67**	**6**	**8,047**	**15.94**

Source: Ministry of Public Health, Guatemala, Trachoma Project.

- The peak occurred in 1997 when typification by stages was implemented. However, during the following years an increasing trend was observed for all the forms of the disease, especially in the last three years (1999 to 2001), explained by the increase in screening which is known to be directly related to the findings (Graph 7).

Graph 7. Trachoma screening and findings in Guatemala, 1994 – 2001



Source: Ministry of Public Health, Guatemala, Project for the Prevention of Blindness

- Exams by sectors in 25,432 people were conducted in the Department of Solola; in this six-year stage of the Program, 4,891 trachoma cases were found in the three sectors, and 61% (2,979) of cases belonged to sector 2 (Table 7).

Table 7. Trachoma screening by sectors in Solola, Guatemala, 2002 - 2007

YEAR	SECTOR 1		SECTOR 2		SECTOR 3	
	People examined	Trachoma	People examined	Trachoma	People examined	Trachoma
2002	0	0	8,032	2,235	0	0
2003	2,417	729	395	101	0	0
2004	4,469	637	175	45	0	0
2005	2,683	123	0	0	0	0
2006	0	0	0	0	4,908	398
2007	0	0	2,061	598	292	25
Total	**9,569**	**1,489**	**10,663**	**2,979**	**5,200**	**423**
Total of people examined 25.432			**Total with trachoma 4.891**			

Source: Ministry of Public Health, Guatemala, Project for the Prevention of Blindness

- We also have results according to age groups for the screening conducted in the foothill areas in the Department of Solola during 2002 – 2006; findings show that the highest frequency occurred among 2 to 7 year-old children followed by the 8 to 15 year-old group (Table 8).

Table 8. Trachoma cases detected through screening by age groups in Solola, Boca-Costa, Guatemala, 2002 – 2006

Year	0 a 1	>1 a 7	>7 a 15	>15 a 40	> 40	Total
2002	92	798	320	406	328	1,944
2003	27	388	232	185	73	905
2004	26	274	192	80	148	720
2005	26	705	488	92	100	1411
2006	8	385	252	40	56	741
Total	**179**	**2,550**	**1,484**	**803**	**705**	**5,721**

Source: Committee for the Blind and Deaf, Guatemala

Achievements of the Trachoma Program

- There is a National Plan for the Prevention of Blindness which counts with the support of the Guatemala National Commission for Eye Health (Vision Committee 2020 Guatemala), adopted in April 2010 and presently under way.
- As part of the legal framework of public health, we have the Ministerial Agreement for the creation of the "National Commission for Eye Health" approved in May 2011.
- Actions have been defined for the development of the Strategic Plan for the Reduction of Blindness.
- We participated in the Second Central American Committee 2020.
- The Guide for Eye Health National Service Delivery has been laid.
- Through a partnership with ORBIS, high-level training activities for medical residents and ophthalmologists were coordinated.
- Coordination with CBM has been undertaken for training activities.

- An EFA-VI project was designed aimed at supporting eye and ear health in Guatemala; at present it is pending approval.
- The Project on National Trachoma Prevalence in Guatemala has been designed; the field work has been completed and a lab report has already been issued.
- The National Plan for the Prevention of Blindness in Guatemala, whose general aim is to contribute to the prevention of preventable blindness and visual impairment, has the following specific objectives:
  1. Reduce blindness caused by cataract
  2. Reduce the prevalence of blindness caused by diabetic retinopathy
  3. Reduce the incidence of blindness caused by open angle glaucoma
  4. Reduce blindness in children due to retinopathy of prematurity
  5. Reduce visual impairment through the detection and treatment of refractive defects not corrected in students
  6. Integrated eye health care and services for blind and low vision people
  7. Elimination of blindness due to corneal opacity and eye perforation
  8. Elimination of blindness caused by trachoma as a public health problem, i.e., elimination of new cases of blinding trachoma, reduction of trachomatous trichiasis (TT) to less than a case per 1,000 people and reduction of trachomatous inflammation – follicular and trachomatous inflammation - intense (TF and TI) to < 5% in 1 to 9 year-old children.
- Finally, a survey was designed for three municipalities in Solola and one municipality in Suchitepequez to determine trachoma prevalence in Guatemala, 2011.

Challenges

- Continuity and sustainability of the National Program for Eye Health
- Establishment of the legal framework for integrated eye health care including integrated care, prevention activities, management and early detection.
- Education to individuals, families and the community
- Trachoma eradication in Guatemala
- School-based health care (approval and implementation of the EFA-VI project)

Trachoma in Mexico: situation, progress and challenges

Presentation by **Dr. Alejandra Martinez Meneses**, Deputy Director of Disease Control, Tuxtla, Gutiérrez, Mexico

General context

- Mexico has 32 states and 2,441 municipalities with a total population of 192 million people. Chiapas State has 4,572,000 inhabitants in 118 municipalities. The State is located in Southern Mexico, in the border with Guatemala.

Map 18. Political-administrative division of Mexico.

Source: Government of Mexico

Trachoma Epidemiological Situation

Trachoma in Mexico is classified within a group of diseases known as “lagging diseases”. Five municipalities in Chiapas are endemic for trachoma; the eight neighboring municipalities are those where trachoma was present in the past and where epidemiological surveillance goes on to verify the elimination of the disease.

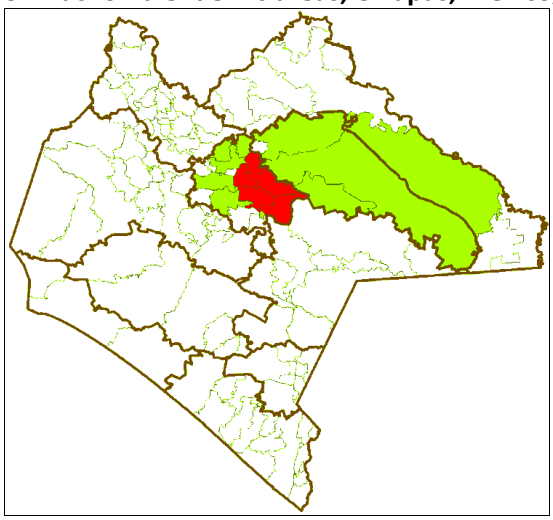
Box 1. Background of trachoma in Mexico

Year	Background
1872	First mention of trachoma presence in Mexico (Dr. Falk)
1887	The presence of trachomatous follicular conjunctivitis in all the country is acknowledged
1907	Dr. Francisco Valenzuela (Professor of Hygiene, School of Medicine of Mexico) was sent to Egypt by Dr. E. Liceaga (Director of the Public Health Department) to study trachoma
1906 to 1927	Prohibition to enter the country for trachoma patients is published in the Federation’s Gazette and in the Sanitary Regulations.
1962	Identification of patients with blindness due to corneal opacity in Oxchuc municipality, Chiapas, by Dr. Romero
1965	The agent is isolated in Mexico by Dr. Toroella and his team
80´s	The World Health Organization (WHO) declares as trachoma endemic areas the Indigenous municipalities of Tzeltales and Tzotziles de Oxchuc, San Juan Cancuc, Huixtán, Tenejapa and Chanal.
2002 - 2011	Initiative for the "Improvement of Environmental and Health Conditions of Indigenous Communities" launched by the Pan American Health Organization (PAHO) in Chiapas.
	The Trachoma Control and Prevention Program is established in Chiapas based on the SAFE strategy recommended by the Pan American Health Organization (PAHO).

Source: Chiapas Health Bureau, Mexico.

- In 1872 trachoma presence was first mentioned by Dr. Falk. Later, there are a series of reports documenting the presence of trachomatous follicular conjunctivitis, and some time after, the first in depth trachoma studies were conducted. In 1962, blindness caused by corneal opacity was identified in Oxchuc and since then activities in endemic areas have been continuously undertaken (Box 1). In 2001, a program to improve environmental health conditions among indigenous communities in Chiapas supported by the Pan American Health Organization and the Trachoma Control and Prevention Program is established adopting the SAFE strategy; this program has been under active for the last ten years.
- Trachoma Control and Prevention Program has set the following objectives for 2011-2012:
  - General objective: Elimination of trachoma (problems related to blinding trachoma) as a public health problem in Chiapas by 2012.
  - Specific objectives:
    - To strengthen epidemiological surveillance both in endemic and non-endemic municipalities (the so called neighboring municipalities).
    - To deliver timely, integrated and quality medical care.
    - To increase health promotion activities related to trachoma and basic sanitation in houses. These two lines of work are the main focus of the program for the two-year period.
    - To back initiatives for the improvement of accessibility to water.
- The endemic municipalities in Chiapas are Chanal, Huixtan, Oxchuc, Tenejapa and San Juan Cancuc; the neighboring municipalities are Ocosingo, San Cristobal, Chamula, Chalchihuitan, Chenalho, Pantelho, Altamirano and Chilon. Chiapas has 10 sanitary jurisdictions through which public health actions are channeled. Trachoma endemic foci belong to the sanitary jurisdiction number 2, i.e., the San Cristobal de las Casas jurisdiction.
- The annual performance figures of the Program are available, especially those for the last three years (2008 a 2010), which enables us to assert that there are no blinding trachoma problems. The last three cases of blindness were reported in 2007. Since 2008 there have been no reports of blinding trachoma cases. In that same year, 139 cases in the five endemic municipalities were reported, the majority from Oxchuc community.

Map 19. Trachoma endemic areas, Chiapas, Mexico, 2011



Source: Health Bureau, Chiapas State.

Table 9. New trachoma cases by municipality and clinical phase, Chiapas, 2008

MUNICIPALITY	TF	TI	TS	TT	CO	TOTAL
	cases	cases	cases	cases	cases	cases
Chanal	8	0	0	1	0	9
Huixtán	12	0	1	0	0	13
Oxchuc	34	0	17	5	0	56
Tenejapa	29	0	6	2	0	37
San Juan Cancuc	18	0	6	0	0	24
TOTAL	101	0	30	8	0	139

Source: Trachoma Control and Prevention Program. ISECH

- Follow up figures for 2009 show no progress because we were less attentive and data was received only from Oxchuc, Tenejapa and San Juan Cancuc with a total of 31 new cases.

Table 10. New trachoma cases by municipality and clinical phase, Chiapas, 2009

MUNICIPALITY	TF	TI	TS	TT	CO	TOTAL
	cases	cases	cases	cases	cases	cases
Chanal	0	0	0	0	0	0
Huixtan	0	0	0	0	0	0
Oxchuc	12	0	0	0	0	12
Tenejapa	10	0	0	0	0	10
San Juan Cancuc	9	0	0	0	0	9
TOTAL	**31**	**0**	**0**	**0**	**0**	**31**

Source: Trachoma Control and Prevention Program. ISECH

- Epidemiological surveillance was enhanced in 2010 with house to house visits in the five municipalities; there was an increase of active cases, but no complications of corneal opacity or surgery requirements; 59 cases corresponded to children under 9 years of age, of whom 32 lived in Tenejapa municipality which is today the main focus.

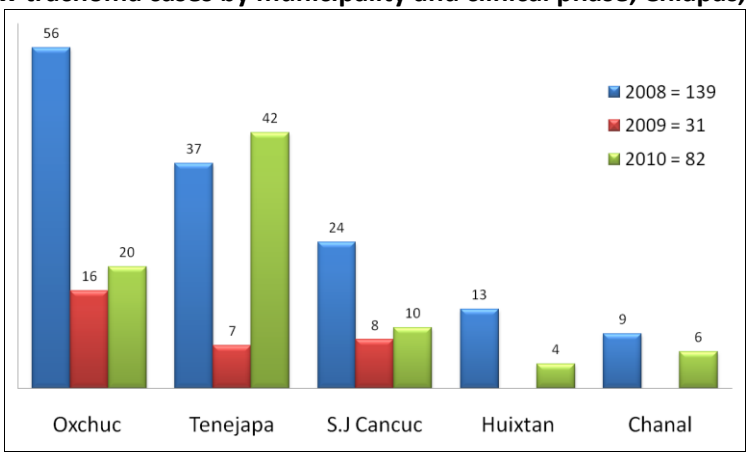
Table 11. New trachoma cases by municipality and clinical phase, Chiapas, 2010

Municipality	TF	TI	TS	TT	CO	Total
Tenejapa	41	0	1	0	0	42
Oxchuc	16	0	4	0	0	20
San Juan Cancuc	10	0	0	0	0	10
Huixtán	4	0	0	0	0	4
Chanal	5	0	1	0	0	6
Total	76	0	6	0	0	82

Source: Trachoma Control and Prevention Program. ISECH

- Graph 8 shows the behavior of new cases by municipality during the last three years; it is evident that difficulties persist in Oxchuc and Tenejapa municipalities, the latter being where the majority of cases have occurred.

Graph 8. New trachoma cases by municipality and clinical phase, Chiapas, 2008 – 2010



Source: Regional SUIVE, 2008 - 2010

- Concerning prevalence in these five municipalities, from 2002 to 2010, a total of 1,073 cases occurred, and 136 of them were trachomatous trichiasis requiring surgery. Surgeries are being carried out, but some patients need more than one or two interventions because their cases require reconstructive procedures. Additionally, there are 56 reluctant patients who refuse any type of surgery.

Table 12. Trachoma prevalence by municipality and clinical phase, Chiapas, 2002 – 2010

Municipality	TF	TI	TS	TT	CO	Total
Chanal	14	0	21	10	0	45
Huixtán	18	0	26	9	0	53
Oxchuc	77	0	435	90	2	604
Tenejapa	60	0	72	12	0	144
San Juan Cancuc	42	0	170	15	0	227
TOTAL	211	0	724	136	2	1,073

Source: Trachoma Control and Prevention Program. ISECH

- Active search activities were undertaken in 2010 along three lines: Identification of determining factors such as type of soil and access to drinking water in houses; ophthalmological exams to help in active case search, and prophylactic treatment for cases and contacts. House to house inspections were conducted not only to detect cases, but also to identify environmental improvement actions. A total of 91,628 people were checked in 20,138 dwellings in the five municipalities. The work was completed in 248 places and it is pending in 45. We detected 82 new cases in 2010 and delivered 421 treatments both to cases and contacts. The majority of the activities were carried out in Tenejapa municipality where the biggest trachoma focus persists (Table 13).

Table 13. Epidemiological surveillance and medical care activities, Chiapas, 2010

Activity	Municipality					Total
	Huixtán	Tenejapa	San Juan Cancuc	Chanal	Oxchuc	
Population examined	7,969	25,732	18,810	8,798	30,319	91,628
Households visited	2,073	5,146	4,085	1,996	6,838	20,138
Places visited	47	54	26	17	104	248
Places pending visit	7	0	12	0	26	45
Cases detected	4	42	10	5	20	82
Treatments delivered	15	210	35	42	119	421

Source: Trachoma Control and Prevention Program. ISECH

- Surgical procedures during 2010 were performed on 60 TT patients from a total of 136 notified TT cases, as 56 patients were reluctant to submit to the procedure. There is an annual Regional Week against Trachoma in Chiapas which has already reached its seventh successful version. On the last of these occasions, a surgery campaign was conducted in the health center of the main town in Oxchuc during which 19 patients were operated or re-operated on.
- Health promotion activities were also undertaken during 2010, specifically in schools where teachers, students and administrative staff received training in so-called *clean face* and detection workshops. A total of 134 schools were included, 22,033 students were examined and 848 teachers received training and will later become multipliers.

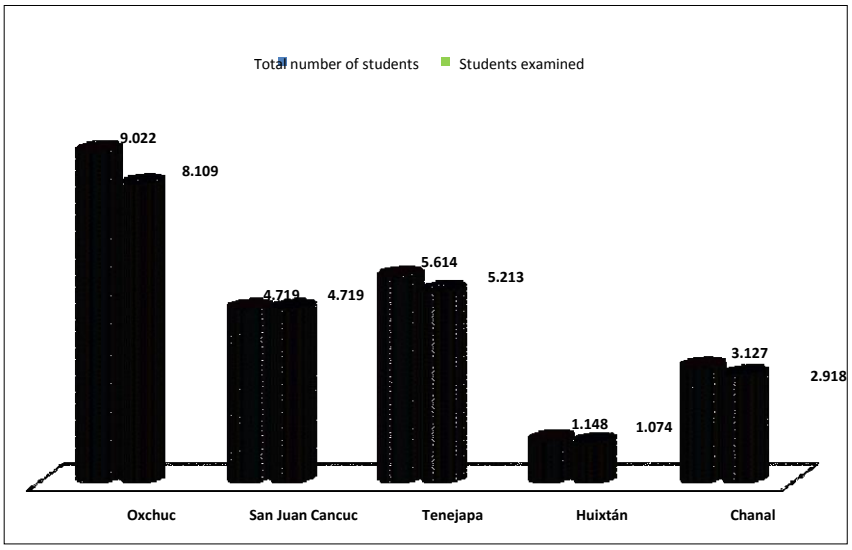
Table 14. Trachoma health promotion activities in Chiapas' schools, 2010.

Activity	Municipality					
	Huixtan	Tenejapa	San Juan Cancuc	Chanal	Oxchuc	Total
Promotion	6	34	21	12	61	134
Students examined	1, 074	5, 213	4, 719	2,918	8,109	22,033
Teachers trained	53	239	157	91	308	848

Source: Trachoma Control and Prevention Program. ISECH

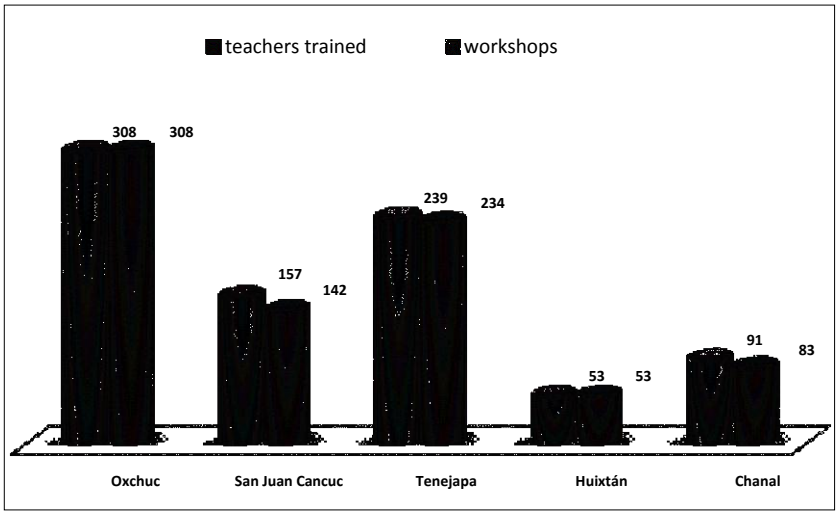
- The coverage of ophthalmological exams was over 90% of students in each school and place; absent students were the only ones who missed the exams. Here again, the majority of the schools included in the activity were in Oxchuc and Tenejapa. All teachers were examined (100%) and trained on the follow up and referral of new cases.
- Regarding inter-sector activities, PAHO has been helping during the last two years in the implementation of the *Clean face* strategy in Oxchuc's schools together with experts on lifestyle changes. Joint activities with CONAGUA have been conducted to provide drinking water to households and schools. Health promotion activities are jointly implemented with the CDI using regional radio stations. Together with SEDESOL we conducted a survey to detect the need of firm floors and ecological kitchens and latrines in dwellings, and with SECAM we are trying to implement the building of barnyards. All these activities are developed in the framework of the prevention and empowerment work of each of these institutions and as part of their contribution to the trachoma program and the prevention of blindness caused by the disease.

Graph 9. Ophthalmological exam in schools of the endemic area, Chiapas, 2010



Source: Trachoma Control and Prevention Program. ISECH

Graph 10. School teachers trained in trachoma workshops, Chiapas, 2010



Source: Trachoma Control and Prevention Program. ISECH

- The Regional Week against Trachoma is carried out during the last week of October with the participation of all relevant sectors and municipalities. Prevention, active case search, health promotion and training activities, as well as workshops in schools (*Clean faces*), are conducted under the leadership of local authorities.
- In the so-called neighboring municipalities, specific activities were also carried out during 2010. With the assistance of the National Center for Blood Transfusions, a lab technique was tested based on the use of eye smear samples to detect the trachoma-causing bacteria. The team took 1,248 samples in Ocosingo, San Cristobal, Chenalo, Chamula, Pantelho, Altamirano and Chalchihuitan municipalities in 19 localities. Forty three positive cases were reported in eight localities, the majority of them in Tenango and Altamirano. A second stage of this activity will focus on the assessment of active search; house to house visits have already been planned, as the first stage activities were based on random sampling in the 19 localities.
- At present, a pilot project on the so-called “lagging diseases” in Chiapas is underway with the support of IDB and PAHO, and Mexico’s own resources (58%). The name of the project is Towards

Trachoma Elimination, Chagas Disease, Leishmaniasis and Soil-transmitted Helminthiasis Control and the Strengthening of Rabies and Onchocerciasis Elimination. The general objective of the Project is to contribute to improve life and health conditions of populations affected by neglected diseases in Chiapas through the implementation of an integrated, feasible and sustainable control and elimination model.

The project components as regards trachoma are the following:

- Strengthening of the epidemiological and entomological surveillance systems.
- Delivery of prevention strategies and treatment to combat neglected tropical diseases (NTDs).
- Training.
- Social mobilization and community participation.
- Focus on inter and intra-institutional / government approach.
- Auditing, supervision, monitoring and evaluation.

The specific objectives include:

- Contributing to the process of elimination of trachoma transmission by reducing clinical case prevalence and incidence.
- Reducing the risk of Chagas' disease transmission by decreasing triatomine populations and looking for alternatives to prevent transmission via transfusions.
- Establishing the real magnitude of leishmaniasis in its four clinical forms and improving the knowledge about the vector's biological features, and identifying groups at risk and risk factors.
- Contributing to the process of interruption of onchocerciasis transmission.
- Interrupting rabies transmission chain from dogs and cats to humans.
- Helping to the reduction of soil-transmitted helminthiasis prevalence and intensity.
- Improving sanitation conditions and habits in households.

As part of the activities for strengthening the epidemiological and entomological surveillance systems, the project plans to:

1. Establish the magnitude of trachoma active transmission
2. Evaluate intervention impact in the five endemic municipalities
3. Establish whether there is active transmission in the other eight municipalities at risk
4. Learn about the presence, distribution and density of Chagas and leishmaniasis vectors by strengthening epidemiological and entomological surveillance systems.

(For further information on this Project -other activities and costs-, a presentation by Dr. Alejandra Martinez was included in the USB flash drive distributed during the First Regional Meeting of Trachoma Elimination Program Managers, file: *6_Panorama Mexico.pptx*)

Session for questions and comments

Comments by Dr. Fabio Edmundo Enriquez Miranda, General Manager of Mallamás EPS (Health Care Insurance Institution), Colombia.

- Dr. Enriquez referred to the present situation of the General Social Security and Health System in Colombia which is presently undergoing a process of change and facing several difficulties, especially regarding funds availability, that require further discussion.
- He mentioned the coverage reached by Mallamás in 12 Colombian departments, noting that in Vaupes, however, it is active only in Mitu.
- He congratulated Vaupes Public Health Bureau on the findings of Dr. Hollman's research study comparing it to the research on cancer undertaken by Mallamás EPS in a community in Cumbal where, based on cytologies, it was possible to establish the real situation of cancer there.
- Of a total 23,144 population in the department, 7,000 are affiliated to Mallamás, all of them in the municipality's urban area; however, the trachoma cases detected in remote rural areas where Mallamás operates are probably the result of people's moving from one place to other.
- He emphasized that the real problem is sanitation, infrastructure, difficulties in transport from and to indigenous communities, and abuses committed by some health care service delivery institutions, as they have found cost overruns resulting in conflicts with health care insurance institutions in that part of the country.

Question 1: Why is it that trachoma in Mexico is circumscribed to a small area in Chiapas and there are no cases reported from others parts of the country?
Answer 1:

- In 2010 we were able to show how strong this communicable disease was in Chiapas, and as a result, active search was resumed in the neighboring municipalities where we have already detected cases. This information was sent to the federal level, where the 100 x 100 program has been launched focused on the 100 poorest municipalities of the country with the lowest HDI. Out of these 100 municipalities, 28 belong to Chiapas; among these we find the five trachoma endemic municipalities. The Federal State has realized the problem and it is determined to continue active search around the country. The first step has been to give visibility to the trachoma problem and its effect on communities, followed by surveillance and active search of trachoma cases all over the country.

Question 2: Which diseases are included in neglected diseases programs in our countries? What is the percentage of fund contribution from the national level? What area within health care systems should drive the program?
Answer 2:

- There is no program for neglected diseases in Colombia. The National Institute of Health has started to take up work in this field, and together with the Ministry of Social Protection (MSP) and the support of PAHO, is working on the design of a national project. This means such diseases should be registered as a new event in the System of Public Health Surveillance; then a joint team with the MSP must be set up to start active case search and to prioritize vulnerable populations.

- In Brazil, the coordination of the program on neglected diseases started only five months ago. The inclusion criteria for diseases to be in this group include the absence of specific programs and funds, and of an adequate prevention and health care infrastructure for the disease. Diseases included so far are tuberculosis, dengue, leprosy, onchocerciasis, trachoma, schistosomiasis and helminthiasis. However, states have the freedom to include others; for example, the rabies has been included in the State of Pernambuco. Additionally, there is lab confirmation for *Chlamydia* transmission in a geographic area, but not for diagnosis confirmation.

Question 3: Are they already thinking on the *Dossier* to request elimination certification in Chiapas? Have they received WHO or PAHO assistance for this process?

Answer 3:
Yes, we are working with PAHO through their field office in Chiapas to gather the documents required to certify compliance with all indicators.

Question 4: Why did Brazil select school-aged children as target population in the prevalence study? What is the school enrolment rate in priority areas?

Answer 4:
There are two reasons: accessibility and costs. House to house surveys are more complex from a logistics and financial standpoint. Additionally, coverage is higher with school-aged students, not so with pre-school-aged children. School enrolment is almost 98%, which makes the sample adequate; we work with ≥7 year-old students from the 5th grade on.

Question 5:
What are the most important items included in the Project presently being implemented in Chiapas?

Answer 5:
A very important item is the medication for treatments which is received from donations. The highest cost, however, is field personnel contracting and the fuel for transportation because communities are located in remote areas.

Remember that the indicator used in measuring elimination is TT, not TF, and that the denominator is not the population served, but the total population. For TF, the indicator is to reduce prevalence to less than 5% in 1 to 9 year-old children.

Session 2. General framework of the SAFE strategy and implementation of prevalence surveys as input for decision making

SAFE strategy rationale

Presentation by **Dr. Norma Helen Medina**, Division Technical Director, Sanitary Ophthalmology Center, CVE/SES – SP, São Paulo, SP Brazil

- First, it is essential to clearly understand trachoma grading. In 1987, WHO changed the McCallan's classification, which included grades I, II, III and IV. With this change we no longer talk about classification, so as to avoid confusions, but of different trachoma grades unified under initials that must be kept regardless the language or country using the grading scale. In this sense, the right initials are TF, TI, TS, TT y CO.
- The SAFE Strategy was launched in 1997 by WHO and non governmental organizations in Geneva when it was clear that it was possible to eliminate trachoma. A global alliance for the elimination of trachoma was then established under the name of ***Global Elimination of Blinding Trachoma***, goal set for year 2020 (Resolution WHA51.11). To accomplish this goal, WHO recommends an integrated strategy known as **SAFE**:
  S = Surgery for trichiasis.
  A = Antibiotics to treat active trachoma cases.
  F = Face-washing.
  E = Environmental improvement to reduce transmission.
- The first thing to do is to identify trichiasis cases. Trachomatous trichiasis is defined as at least one eyelash rubbing on the eyeball. Some ophthalmologists disagree with this definition, as they consider this as a scarring entropion that is also present in leprosy cases or in elderly people. The fact is that TT cases are not found in urban but rural areas, which is more difficult and specific.
- The "S" component, i.e., surgery as TT treatment, consists of the bilamellar tarsal rotation which is the procedure locally recommended. Surgery follow up involves regular assessments to verify whether there are recurrences, i.e., if TT has reappeared, something that occurs in 10% of cases. Free surgery should be offered to anyone presenting with TT. In Brazil it is done for free regardless of the number of eyelashes in contact with the eyeball.
- The "A" component, i.e., antibiotics, refers to antibiotic treatment for active trachoma. The majority of TF or TI cases occur among 1-9 year-old children. Differential diagnosis is important, for example regarding allergic, viral or bacterial conjunctivitis. The literature states that the preferred treatment is erythromycin (sulfa) at a dose of 50mg per kg of weight every 6 hours during 3 weeks. Doxycyclin is also used, but it is not tolerated by infants. Another alternative is systemic tetracycline, but it may provoke adverse reactions; besides, adherence is difficult given the length of the treatment and the number of daily doses. In Brazil we use azithromycin – 20 mg/kg of body weight – in a single 1gr maximum oral dose. An alternate treatment is tetracycline 1% - ophthalmic ointment – applied twice a day for 6 weeks. It is not the ideal, given the burning sensation it causes and the technique mothers or caretakers must use to apply it on babies' eyes, but if azithromycin is not available, it is the best alternative because it is cheap and easy to get.
  A baseline study must be conducted to establish prevalence, as this will influence the decision on the treatment; surveys should be conducted in manageable populations. If TF prevalence among 1 to 9 year-old children is 10% or more, annual massive treatment should be delivered (to all the people in

the area or district) during three years. It is the only way to reduce prevalence of over 10%. After three years of massive treatment, a new survey must be conducted. If TF prevalence in children is still 10% or more, massive treatment should be continued.

If prevalence is less than 10%, new surveys should be conducted to determine the exact prevalence in a given community to follow it up through the trachoma program.

In communities with TF prevalence in 1 to 9 year-old children between 5 - 9%, family annual treatment must be implemented until prevalence is below 5%.

In small communities (neighborhoods, villages) with 10% prevalence or more, annual massive treatment should be implemented for three years, and then conduct a new survey.

In communities with 5% or less prevalence, massive treatment can be stopped.
If prevalence is 5% or more, annual treatment should be continued until prevalence is below 5%.

- The most important factor of antibiotic treatment is to achieve high coverage and ensure an adequate efficiency for the "A" component. To this end, it is important to gather census data of communities. If the project has been active for some time, census data are very likely already available. Achieving at least 80% coverage implies building an indicator where the number of individuals treated is divided by the total number of people.
- Implementing massive treatment entails establishing the amount of antibiotics needed for the intervention. It is essential to have enough antibiotics at the right time; to determine the annual goal of the treatment; to have adequate storage conditions; to train the personnel on the way of preparing and administering azithromycin; to implement community-based supervision measures, and to establish a treatment schedule. This implies enhancing awareness in the community by informing them about the disease, its prevention and treatment, as well as about the need to administer the antibiotics treatment, its length and different methods. Besides, the criteria to establish eligible and ineligible individuals for the antibiotics treatment must be considered: for example, less than one-year old children are ineligible, although the literature and the experience in some countries show that it can be administered from six months of age. The treatment in pregnant women should be decided by national programs according to their guidelines.
- Trachoma is usually present where environmental conditions are not the best and flies, which are the main vector of the disease, abound. That is why the "F" component of the strategy is not limited to face washing, but includes health promotion activities to educate people on trachoma and its transmission; encourage surgery acceptance; enhance acceptance and adherence to antibiotic treatment; promote facial cleanliness and environmental health, and explain how environmental improvement contributes to prevent trachoma transmission and other infections. Several communication strategies can be used to enhance awareness and encourage surgery acceptance and treatment adherence. Additionally, educational material can be designed (posters, handouts, flipcharts), preferably to be made by communities themselves. These activities can be carried out in worship places, community halls, health centers or schools.
- Materials should be written in communities' native tongues, or if they are illiterate, resort to adequate strategies to respond to their doubts, especially to questions such as the following:
  - What can be done to prevent trachoma? (Wash / clean children's faces with water / individual towels at least once a day; give adequate treatment to infected people; improve general hygiene in households and the community in general; persuade people to build and use septic tanks).
  - What is to be done when someone has trachoma? (Direct patients and their relatives to the nearest health center for treatment; clean infected people's eyes with clean water at least once a day using separate towels that should not be mingled with those of other family members; advise parents with trichiasis to seek for immediate treatment).
  - How is trachoma transmitted? (By direct contact of an infected child's fingers with a healthy child; by exchanging towels, handkerchiefs or any other fabric used for cleaning eye discharge; allowing flies to touch the eyes (they get contaminated with infected people's eye or nose discharges).

- Regarding the “E” component – environmental improvement –, reducing transmission through the promotion of personal and environmental hygiene should be emphasized, as well as the improvement of water and sanitation services; increasing people’s access to latrines and other safe methods of excreta disposal, and improving access to water by building new sources or recovering facilities in disrepair.

  As far as possible, adequate, safe and environmentally friendly technologies should be used, especially regarding an appropriate waste disposal and sewage system.

  To reduce the number of flies, besides environmental improvement measures, effective and sustainable solutions should be sought. The control of flies improves some aspects of communities’ health. Among fly control activities we can mention the following: reduce or eliminate reproduction and breeding places; avoid attracting flies to places where people live; reduce the number of flies entering houses and schools and limit their contact with people through barrier methods such as screens and nets, and, lastly, eliminate them by using chemical or physical methods. There is a very complete WHO manual on this topic.
- Finally, each country should identify and evaluate its situation to establish the way to implement the SAFE strategy considering all possible inter-sector approaches to community development in endemic areas, particularly to ensure affected communities’ access to clean water and basic sanitation services. All this information is available in the Guide for Trachoma Program Managers translated by PAHO especially for this meeting.

Prevalence studies and the use of information for plan development: Brazil's experience

Presentation by **Maria de Fatima Costa Lopes**, Manager of the National Trachoma Program, Brazil

Key conditions for success

- Coordination within the health sector is an essential condition to reach success in the elimination of blinding trachoma, especially regarding adequate coordination between the health promotion/prevention and health care areas.
- Information is an important tool in the identification of places in need of public health control interventions to eliminate blinding trachoma, particularly in those populations with the same epidemiological risk within communities.

Steps to establish disease burden

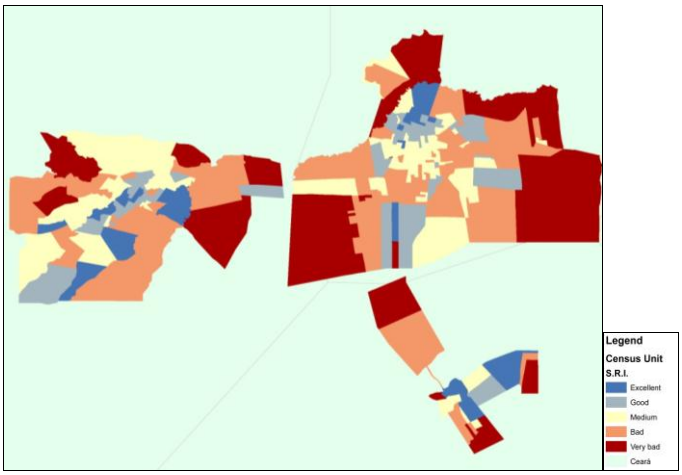
- The first thing to be done is the diagnosis of trachoma situation in order to:
  - Classify geographic places or areas where trachoma is endemic. The data from previous surveys can be used to this end, as well as written reports, hospital surgery registers, among others, to track the disease in a community.
  - Estimate disease burden in at-risk areas by selecting an adequate sample to carry out the prevalence survey. The trachoma program management should define the methodology.
  - Develop a protocol to establish the size of the sample. A methodological proposal for house-to-house prevalence surveys is described in the WHO Guide for Trachoma Program Managers.
- For the identification of areas at greater risk, all data available should be analyzed:
  - The first areas to work with are those with existing data indicating TF prevalence over 10%.
  - Then areas with previous information on TT prevalence.
  - Places where living and health conditions are poor and deficient.
  - Indigenous and rural communities.
  - In Brazil we also resort to at-risk-of-poverty indicators, which are closely link to those of epidemiological risk.
- To set the ultimate intervention goals for trachoma elimination we use prevalence indicators and the ultimate intervention goals for each SAFE strategy component.
  - Indicators:
    - TT prevalence of less than 1 case/1,000 people;
    - TF prevalence of less that 5% in 1 to 9 year-old children.
  - Estimation of needs to reach ultimate goal for SAFE strategy components: How many surgeries must be programmed, how much antibiotic is required, what promotion, prevention and environmental improvement activities should be implemented, specifically regarding latrines, drainage and access to drinking water.
- To establish the Implementation Unit of trachoma control activities we followed the WHO Guide recommendation. Given our logistics and work coordination conditions, our Implementation Unit is a district with 100,000 people. For at-risk populations of one million people, for example, we made adjustments and divided the area in Implementation Units of 100,000 inhabitants.
- The two basic activities for this measurement activity were the trachoma prevalence surveys in 1 to 10 year-old children and the assessment regarding TT presence in adults aimed at learning about the situation in at-risk areas and trichiasis situation among adults which could show distribution and occurrence variations in specific Implementation Units. It is an experience in progress which has been under implementation for the last two years.
- To estimate TF prevalence in 1 to 9 year-old children the following information was considered:
  - Data from the trachoma prevalence survey among school-aged children from 2002 to 2008.

- Data gathered from routine health care service registers and from the literature (bibliographical references).
- Classification of municipalities by epidemiological risk level as compared with the prevalence data and the past history of the disease. This classification is an innovation we introduced to respond to the needs of such a large country as ours.

- Regarding epidemiological risk classification, we took into account the following selection criteria:
  - Risk 1:
    - Municipalities with trachoma prevalence of ≥ 5% in the last 10 years;
    - areas with trichiasis cases both present and historical and high prevalence levels in the past;
    - municipalities with indigenous communities or groups from former black slave areas ("quilombolas");
    - municipalities with the worst absolute poverty indicators (4th and 5th quintiles - Brazil-IBGE);
  - Risk 2
    - Municipalities with trachoma prevalence of < 5% in the last 10 years;
    - municipalities with no past or present trichiasis cases;
    - municipalities where there are no indigenous communities or groups from former black slave areas ("quilombolas");
    - municipalities with better absolute poverty indicators (1st to 3rd quintiles - ranking Brazil-IBGE);
- The next stage was determining sample size. After grouping municipalities by risk level (risk 1 or 2), which is the stage we are now in, and due to the different population sizes and trachoma prevalence, we decided to conduct cluster surveys in at-risk areas. For this we have set up the following procedure (for municipalities classified as of risk 1):
  - First, municipalities with less than 100,000 people are grouped in modules or implementation units.
  - Second, municipalities with more than 100,000 people, where mapping should be done by enumeration areas, and the highest poverty indicators will be selected by localities, neighborhoods, municipalities or regions (e.g., metropolitan region) to estimate the clusters that will finally form the modules or Implementation Units of 100,000 inhabitants for the sampling.

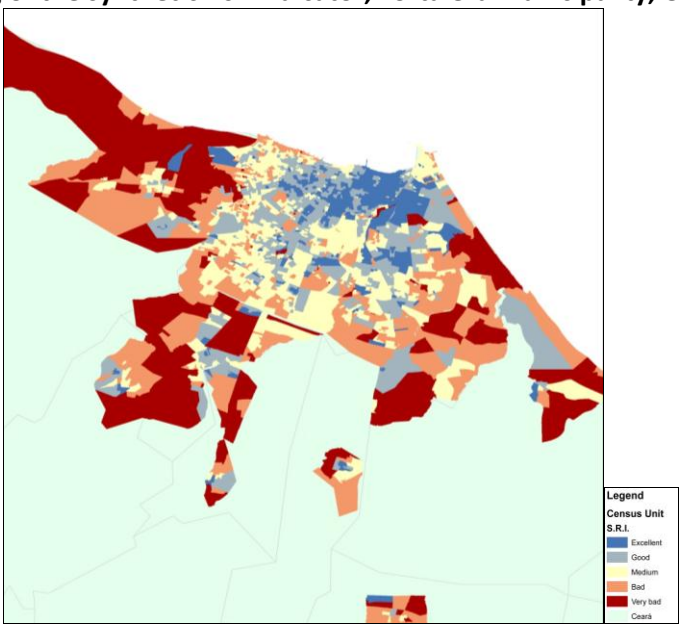
Map 20 shows an example of mapping in three municipalities based on the classification used by the Brazilian Institute of Geography and Statistics (IBGE by its Portuguese acronym), where the synthetic risk is calculated based on sanitation, education, health and housing variables, among others. The idea is to come up with clusters formed by the enumeration areas selected to determine the survey sample. They can include two o three municipalities depending on the size of their population, or they may be areas within a bigger municipality such as the case of Fortaleza, capital city of Ceara (Map 21).

Map 20. Synthetic risk indicator, Juazeiro, Crato and Barbalha municipalities, Ceara, Brazil, 2011.



Source: Government of Brazil, IBGE, 2011

Map 21. Mapping of the synthetic risk indicator, Fortaleza municipality, Ceara, Brazil, 2011.



Source: Government of Brazil, IBGE, 2011

- To determine the sample size we considered an active trachoma prevalence of 5% in 1 to 9 year-old children and added another 10% to compensate for possible losses for a total 2,000 children in each priority area selected for the survey. However, eye exams to be conducted for all members in selected households would sum up to 5,000 per module or Implementation Unit with 100,000 people.
- Then we calculated the interventions required in each SAFE strategy component. To do this we took the country's total population, estimated in 190 million (2010) in the 27 states and 5,565 municipalities, and based on this total we determined relevant estimates:
  - The total population in the risk 1 group was 38 million people (in those cities with the highest levels of absolute poverty -IBGE 4th and 5th quintiles).
  - The total population in poor areas within cities with large risk 2 population groups was 10 million people.
  - The total indigenous population was 500,000.

All these groups summed up to a total population of 48,500,000, i.e., the population at risk, of whom about 9 million people corresponded to the total population of 1 to 9 year-old children (about 18% of the target population).

Table 15. Trachoma prevalence in the municipalities included in the national survey on trachoma, Brazil, 2002 – 2008

Trachoma prevalence in municipalities	North	North East	South East	South	Middle West	Total in Brazil	%
Zero	35	172	38	39	21	305	20.1
> Zero < 5	128	290	80	79	63	640	42.3
5% - < 10%	69	136	28	72	30	335	22.1
≥ 10%	51	102	25	42	14	**234**	**15.5**
Total	**283**	**700**	**171**	**232**	**128**	**1514**	**100**

Source: National survey on trachoma prevalence among students.

- For the calculation of the SAFE strategy components we used the national survey data. Knowing that the population with ≥ 10% trachoma prevalence corresponded to 15% of the total population (Table 15), we took this percentage to estimate the population expected to have the same prevalence as the target population of the Plan. For example, to estimate the amount of antibiotics needed for treatment, this 15% was applied to the target population to calculate the amount of medication required for the Plan (Table 16).

Table 16. Estimate of antibiotic requirements, National Plan for the Elimination of Blinding Trachoma, Brazil, 2011

At-risk area	Total population	1 – 9 year-old population	TF prevalence ≥ 10%	Total treatments for 1 to 9 year-old children (3-year treatment)	Total massive treatments (4 people/family)
Risk 1	38,500,000	6,930,000	831,600	2,493,000	10,476,000
Risk 2	10,000,000	1,800,000	216,000	648,000	2,592,000
Total	48,500,000	8,730,000	1,047,600	4,190,400	12,571,200

(*) 15% of the population expected to have a TF prevalence ≥10%, which corresponds to an estimate of 12% of the children affected by the disease (the remaining 3% would be adults)

In this case, 831,600 treatments would be required for 1 to 9 year-old children within the population classified as of risk 1. As the treatment lasts three years, 2,493,000 treatments would be required for the 1 to 9 year-old group. As for the massive treatment, 10,476,000 treatments would be required for an average of four members per family during the three years.

- Regarding the calculation of the number of trichiasis surgical procedures, we took historical prevalence levels (Map 22), and displayed the figures on a spreadsheet (Table 17) to then apply the prevalence to 20% of the rural population over 14 years of age; this resulted in an estimated 6,103 surgeries to be performed in target populations.

Map 22. Trachomatous trichiasis (TT), bibliographic data, Brazil, 2002 - 2007

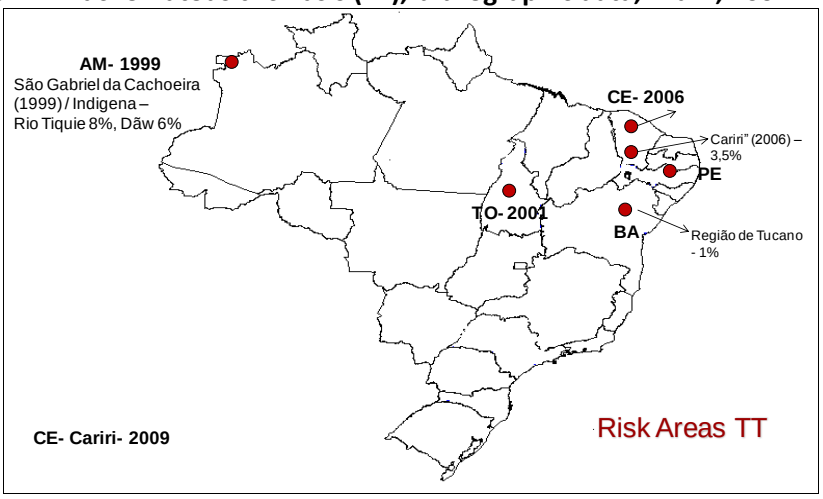


Table 17. Estimate of component "S" (surgery) in the SAFE strategy

Historical records	Total population	> 14 year-old population	20% of rural population > 14 years of age	TT prevalence (%)	TT estimate
Cariri Region – CE	528,381	422,704	84,540	2%	1,692
Ibiapada Sierra – CE	299,453	239,562	4,791	1%	479
BA North East Region	424,100	301,152	6,023	1%	602
PE West Region	366,827	245,132	4,903	1%	490
Municipalities with absolute poverty index in 4th and 5th quintiles	50,000,000	40,000,000	8,000,000	0.02%	1,600
Indigenous areas	500,000	310,000		0.4%	1,240
BRAZIL	**52,118,761**	**41,558,550**	**8,450,257**		**6,103**

Source: MS/SVS/DEVEP/CGDT/CDTV: Bibliographic data on TT prevalence estimates with variations between 0.02% and 2%

Challenges regarding the National Plan implementation

- Difficulties regarding the situation analysis to define at-risk areas, diagnosis and mass treatment.
- Weaknesses in logistics systems.
- Integration with primary care and other health care levels.

Challenges regarding the certification process

- Achievement of blinding trachoma elimination goals set for year 2015
- TF prevalence < 5%
- TT prevalence < 1/1000 people country-wise

Trachoma prevalence survey in Guatemala, 2011

Presentation by **Oscar Leonel Figueroa Rojas**, National Trachoma Program, Ministry of Public Health and Welfare, Guatemala.

- The prevalence survey was conducted in three municipalities of Solola and a municipality of Suchitepequez jointly with the following institutions: the Ministry of Public Health and Welfare, CNE, the health units of the Traditional Medicine and Disability Programs, the Unit for Indigenous Peoples' Health and Intercultural Affairs, the "Visualiza-AV" Association, the Committee for the Blind and Deaf of Guatemala, the National Commission for Eye Health (Committee 20/20), the Pan American Institute against Blindness (IPC, by its Spanish acronym), the National Ophthalmological Unit, the Galileo University, the NGO "Vivamos Mejor", the Cuban Medical Cooperation, the Wilmer Eye Institute, Johns Hopkins University-JHU, the Cristoffell Blinden Mission–CBM and the Pan American Health Organization /World Health Organization - PAHO/WHO.
- It is worth noting that Guatemala has already established its National Plan for the Prevention of Blindness in response to the World Health Assembly Resolutions WHA 56.26 and WHA 59.25 adopted in 2003 and 2006, respectively. These commitments were ratified in Resolution CD49.R19 by the 49th Meeting of PAHO Directing Council held in Washington, D.C. in 2009.
- Our country backs the global initiative for the elimination of preventable blindness launched by the Pan American Health Organization/World Health Organization together with governments and non governmental organizations at national and international level. Guatemala's National Plan for the Prevention of Blindness was ratified by the Minister of Health, and the National Commission for Eye Health is in charge of its implementation.
- The main reason to conduct the survey is the existence of evidence based on clinical studies undertaken in our country suggesting the presence of the trachoma causative agent among rural communities of the four municipalities selected as the target population: three in Solola (Nahuala, Santa Catarina Ixtahuacan and San Lucas Toliman) and one in Suchitepequez (Santo Tomás La Union).
- Regarding the definition of the problem, it was established that: "Trachoma is the leading cause of preventable infectious blindness in the world. Children are the most affected group. It is usually present in extremely poor rural areas in developing countries where overcrowding, poor sanitation, contaminated water and vectors facilitate transmission".
- The Ministry of Public Health and Welfare (MSPAS by its Spanish acronym) has not implemented epidemiological surveillance, treatment or control of the disease, so it is included in the group of neglected diseases.
- The activities implemented by the National Trachoma Program are limited to clinical evaluations and treatment administration, as no lab confirmation or diagnosis is carried out.
- The general objective of the Plan is to "Determine the prevalence of *Chlamydia trachomatis* eye infections in children under 10 years of age and women over 40 years of age in three municipalities in Solola and one in Suchitepequez, Republic of Guatemala, from January to December 2011."
- The specific objectives include:
  - Determining *Chlamydia trachomatis* eye infection prevalence in 1 to 9 year old children and women over 40 years old in 3 municipalities in Solola and one in Suchitepequez.
  - Determining trichiasis (TT) prevalence in women over 40 years old in 3 municipalities in Solola and one in Suchitepequez.
- The following is the survey hypothesis: "*Chlamydia trachomatis* eye infection prevalence in children under 10 years old in the communities of Nahuala, Santa Catarina Ixtahuacan and San Lucas Toliman municipalities, Solola, and Santo Tomas La Union, Suchitepequez, is 10%, and trichiasis prevalence in 40 year-old women from these same communities is over 1/1,000 people."

- Regarding funding, we count with the support of PAHO/WHO, Johns Hopkins University – JHU and Cristoffell Blinden Mission –CBM. Other contributions such as human resources, vehicles, pilots and materials come from institutions participating in the Commission for the Prevention of Blindness.
- The research model and design were defined as follows:
  - Statistical analysis based on descriptive quantitative observations;
  - prevalence survey and diagnostic tests;
  - operational research;
  - variable description and comparison, and
  - search for patterns and trends.
- Maps of each district were used for the sampling, including village location within communities according to their geographical location (South, Center and North). Fifteen communities were randomly selected based on probability proportional to size. From Santo Tomas La Union we randomly selected three communities from the northern part of the municipality.
- The main household eligibility criteria was having one or more 1 to 9 year-old child or a 40 year-old woman or older. If the criterion was met in any of these categories, a census team member would apply the survey after obtaining interviewees' informed consent.
- For data gathering, the census interviewer recorded on the specified form the household characteristics, as well as the information regarding eligible members, including age, sex and ethnic group, and the data concerning sample taking if household members met the requirements.
- Five research teams were set up and their members trained by experts from Johns Hopkins University. Each team included an eye examiner specialized in trachoma, a lab technician, a community health promoter, a pilot and a person in charge of data entry.
- Regarding trachoma grading, we used the grading scheme recommended by PAHO to evaluate the presence or absence of five trachoma signs: TF (trachomatous inflammation - follicular), TI (trachomatous inflammation -intense), TS (trachomatous scarring), TT (trachomatous trichiasis) and CO (corneal opacity) (Annex 3).
- A swab was obtained from the left superior tarsal conjunctiva in every child with TF and/or TI to detect *C. trachomatis*. Each team had swab dry air containers, and a random sample of 5% of the swabs was taken for quality control to confirm they were uncontaminated.
- Swabs were kept cold in flasks and then frozen in the Area Head Offices until their dispatch to the central storage place once surveys were completed. All samples were sent to the international *C. trachomatis* lab at Johns Hopkins University to be tested with the assistance of the MSPAS National Laboratory.
- Research summary:
  - 2,675 household surveys were conducted in 48 communities; 3,695 children under 10 years of age and 1,299 women over 40 were surveyed, resulting in 109 samples of children with suspected trachoma (Table 17).
  - We did not find active trachoma or trichiasis cases in Santo Tomas La Union. We found two TS cases in women over 40 years old, i.e., 2.2%.
  - In San Lucas Toliman, active trachoma prevalence in children under 10 years old was 1.5%. TT prevalence in 40 year-old women and over was 3%.
  - Active trachoma prevalence in children under 10 years old was 3.4%, and *C. trachomatis* was confirmed by the lab in one case. TT prevalence in 40 year-old women and over was 1.1%.
  - In Sta. Catarina Ixtahuacan, active trachoma prevalence in children under 10 years old was 5.7%; the lab confirmed *C. trachomatis* in four cases. TT prevalence in 40 year-old women and over was 1.8%.

Table 18. Results and activities of trachoma prevalence surveys in four municipalities of Solola and Suchitepequez, Guatemala, 2011

Nº	Municipality	Department	Number of communities	Total number of households surveyed	Children under 10 years old examined	Women over 40 years old examined	Samples from children with suspected trachoma
1	San Lucas Toliman	Solola	15	873	1.185	398	17
2	Santa Catarina Ixtahuacan	Solola	15	823	1.069	342	53
3	Nahuala	Solola	15	807	1.262	467	39
4	Santo Tomas La Union	Suchitepequez	3	172	179	92	0
	Total		**48**	**2,675**	**3,695**	**1,299**	**109**

Place	Active trachoma prevalence in children < 10 years of age	# of PCR-positive cases	Trichiasis prevalence in 40 year-old women and over
Santo Tomas la Union	0%	0	TT: 0% TS: 2.2%
San Lucas Toliman	1.5%	0	TT: 3%
Nahuala	3.4%	1	TT: 1.1%
Sta. Catarina Ixtahuacan	5.7%	4	TT: 1.8%

Source: MSPAS, Guatemala, 2011

- Survey conclusions:
  - Trichiasis cases suggest that active trachoma was present in the past in surveyed municipalities.
  - Surgery programs must be organized for trichiasis cases.
  - None of the surveyed municipalities is close to an active trachoma prevalence of 10%.
  - The majority of cases came from two sub-municipalities: Santa Catarina Costa and Nahuala Costa where prevalence was over 5% while some communities showed prevalence levels over 10%.
  - *C. Trachomatis* presence was confirmed by PCR in some cases.
  - An action plan to treat active trachoma should be laid down, especially in the sub-municipalities with the highest prevalence.
  - Programs to supply water and sanitation services should be implemented.

Annex 3 includes the template used in Guatemala for the household survey.

Session 3. Analysis of strengths, weaknesses, opportunities and threats regarding the SAFE strategy components in the four countries

Vaupes – Colombia:

SWOT analysis of the SAFE strategy "S" component

Box 2. SWOT analysis of the SAFE strategy "S" component in Vaupes, Colombia, 2011

	Strengths	Weaknesses
Internal analysis	• 21 people have already been identified as candidates for TT surgery by Dr. Hollman Miller from the VBD section of Vaupes Health Bureau. • The local San Antonio Hospital will provide missing supplies for surgeries programmed for June 2011 in Vaupes. • Mallamás will provide lodging for TT patients programmed for surgery • This surgical procedure is covered by the mandatory health plan, so it will be paid by the health care insurance company.	• The ultimate intervention goal is yet to be defined for TT surgeries • We have no guidelines for TT surgery • Coordination of activities to ensure TT surgeries is deficient • Lack of resources from the Vaupes Health Bureau for future TT surgeries • Lack of personnel for post-surgery follow up • Lack of resources for surgical suture removal (15 days after surgery) and for the annual control of patients (flights, fuel, lodging, staff) • Lack of resources for TT patients transportation to Mitu to undergo surgery • Patients' refusal to undergo TT surgery. • TT case detection activities were stopped due to lack of suitable personnel in the rural health care network. • The lodging facilities do not have appropriate sanitation conditions to keep patients before they go back to their communities unless a contract is signed with "Maloka", the only lodging with adequate conditions. • Lack of access to health care services in Vaupes rural areas.
	Opportunities	**Threats**
External analysis	• Brazil can help us to calculate the ultimate intervention goals for TT surgeries. • Brazil has a TT surgery management guide in Portuguese available in electronic file • The air patrol will support Vaupes health authorities with TT surgeries programmed for June 10, 2011, by providing an ophthalmologist, supplies and equipment • The Lions Club is ready to train medical personnel for post-surgery follow up • The Lions Club can help with the translation of the TT surgery guide from Portuguese to Spanish.	• The remoteness of areas and the dispersion of population affected by ocular trachoma increase intervention costs

Box 3. SWOT analysis of the SAFE strategy "A" component in Vaupes, Colombia, 2011

	Strengths	Weaknesses
Internal analysis	• We have prevalence data from communities where ocular trachoma presence has been detected in Vaupes. • Vaupes counts with population census for all urban and rural communities	• We do not have the data from the remaining communities in Vaupes. • The amount of antibiotics required has not been determined • There is no plan for antibiotics delivery • Lack of personnel trained on the administration of the antibiotics and on supervision tasks. • Lack of personnel to conduct trachoma identification and search, or trained staff on eye health care (prevention of blindness and eye health). • We haven't defined the register forms and facilities required for antibiotic storage • Lack of information, education and communication materials on ocular trachoma especially designed for indigenous communities. • Lack of resources for trachoma awareness activities in communities (personnel: pedagogue or anthropologist, and supplies). • Lack of a manual on antibiotics management in Spanish. • Vaupes public health care service delivery institution has high turnover levels • Treatment rounds and schedules are still to be defined in Vaupes • Health care services do not reach rural areas and resources are insufficient to deliver them in a permanent way (the whole year round) • Azithromycin is not included in the Colombian Mandatory Health Plan.
	Opportunities	**Threats**
External analysis	• Brazil has a manual on antibiotics management • We can request support from the Trachoma International Initiative, ITI, to get antibiotics through donation for which an intervention plan must be laid down including logistics capacity • Lions International is ready to support the implementation stage • Partnerships can be sought with the Colombian ophthalmologists associations	• Lack of political will to develop primary health care programs • There is no national program for neglected diseases such as ocular trachoma

SWOT analysis of the SAFE strategy "F" component

Box 4. SWOT analysis of the SAFE strategy "F" component in Vaupes, Colombia, 2011

	Strengths	Weaknesses
Internal analysis	• A complete environmental health diagnosis has been conducted in Vaupes. • The Department's Plan of Collective Interventions covers 3 aspects: Family, school and community including key IMCI, e.g., personal hygiene and face washing. • Vaupes Health Bureau counts with a professional who could assist in the production of IEC materials. • There is experience regarding methods and approaches to radio broadcasting in support of health programs. • Vaupes Regional Health Plan includes the development of community-based environmental health plans.	• Lack of resources for printing materials and promoting educational strategies. • We do not count with IEC materials. • No advocacy initiatives have been undertaken to approach the education sector to enhance Healthy School strategies. • Project management know-how is poor. • Lack of management and advocacy tools to enhance joint work with other sectors.
	Opportunities	**Threats**
External analysis	• The topic can be included in the indigenous affairs work group. • There is the possibility of presenting educational projects together with the National Planning Department (DNP). • The facial cleanliness strategy can be worked out together with the Colombian Family Welfare Institute (ICBF). • It is possible to include facial cleanliness activities in the agenda of regional or community meetings. • The facial cleanliness strategy can be also integrated to the "Families in action" program. • It is possible to integrate the educational component of facial cleanliness for women to the "Women guards" program in Pira-Paraná. • The facial cleanliness component can be integrated to the "Life-Promoting Women" program led by Vaupes Governor's Office.	• No threats were detected.

SWOT analysis of the SAFE strategy "E" component

Box 5. SWOT analysis of the SAFE strategy "E" component in Vaupes, Colombia, 2011

	Strengths	Weaknesses
Internal analysis	• The Vaupes Regional Health Plan includes the development of community-based environmental health plans as part of the Sanitation and Environmental Security program. • Environmental health needs in indigenous communities have been fully identified. • Water sources are close to indigenous communities, as there are plenty rivers and brooks.	• The annual environmental health diagnosis has not been shared with other sectors.
	Opportunities	**Threats**
External analysis	• At least 4 out of the 17 work zones in the Department have septic tanks in their communities. • There is a Water Plan for Vaupes. • The Department's Water Plan manager is very efficient in fundraising. • Collaboration with the MPS (Health Ministry) can be sought for project management aimed at improving sanitation conditions in schools.	• Little resources at Governor and Mayors' offices to improve excreta disposal management. • Lack of resources and political will to improve sanitation conditions in schools • Vaupes schools have not implemented the "Healthy schools" strategy. • In communities with latrines or septic tanks their use is not generalized. • There are many fruit trees close to houses. • On the average, 90% of indigenous population conducts garbage and excreta disposal on the open.

Mexico:

SWOT analysis of the SAFE strategy "S" component

Box 6. SWOT analysis of the SAFE strategy "S" component in Mexico, 2011

	Strengths	Weaknesses
Internal analysis	• Surgery goals have been set. • There is an Annual Plan for Surgical Procedures. • There is certified personnel to carry out surgeries • Availability of surgical materials and supplies required for surgeries • There is an operative system for surgery procedures • Surgeries are free for the population • There is trained staff to conduct post-surgery follow up in patients. There is a register of patients who have undergone surgery for individual follow up • There is a system of trained and certified health promoters for trichiasis diagnosis	• No method for surgery quality control on the long term has been established • There is no health care system close to the most remote communities in the endemic area • There is no active case search program in municipalities bordering Guatemala • Resource mobilization processes for patient recovery are deficient (administrative and paper work)
	Opportunities	**Threats**
External analysis	• The Trachoma program counts with Federal and State support (empowerment) • The Federal level has set up a work team for the Trachoma program	• Refusal to undergo surgery among the population • Patients have to travel long distances to access surgery services • No materials, manuals or guides for surgeons training are available.

SWOT analysis of the SAFE strategy "A" component

Box 7. SWOT analysis of the SAFE strategy "A" component in Mexico, 2011

	Strengths	Weaknesses
Internal analysis	• There is a system for annual medication distribution to new trachoma patients and their contacts • The antibiotic is already included in the Health Service General Catalog (CAUSES, by its Spanish acronym). • Criteria for antibiotic (azithromycin) administration have been established in the program. • Verification of treatment administration for all trachoma cases in need is operative. • Weekly and monthly consolidated reports are recorded in the national Unified Epidemiological Surveillance System (SUAVE, by its Spanish acronym).	• Lack of personnel for reassessment (absentees, etc.). Although there is a field team for the 5 municipalities, absentees' assessment is difficult given that no specific personnel has been assigned to such task. • Lack of vehicles for medication distribution in some localities. • Lack of fuel supplies for transportation.
	Opportunities	**Threats**
External analysis	• PAHO has offered continued support to ensure antibiotic availability to treat trachoma. • We are in the process of gathering all required information on the last 10 years of the program in order to request certification. • We are laying down process and coverage indicators for the future certification of blinding trachoma elimination.	• There is no standardized treatment guide.

SWOT analysis of the SAFE strategy "F" component

Box 8. SWOT analysis of the SAFE strategy "F" component in Mexico, 2011

	Strengths	Weaknesses
Internal analysis	• There is a structured program for hand and face washing focused on school teachers and students in the endemic area. • The Clean Faces program ("Caritas limpias") is operative • Health promoters • There is a manual for promoters' training and flipcharts for education activities among the population. • Puppet theater activities and information spreading through loudspeakers in native indigenous languages are conducted in local communities.	• Some places have implemented water systems, but awareness regarding facial cleanliness is still poor.
	Opportunities	**Threats**
External analysis	• The health promotion budget can also cover trachoma activities.	• Dry seasons or lack of water in some communities hinders the adoption of personal hygiene habits.

SWOT analysis of the SAFE strategy "E" component

Box 9. SWOT analysis of the SAFE strategy "E" component in Mexico, 2011

	Strengths	Weaknesses
Internal analysis	• There is a State and National Water Bureau (CONAGUA, by its Spanish acronym). • Regulations have been established for water system monitoring at local level (jurisdictional COEPRIS). • Household censuses are conducted by SEDESOL aimed at housing improvement. • Housing improvement programs are being conducted in the endemic area.	• Lack of information and data from water systems managed by CONAGUA in local communities. • Although latrines exist in some communities, they are not properly maintained.
	Opportunities	**Threats**
External analysis	• On June 16 - 17 there is meeting planned with PAHO and CONAGUA national and state authorities to decide on strategies. • MDGs recognized as constitutional rights. • Agreements with SEDESOL • The 100 x 100 strategy which focuses action on the country's 100 poorest municipalities	• Excreta disposal on the open favors transmission.

Brazil:

SWOT analysis of the SAFE strategy "S" component

Box 10. SWOT analysis of the SAFE strategy "S" component in Brazil, 2011

	Strengths	Weaknesses
Internal analysis	• We count with trained ophthalmologists for surgeries • We have defined the surgery technique • Trachoma is included in the epidemiological surveillance system • Political will of States and interested parties to confront the problem • Trained staff on case identification • The hospital network has adequate coverage in some country areas • There is a group of ophthalmologists assessing the Ministry of Health on the "S" component (surgery)	• Difficulties in defining the ultimate intervention goals • TT case identification and location have been established • Difficulties in access to services by patients • Difficulties regarding patients transportation • Logistics for post-surgery follow up • Equipment transportation • Difficulties in post-surgery follow up • Limited financial resources • Not all country areas have defined health care service structure for surgeries • There is no national committee or plan for the prevention of blindness • Some people refuse to undergo surgery
	Opportunities	**Threats**
External analysis	• Research studies generating prevalence data • Trachoma has been defined as priority disease within the activities of Brazil's Ministry of Health • Lions International - Sight First • ITI	• Remote areas have access difficulties due to the vastness of the country • Lack of access to health care services

SWOT analysis of the SAFE strategy "A" component

Box 11. SWOT analysis of the SAFE strategy "A" component in Brazil, 2011

	Strengths	Weaknesses
Internal analysis	• The medication for treatments is available • The Trachoma Control Manual has been defined • There is trained personnel for diagnosis and treatment in several localities • Family health care programs have good coverage • Good integration with the indigenous health care service branch • Trachoma has been included in the epidemiological surveillance system • Trachoma has been included as a strategic disease in the activities of the Ministry of Health related to neglected diseases • We count with lab supplies and diagnosis capacity using direct immunofluorescence for *Chlamydia trachomatis* • The National Plan for the Elimination of Blinding Trachoma is in the final stage of formulation	• Identification and location of communities requiring massive treatment. Although mapping has been conducted, there are still some difficulties for locating communities in need of massive treatment • Logistics and financial limitations (transportation and per diem expenses to carry out household surveys) • Some areas have shortage of qualified personnel for diagnosis and treatment • Limited access to services by patients from rural and indigenous communities • Need of health professionals specialized on primary health care for diagnosis • High levels of turnover among trained personnel • Limited communication channels for information campaigns • No specific educational materials for indigenous populations are available • Difficulties in carrying out epidemiological supervision and monitoring activities • Support is required to implement PCR tests in laboratories
	Opportunities	**Threats**
External analysis	• Trachoma is defined as a strategic disease and is included in Brazil's National Plan for the Eradication of Poverty • The School-based Health Care Program of the Ministry of Health represents an integration opportunity • Partnerships with ophthalmologists associations should be established	• Difficulties for verifying diagnosis and treatment by non-medical professionals (a bill on regulated medical profession is presently being discussed by National Congress) • There is a belief that trachoma has been already eliminated. Ophthalmologists refuse to accept that trachoma is still present in the country and they do not know how to diagnose it

SWOT analysis of the SAFE strategy "F" component

Box 12. SWOT analysis of the SAFE strategy "F" component in Brazil, 2011

	Strengths	Weaknesses
Internal analysis	• School-based health care program of the Ministry of Education. • Educational materials for school children (folders and posters) are available • Family health programs have very good coverage. • Coordination with indigenous organizations and health care teams • Training and awareness campaigns for community health care agents (primary care and indigenous health care promoters). • Good computer coverage in schools.	• Lack of educational materials addressed specifically to indigenous communities • Poor integration with the education sector regarding health interventions based on a cross cutting approach to curricula. • Poor integration with other diseases which require special emphasis on cleanliness habits (cross cutting integration with other interventions, e.g., against diarrhea). • Shortage of materials such as CDs and DVDs to enhance awareness among teachers and students • Deficient integration to develop methodologies for awareness campaigns in schools. • Poor housing conditions and lack of educational materials on cleanliness issues in very poor areas, especially in indigenous communities. • Limited financial resources and many bureaucratic difficulties. • Lack of advocacy work in health and education sectors for the development of health education activities (lack of tools). • Lack of advocacy instruments among education and health workers. • Deficient use of water and poor household cleanliness habits.
	Opportunities	**Threats**
External analysis	• Coordination with the Ministry of Education regarding school-based radio and TV as communication channels. • Coordination with indigenous organizations and groups working with children such as the Social Pastoral for Childhood and others. • Coordination with other partners: community and indigenous associations.	• Life and health conditions sustainability among the poorest, most vulnerable communities.

SWOT analysis of the SAFE strategy "E" component

Box 13. SWOT analysis of the SAFE strategy "E" component in Brazil, 2011

	Strengths	Weaknesses
Internal analysis	• Integrated planning of health and sanitation sectors in state governments for the funding of sanitation activities in priority areas. • Trachoma prevalence adopted as criterion for the funding of sanitation, environmental improvement and water projects. • Possibility of promoting information on sustainable development in schools and using their communication channels.	• Poor planning integration between health and sanitation sectors at government levels. • Very high financial costs for need identification. • Poor living and household sanitation conditions • Flies entering households and inadequate excreta and garbage disposal. • Few latrines and inadequate use of those that have been installed. • No campaigns have been designed to promote adequate use of latrines. • Poor sanitation conditions in schools and rural and indigenous communities.
	Opportunities	**Threats**
External analysis	• Trachoma has been identified as strategic disease in Brazil's National Plan for the Eradication of Poverty (sanitation, environmental improvement and access to water components) • Sanitation and environmental improvement in schools. • Campaigns for adequate use of latrines. • Possibility of integrating with the Ministry's sanitation activities in cities.	• Sustainability of sanitation conditions in the poorest, most neglected communities

Guatemala:

SWOT analysis of the SAFE strategy "S" component

Box 14. SWOT analysis of the SAFE strategy "S" component in Guatemala, 2011

	Strengths	Weaknesses
Internal analysis	• We already have TT survey-based prevalence data among women • Approval by the Ministry of Health and Welfare • We have set up the technical team to draft the regulations on integrated trachoma care (based on the SAFE strategy) including the regulations for other eye infections care • We count with facilities to set up the surgical equipment in health centers or mobile units	• We have no budget • The ultimate intervention goal has not been established • The national prevalence is yet unknown. • We do not have an annual trachoma plan. • The MSPAS does not have ophthalmologists • We do not have training and follow up manuals for surgeons • Lack of supplies, equipments and trained personnel
	Opportunities	**Threats**
External analysis	• National Commission for the Prevention of Blindness (Committee 2020) • The commission 2020 has enough surgeons • Community promoters • 'Cocodes', municipalities, government institutions and non governmental health organizations • Guatemala is known as a country where trachoma is present and can, therefore, have access to international cooperation funds	• Adequate facilities or mobile units for conducting surgeries • No certainty about certification • Cultural barriers • Language • Geographical location • Political changes; policy strengthening • Lack of awareness regarding trachoma management

SWOT analysis of the SAFE strategy "A" component

Box 15. SWOT analysis of the SAFE strategy "A" component in Guatemala, 2011

	Strengths	Weaknesses
Internal analysis	• We have completed the prevalence survey • We have good relations with communities and they are aware of the issue • The Ministry has the facilities and the required infrastructure for the storage of medication • The MSPAS teams will receive training and they have good coverage. • Azithromycin is included in the MSPAS list of approved medications • It is possible to draft the regulations to integrate with the Eye Health Program	• We do not have personnel trained on medication distribution. • We have not established the guides and protocols for treatment initiation and interruption.
	Opportunities	**Threats**
External analysis	• Get to know Mexico's experience through the contact and exchange established during the present meeting • Support from PAHO/WHO • National Commission for the Prevention of Blindness (Committee 2020) • ITI technical support and medication donations • The possibility of obtaining support from other partners such as the Johns Hopkins University, CBM, Lions Club.	• Political changes during the present year in the country. • Lack of guides in Spanish • Limited time to achieve our goals

SWOT analysis of the SAFE strategy "F" component

Box 16. SWOT analysis of the SAFE strategy "F" component in Guatemala, 2011

	Strengths	Weaknesses
Internal analysis	• Using MSPAS existing resources for health promotion. • There is a guide on hand and face washing • Health promotion and education teams (Proedusa - MSPAS) • Community-based health teams (community-based promoters, facilitators and instructors) • Coordination with the Training Department (DECAP) • Water and environment	• Lack of funds for the printing and reproduction of materials • We do not have trained personnel for education on trachoma. The materials regarding face cleanliness have not been validated
	Opportunities	**Threats**
External analysis	• Convening a conference of MSPAS community-based promoters and facilitators • Coordination between local authorities and community leaders • Coordination with the Ministry of Education schools and institutes. • Good relations with cultural groups and strategic partnerships with local NGOs in environmental topics • COCODES/Health Commissions • Information campaigns through radio, TV, local Cable TV, Internet and newspapers. • Information on eye health including trachoma through posters, announcements and leaflets, etc. • Key places in communities with the support of churches • Use of guides from other countries and institutions.	• Lack of knowledge on the rational use of water • Poor coverage of water services

SWOT analysis of the SAFE strategy "E" component

Box 17. SWOT analysis of the SAFE strategy "E" component in Guatemala, 2011

	Strengths	Weaknesses
Internal analysis	• Municipalities have set their water and latrines plans and the MSPAS conducts quality control to water. • The Ministries of Environment and of Agriculture and Livestock and "Segeplan" supervise water sources and implement quality control at country level. • There are sanitation teams working for the MSPAS. • Water and environment	• Inefficient water and latrines distribution • Uncontrolled logging • Lack of education on reforestation • House improvement and population location.
	Opportunities	**Threats**
External analysis	• Suggest MDG 7 • Local authorities and political will	• No political will among local authorities • Cultural barriers • Unhealthy lifestyles • Mismanagement of garbage disposal • Transmission of other diseases is favored • Waste of water in some places in the country

Session 4: Integrated plans for trachoma elimination

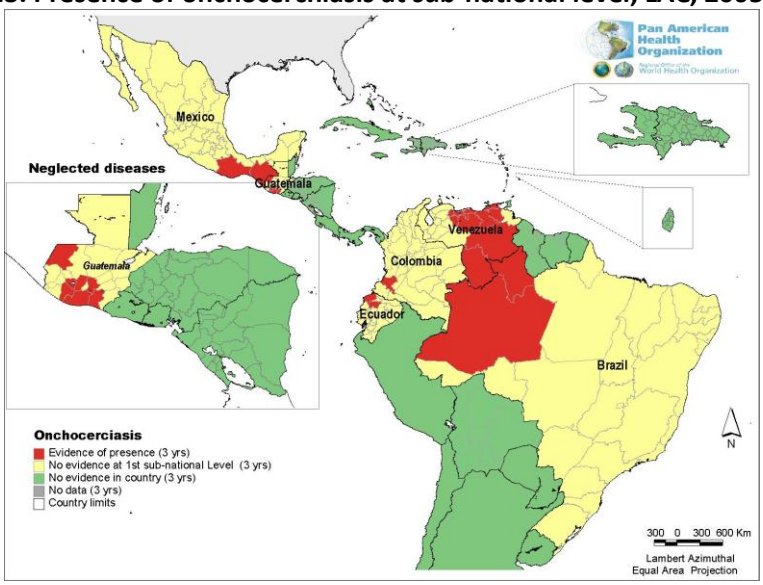
Presentation by **Martha Idali Saboya**, Regional Program for Neglected Diseases, Pan American Health Organization.

- We are working on trachoma issues in the context of the Resolution[5] signed by the Ministers of Health in 2009 stating the commitment of establishing programs to fight against neglected diseases. To this end, it is necessary to structure and implement Integrated Plans for Neglected Diseases on which several countries have had some experience. In Mexico they have an Integrated Plan including trachoma in Chiapas. There is an Integrated Project in Recife, Brazil, where three municipalities are working on several neglected diseases in a single package.
- We classify these diseases as neglected because: 1) They should have disappeared, as they can be treated, prevented and controlled, but somehow this did not happen. At present, these diseases are limited to very poor, remote and neglected areas whose population is disenfranchised. They are pending issues inherited from slavery which affect highly vulnerable groups such as indigenous communities, ethnic minorities, women and children. In the case of adults, these diseases have a high impact on the socio-economic development and productivity of affected areas.
- This is a field-wide framework. Unfortunately, we, as health professionals, are ignorant about the problem, because diseases such as onchocerciasis and schistosomiasis are unknown. It is necessary, therefore, to recover the rationale behind the issue in order to speak the same language.
- The regulation framework has been set in Resolution CD49.R19 of 2009 and there is a regional partnership already supporting the work in Brazil and Mexico around the Integrated Plans. This regional partnership includes the Global Network for Neglected Diseases, led by the Sabin Vaccine Institute, the Inter American Development Bank and the Pan American Health Organization, and focuses on managing resources contributed by donors to the Trust Fund for Neglected Diseases; the idea is that eventually countries themselves will present their own action plans and request funds for their implementation.
- PAHO has prepared many publications on neglected diseases which are available at www.paho.org/neglecteddiseases, including epidemiological information, protocols, guides and images, among others.
- An initiative named "A Call to Action: Addressing Soil-Transmitted Helminths in Latin America and the Caribbean" was recently launched through a document published in 2011 (IDB, Sabin/GNNTD, PAHO). Soil-transmitted helminthiasis is an important aspect of this work, and neglected diseases should be addressed together with soil-transmitted helminths including *Ascaris lumbricoides, Trichuris trichiura* and hookworms, given their high impact on children's growth and development. Naturally, trachoma is also included in this work plan through initiatives such as "Vision 2020, the right to sight: Eliminating preventable blindness by 2020" and "GET 2020: Alliance for the Global Elimination of Trachoma by 2020". The Pan American Health Organization, acting as the secretariat of Member States, is mandated to provide technical support to Member States in their progress towards achieving this goal. This Regional Meeting of Trachoma Elimination Programs was convened precisely as part of such support.
- Resolution CD49.R19 endorsed by the Ministers of Health classifies neglected diseases and other infections related to poverty in two main groups:
  - Group 1: Diseases with a set goal for elimination (those that can be eliminated).
  - Group 2: Diseases whose burden can be reduced with available tools (those that can be controlled).
  - Other diseases: Those requiring disease burden evaluation (mapping), as well as tools, methods and strategies to achieve their control. They are not in any of the two groups of diseases.

[5] PAHO Resolution: CD49.R19 (2009) Elimination of Neglected Diseases and other Poverty-Related Infections

- Group 1, i.e., diseases that can be eliminated, include lymphatic filariasis (elephantiasis), onchocerciasis (river blindness), trachoma (resulting in blindness), Chagas' disease, human rabies transmitted by dogs, plague, leprosy/hanseniasis; malaria; neonatal tetanus and congenital syphilis. Malaria is not considered a neglected disease as such because programs still have adequate human, technical and financial resources, but it is a poverty-related infection.
- Map 23 shows the present situation of onchocerciasis with 13 small, geographically restricted foci located in Mexico, Brazil, Venezuela, Colombia, Ecuador and Guatemala. At the end of 2010 transmission was deemed interrupted in eight foci: two in Mexico, three in Guatemala, one in Colombia, one in Ecuador, and one in Venezuela. In 2011, transmission may be interrupted in two more foci: South Chiapas and central Guatemala. Technical cooperation is still given to endemic countries with the support of the OEPA and the Carter Center to achieve elimination.

Map 23. Presence of onchocerchiasis at sub-national level, LAC, 2005–2007



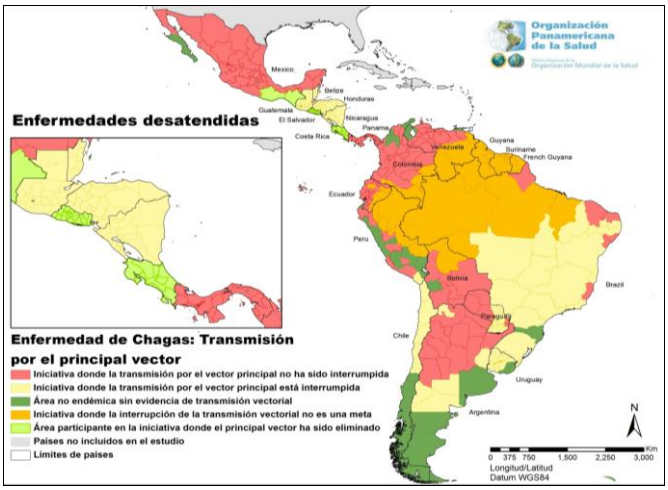
Source: PAHO 2007

- Chagas' disease is another public health problem in the Region which demands a great effort in order to attain the goals set forth in the Resolution. Countries' current efforts aim at interrupting vector-borne transmission in houses. Map 24 shows the areas where the interruption of vector-borne transmission has been recorded; however, the map has already changed, as Bolivia recently received an international evaluation visit after which interruption of in-house vector-borne transmission at the La Paz focus was certified.
- Lymphatic filariasis or elephantiasis is still present in foci located in Española Island, Haiti, Dominican Republic, Guyana and Brazil where it has already been included in an Integrated Project with soil-transmitted helminthiasis.

Map 24. Presence of Chagas' disease (all modes of transmission), LAC, 1998–2007

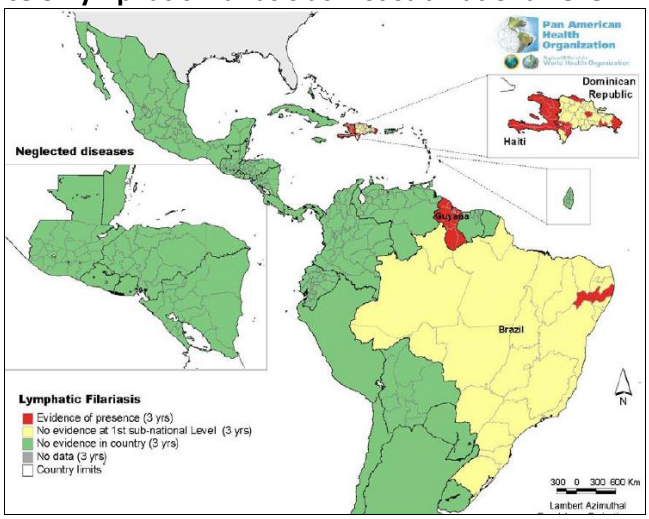
Source: PAHO/HSD/CD, Health in the Americas, Vol. 1, Washington D.C., PAHO, 2007

Map 25. Chagas' disease: Areas where vector-borne transmission has been interrupted, 2009



Source: PAHO, 2009

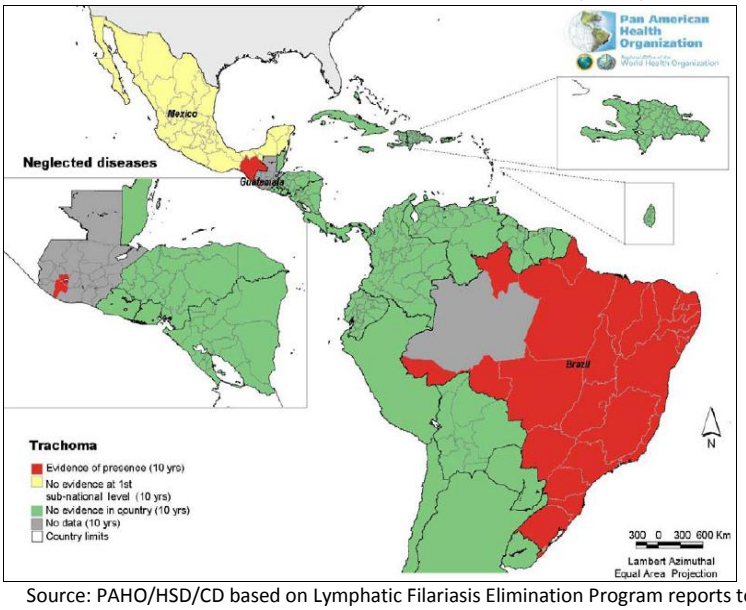
Map 26. Presence of lymphatic filariasis at first sub-national level in LAC, 2005-2007



Source: PAHO/HSD/CD based on Lymphatic Filariasis Elimination Program reports to PAHO/WHO by the Ministries of Health, 2005-2007

- Map 27 shows the presence of trachoma in the Region excluding Colombia, as it was included due to the cases detected in Vaupes only this year. The gray areas are those where no data was available yet, but their mapping has been already completed.

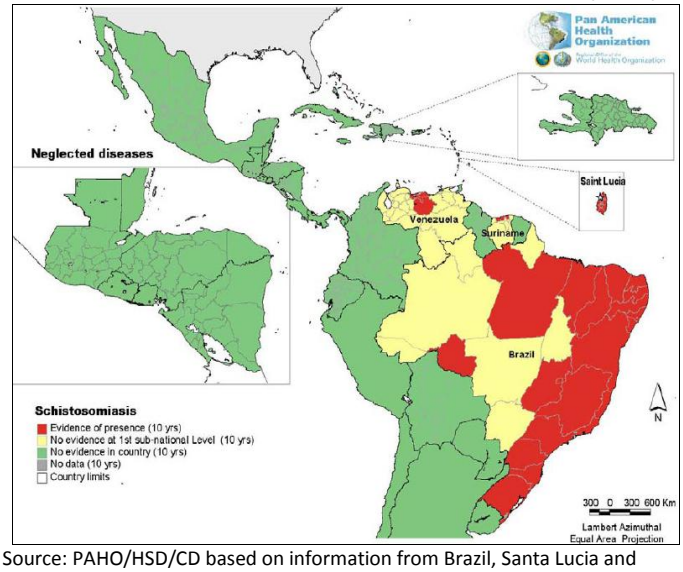
Map 27. Presence of trachoma at sub-national level, LAC, 1998–2007



Source: PAHO/HSD/CD based on Lymphatic Filariasis Elimination Program reports to PAHO/WHO by the Ministries of Health, 2005-2007

- Group 2 corresponds to those diseases whose burden can be reduced with available tools and it includes two diseases: schistosomiasis and soil-transmitted helminthiasis. The goal here is to control disease burden, but elimination is not yet contemplated.

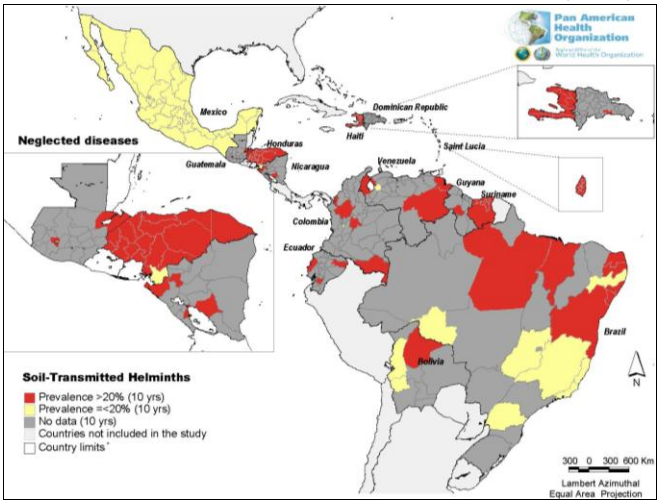
Map 28. Presence of schistosomiasis at sub-national level, LAC, 2005–2007



Source: PAHO/HSD/CD based on information from Brazil, Santa Lucia and Surinam's Ministries of Health, and Alarcón de Noya, B et al, "Esquistosomiasis mansoni en Áreas de Baja Transmisión. Caracterización Epidemiológica de los Focos Venezolanos" [Schistosomiasis mansoni in low transmission areas. Epidemiological characterization of Venezuela's foci]. Memórias, Instituto Oswaldo Cruz, Rio de Janeiro, 2002, 91(1), 5-10.

- Map 28 shows the countries where foci are located. Brazil is completing a national survey on schistosomiasis and soil-transmitted helminthiasis, which means we are going to have an updated map of schistosomiasis prevalence in Brazil. In Venezuela and Surinam, prevalence surveys have also been completed and transmission is low. In the Caribbean, the map also shows Saint Lucia. Regarding the remaining countries, no data are available so we cannot be sure there is no transmission, which is the same situation with trachoma.
- Helminthiases situation is even worse, as countries are not interested in mapping their prevalence and intensity maybe because they are parasitic infections. The problem is that just as it happens with trachoma, if we do not know what the prevalence is, we cannot know if massive anti-parasitic treatment is required and how frequently. Mapping is necessary to define action plans, but unfortunately, this map lacks information.

Map 29. Presence of helminthiases at sub-national level, LAC, 2005–2007



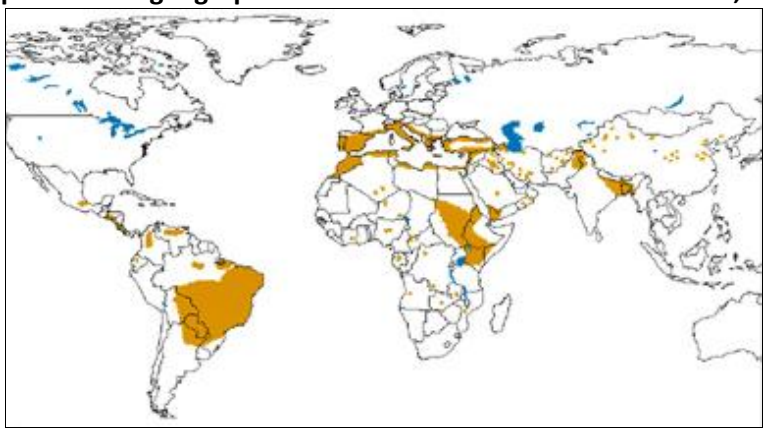
Source: PAHO, 2007

- Another neglected disease countries are beginning to cover in their plans is leishmaniasis; this disease is not classified in any of the two groups, but its management can be integrated to that of neglected diseases.

Map 30. Geographic distribution of cutaneous and mucous leishmaniasis in the Americas, 2009

Source: PAHO, 2009

Map 31. World geographic distribution of visceral leishmaniasis, 2009



Source: WHO, 2009

- Other important parasitic and infectious diseases that can be considered within the group of neglected diseases are dengue and dengue hemorrhagic fever (outbreaks), yellow fever (outbreaks, bordering countries), hydatidosis and cysticercosis/taeniasis on which little information has been gathered. The only country working against fasciolosis through massive treatment is Bolivia; there is no information about other countries. Other diseases in this group are skin diseases such as scabies, tungiasis and mycosis (Chaco). Promoting research on their diagnosis, treatment, prevention and control is a common need of countries in the Region.
- The proposal is to adopt an integrated, inter-programmatic and inter-sector approach to neglected diseases, as they are limited to few foci, they are not managed through specific or exclusive programs, and the only way to control and eliminate them is by integrating them to already existing platforms.
- The success of a program for neglected diseases depends on three factors:
  - The social determinants of health: water, sanitation, housing, economic development, among others.
  - Inter-programmatic and inter-sector integration. For example, population groups where trachoma is present also have soil-transmitted helmianthiasis, probably leishmaniasis, Chagas' disease and others. It is relevant, then, to integrate them to other programs such as EPI, vector control, etc. Additionally, social determinants are the same in many diseases. In this context we should not forget local and community participation and environmental actions.
  - Leadership from the health sector.
- The 2010 WHO annual report on neglected diseases included 17 diseases and recommended six actions which countries should develop to achieve the goals set for these illnesses:
  - Address factors related to water, sanitation and housing conditions (preventive package)
  - Reduce environmental risk factors
  - Improve the health of migrant populations both within countries (e.g., internally displaced people in Colombia) and between country borders.
  - Reduce socio-cultural and gender-related inequalities
  - Reduce poverty in NID-endemic populations
  - Implement surveillance and risk-evaluation systems for these events.
- The starting point is a comprehensive diagnosis which should include the identification of local, national and international partners; the mapping of disease prevalence; the identification of social determinants in affected communities, among others. Based on such a diagnosis, responses should not differ much: integrated health care services, inter-sector strategies (education, water, sanitation, housing, etc.).

- In this sense, three different integration approaches have been identified which may be implemented in each country simultaneously or separately:
    - Joint implementation of activities;
    - integration of existing platforms, and
    - inter-sector actions and community participation.
- The best is to implement these three approaches simultaneously. For example: joint implementation of activities with vector control teams; or integration of existing platforms such as the EPI, IMCI and nutrition programs which count with human and financial resources and are already working with communities. Let's examine each of these approaches.
- Joint implementation is feasible in areas where several diseases coexist. If maps are overlapped by layers you can find places where more than one disease is present. Synergies and economies of scale can be used for interventions. A myth that must be defeated is that people believe that they are going to be fired, or that the program is going to be finished or it will be reduced. Integration means meeting with others and maximizing limited resources to gain efficiency in order to reach the same areas. Common programs can be implemented in common places:
    - Trachoma + malaria: Communities affected by malaria are likely to be affected by other vector-borne diseases.
    - Malaria + anti-parasitic treatment against helminths: Communities affected by malaria may live in mud floor houses, which are a risk factor for soil-transmitted helminths among children.
    - Immunization + anti-parasitic treatment against soil-transmitted helminths: If soil-transmitted helminthiasis prevalence is between 20 and 50%, massive treatment with albendazole or mebendazole is administered once a year. If we are already distributing azithromycin once a year, why not give 1 to 14 year-old children 400 mg. albendazole besides the azithromycin? The platform can be used for both treatments; there is no need to go back next day to carry out a similar activity with a different team, and we also save resources. If helminthiasis prevalence is over 50%, massive treatment should be distributed twice a year with a tablet that costs between 2 and 5 cents.
- Integrating already existing platforms such as health primary care programs with multi-task house to house teams can be implemented to improve processes through joint activities instead of wasting time and resources visiting once and again communities often with contradictory messages about the same topic. This would allow better and equal access to health care services. Programs should be part of existing health care and welfare services.
- Inter-sector action and community participation are possible because all these diseases share the same social determinants: housing, water, sanitation, etc., and the health sector alone is not responsible for the response, as there are other sectors involved with more resources to implement adequate projects. If at the time of project formulation health authorities are invited to participate, the project will surely have a more integrated approach and wider impact, which will very probably grant it a higher priority. In this way, health care services, water and sanitation, education, housing, infrastructure, environment improvement and others are jointly strengthened.
- Integrated interventions against neglected diseases must focus on five main lines of action:
    - Preventive chemotherapy: Massive treatments are an example.
    - Intensive case management: This is the ideal approach for late stages in trachoma elimination programs, for example. After massive treatment, when prevalence has been reduced, intensive case management can be introduced.
    - Vector control: Flies, mosquitoes, snails (schistosomiasis), among others.
    - Access to drinking water, sanitation and hygiene.
    - Veterinary public health.

- Aspects to be integrated:
  - Mapping: It is not advisable to conduct prevalence surveys for a single disease. Prevalence and intensity surveys may be conducted for trachoma, soil-transmitted helminthiasis, Chagas' disease, malaria. In El Salvador, for example, a protocol is being drafted to conduct a national survey on helminthiasis and malaria using the same sampling design. A national survey on schistosomiasis and helminthiasis has already been completed in Surinam. Monitoring to check prevalence changes of several diseases can be conducted in the same geographical areas.
  - Treatment: We have already mentioned some examples: Azithromycin (trachoma) + Albendazole (soil-transmitted helminthiasis): one dose per year.
  - Health care: At local level personnel can be trained on the diagnosis and treatment of malaria, leishmaniasis and Chagas. If training is given on trachoma, helminthiasis can also be included. At program level we can also integrate EIP + deworming + nutrition for 12 month-old children who would be receiving MMR+Albendazole+Vitamin A.
  - Interventions addressed to social determinants: In poverty-reduction programs, for example, the number of children receiving anti-parasitic treatment once a year becomes an indicator to grant subsidies. Housing improvement programs can include mud floors improvement in helminthiasis high-prevalence areas. Water programs in trachoma and helminthiasis-affected communities, for example, may use as indicator the number of households with access to quality water.
- Finally, what we propose is to turn trachoma into a spearhead for integration. Let's address trachoma, but these communities are also affected by other equally neglected issues. The planning and implementation of a trachoma program, for example in Vaupes, should not be a one-man crusade, but the joint work of the Department's Health Bureau, the Ministry and the Colombian Institute of Health.
- Integration also involves a monitoring and evaluation process, but it does not imply the reduction or elimination of programs. Each program should have its own indicators and goals, but we should work together in the planning, intervention delivery and monitoring and evaluation.
- Planning involves a complete cycle that should respond to challenges as it advances: where are we at present? (Situation analysis); where are we heading to? (Priorities, goals and objectives); how will we get there? (Organization and management); how will we know we have arrived? (Monitoring and evaluation), and, what new problems do we have? (Prospective planning); this final question closes and re-opens the cycle.

Monitoring and evaluation

- Monitoring involves checking on how we are doing, what is missing and what needs correction in a non-stop motion. Evaluating means measuring program efficiency and its impact on communities. To do this we need indicators. Monitoring is done through process indicators, result indicators and impact indicators.
- There are three types of integrated evaluation:
  - Formative evaluation: This we apply when we plan the response to the question: Which is the best way to…? (Which is the best way to reduce TT prevalence to less than 1/1,000 people in Guatemala?)
  - Process evaluation: This is done while implementing a project in response to the question: Could we do better?
  - Summative, final or impact evaluation: This we use in response to the questions: Could we have done it better?, and, What was the real impact of our action?
- Regarding trachoma, we have to gather monthly data by municipalities on the activities we are implementing. We must know how many people affected by trichiasis need surgery and how many are actually being operated on; how many are receiving treatment; how many communities are participating in health promotion programs; how many new latrines have been installed; how many

water sources have been made available; in other words, a complete summary of all the SAFE strategy components with their corresponding goals and results.

- Each sub-national level must consolidate the data by municipalities and month, i.e., the same information flow used in any other program.
- Concerning process indicators, the Guide for trachoma control program managers includes the list of basic indicators to be monitored in the program.
- Evaluation is essential for many reasons: Not only for accountability reasons regarding the use of funds, but also because the deadline set by the Ministries of Health of the Americas is 2015, and results and impacts must be reported as programs advance. This means that about three years of hard work are still ahead given that year 2011 will be dedicated to management issues and year 2015 to information gathering for the certification process by WHO.
- We must remember that each SAFE strategy component should have an ultimate intervention goal with its corresponding annual objective. It is a three to five-year plan with goals set for the same period. To reach the goal, annual objectives are established: if the goal is to practice 1,000 surgeries, for example, the annual objective for year 1 should be 200 surgical procedures; 300 for the following year, and so on until achieving the goal of 1,000 surgeries.
- Mapping helps us to know the behavior of prevalence and to determine if massive treatment is required and its duration, as well as to record progress. This means that mapping should be done more than once, starting from the planning stage and through all the monitoring phase.
- Goals can be modified, and this we will learn from monitoring. They can be improved depending on the evolution of the situation, but circumscribed to the ultimate program goals, i.e., to reduce trachomatous inflammation – follicular and trachomatous trichiasis prevalence levels.
- We must remember that if massive treatment is to be implemented, the minimum coverage is 80% per year. We cannot divide the Plan's percentage per year. Each year, at least 80% coverage must be reached, as this works the same way as the EIP coverage goals.
- Regarding trachoma, we should validate treatment coverage. What sub-national levels notify to the national level must be verified exactly as it is done with immunization campaigns: through rapid coverage monitoring. Field visits should be programmed to carry out sampling by verification cluster and by vaccination record card to verify if 80% of individuals have been vaccinated. The same applies to trachoma. Administrative and real coverage should be compared by conducting rapid treatment coverage monitoring when massive treatment has been implemented. If the administrative coverage does not match the real one, an emergency plan must be implemented to increase coverage.
- If we are working through integrated processes, we must define indicators for such processes. If we are going to integrate azithomycin and antihelmintics administration, for example, one of the indicators would be "the number of children under 12 months of age who received MMR, the number of children who received azithromycin, the number of children who received vitamin A…", and the sum of all these indicators will show the scope of these integrated actions.
- Concerning cross-cutting interventions, it is true that the health sector is not responsible for housing or sewage budgets, but we do have responsibility in the coordination and management aimed at focusing water and sanitation actions on those communities where we know that disease indicators show the need to implement precisely this kind of interventions.
- Monitoring plans should clearly define the different variables: when, where, how, who and what to monitor. It is not different from the monitoring process conducted in other programs or projects. It is also necessary to unify criteria on the records that are going to be used and the administrative level in charge of each record. Monitoring should be applied to check on medication stocks, quality and management; to know which administrative levels are in charge of the different consolidated reports; to establish information channels and how to use them to improve and/or maintain our achievements. Additionally, we should encourage all involved parties along the whole process.

Session 5: Road map 2011-2015 towards trachoma elimination

Work teams were set up to establish the steps in the design of integrated action plans. In the case of Brazil, as an action plan already exists, its delegates helped the Colombian team to lay down the plan for Vaupes, and they also gave support to Guatemala's team. Mexico has started implementing activities as part of their action plan and now they are conducting a review of each SAFE strategy component and evaluating and setting intervention goals based on what has already been achieved to disaggregate actions. Guatemala's team worked on their integrated action plan.

Each team read the document on the methodology and carried out an exercise using its matrixes to simulate an action plan that can be used as a work tool by countries. Brazil's team worked on the definition of annual goals.

Mexico

- Although an action plan exists, different concepts were clarified, especially regarding their Ultimate Intervention Goal and the Annual Objectives.
- Concerning surgeries, it is clear that there are 136 candidates for surgery, but eight of them have not yet received any surgical treatment. Similarly, it was established that 56 patients are reluctant due to their experience with previous surgeries; 62 of them are not reluctant, despite having undergone previous surgeries. This means that more than 90% of patients had been operated on before and only eight are new candidates pending surgery.
- Based on prevalence levels, the team defined the new cases and contacts for treatment during 2011-2012.

Guatemala

- The team defined 200 surgery cases through the corresponding indicator for the next two years. The "S" goal for TT cases was set in 80%.
- Some expected results were defined, such as counting with 1 or 2 certified surgeons and the personnel required for the implementation of all the activities contemplated in the Plan.
- Other activities were also defined.
- The ultimate goal as regards the amount of antibiotic for treatments was set at 180,000 and 60,000 per year.
- Objective 1 was established as treatment for 80% of trachoma cases. Expected results include the completion of the Action Plan and its implementation including target population census.
- One of the objectives is to acquire required equipment such as scales and meters.
- Objectives and goals were defined for each of the SAFE strategy components.

Colombia

- Final figures will be defined in meetings that have already been programmed. Nevertheless, the goal for 2015 is to have complete knowledge about the national situation of trachoma in the framework of a program for neglected diseases aimed at eliminating blindness caused by trichiasis.
- The ultimate goal is to reduce TF and TI prevalence to less than 5% in 1 to 9 year-old children, and TT prevalence to less than 1/1,000 people in Vaupes.
- Regarding the "S" component, the goal is to reduce TT prevalence to less than 1/1,000 in Vaupes and to have no cases of blindness due to trachoma by 2015.
- The objective is to operate on 100% of TT patients by 2015 in identified foci with interventions every six months. While resources and contacts are mobilized, the Air Health Patrol will continue helping.

- The expected result is to have at least 8% of patients operated on so as to stop having to conduct interventions. This is vital because these will be the first surgeries to be performed and future adherence to this type of intervention must be ensured.
- Activities include identification of patients, transportation arrangements and coordination with the Air Health Patrol, among others.
- Regarding the "A" component, the idea is to reduce TF and TI prevalence to less than 5% in 1 to 9 year-old children in Vaupes.
- The objective is to distribute antibiotic treatment in 100% of the foci depending on the prevalence found and the criteria defined by PAHO/WHO, and to coordinate the activity with other public health programs.
- One of the activities should be identifying other trachoma foci to establish TF and TI prevalence in all Vaupes communities.
- Regarding the "F" component, the goal is to implement facial cleanliness and hand washing activities in 80% of the communities where foci have been detected.
- Concerning the "E" component, the goal is to develop effective strategies to promote access to water and adequate excreta disposal in all communities where foci have been detected.
- Regarding the prevalence survey, experts will be required to help in its design, as the methodology is complex.

Brazil

- The final figures defined by the Brazilian team for each component were the following:
  - S – Surgery = 6,103
  - A – Antibiotic = 4,200,000
  - F - Facial cleanliness = 600 municipalities
  - E – Environmental improvement = 600 municipalities.
- Annual Intervention Objectives were established based on the tables used to prepare the Plan as follows:
- Surgeries should not present difficulties, as 100 are programmed for the first year; 1,000 for the second; 2,000 for the third; 2,000 for the fourth, and 1,000 for the fifth and last year for a total of 6,100 surgeries (UIG for "S" component).
- The UIG for antibiotics is 4,200,000 people (not treatments); this amount will be distributed in stages and by cohorts: the first cohort of 500,000 people will be covered during the first year; another 1,250,000 people will be added to the first-year cohort of 500,000. During the third year, treatment for the first 500,000 people will be completed, it will be continued for the second cohort, and a third cohort of 1,250,000 people will be included. In the fourth year, treatment will be completed for the second cohort and it will be continued for the third cohort while a fourth cohort of 1,250,000 people will be included. The same pattern will be followed until the fourth cohort will finish treatment on the sixth year of Plan implementation.

Surgery – S

Year 1	Year 2	Year 3	Year 4	Year 5	UIG – Ultimate Intervention Goal
100	1,000	2,000	2,000	1,000	6,100

Antibiotic treatment – A

Year 1	Year 2	Year 3	Year 4	Year 5	UIG – Ultimate Intervention Goal
500,000	**1,750,000**	**3,000,000**	**3,750,000**	**2,500,000**	**4,200,000**

TAO	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number of surveys	10	25	25	25		
Cohort 1 for treatment	500,000	500,000	500,000			
Cohort 2 for treatment		1,250,000	1,250,000	1,250,000		
Cohort 3 for treatment			1,250,000	1,250,000	1,250,000	
Cohort 4 for treatment				1,250,000	1,250,000	1,250,000

- It is advised to conduct pilot testing a month before initiating the treatment. It is essential to arrange transportation and logistics required for medication management and distribution.

Final questions

1. To follow the road map for action plans or continue with the existing action plan (Mexico's case).
2. Needs identified to present to PAHO and other partners attending the meeting: Lions Clubs International and International Trachoma Initiative – ITI.

Colombia:

- They think it is important to learn more about the pilots conducted in Mexico and Brazil in order to identify difficulties they may have faced. It is clear that Mexico and Brazil's administrative structures are more federal while Colombia's structure is somewhat different, and this affects budget allotment and fundraising.
- Regarding the road map, whatever structure or integration scheme is adopted for the program, a basic platform should be adopted for the operation of primary health care. This must be the first work effort: to re-establish primary health care at least in the area where the initial focus was detected. This would also facilitate interaction with Brazil's border municipalities so multi-national strategies share the same road map.
- Additionally, it is essential that the Ministry of Social Protection sets up a program for neglected diseases, allotting a budget in those departments where there are problems with different neglected diseases.

Mexico:

- The next step for Mexico is to redesign their Plan to include recently discussed expectations, especially regarding the establishment of goals and objectives, and give the Plan a new dimension.
- To this end, they count with PAHO's technical cooperation for which they have already established a tentative schedule.

Guatemala:

- It is important to consolidate relations with local partners, mainly institutions other than the Ministry of Health that are working in the field of eye health, taking into account that some of them are more focused on trachoma.
- All Ministry sections should be involved, as up to now this has been done by stages. The time has come to have them working simultaneously.
- Next, they have to develop the program based on the SAFE strategy.
- Requests for support at international level should also be done in coordination with other local partners to gain coherence.
- Finally, they should be fully committed to Plan implementation to achieve significant progress towards eradicating blinding trachoma by 2015.

Brazil:

- The next step is to have the final approval to Plan adjustments from the Ministry, as well as budget allotment, because the Plan has to be presented to the National Health Council. They also have to present it to the epidemiologists and public health surveillance expert teams at state level to legitimate the Plan.
- The challenge now is to implement in a coordinated way the pilot program in Pernambuco and two or three other states.
- Efforts must be made to promote Lions Clubs International participation in the process. PAHO can be the mediator for the Brazil-Colombia bi-national work in Vaupes. In August, training activities will

be carried out in bordering areas to which two or three participants from Colombia could be invited. In Tabatinga, for example, such training process could also be coordinated. PAHO can help not only for trachoma-related activities, but also for other public health issues.

To this PAHO commented that as long as countries count with clear and defined Plans, the Organization can always help, but needs have to be clearly identified. PAHO backs the establishment and redefinition of Plans, but Regional programs intervene only in response to formal requests from country offices. Integrality and inter-sector approach should always be taken into account.

The invitation is to strengthen relations and contacts with participants in this meeting and to exchange experiences; through the officials in charge of the issue, PAHO country offices are always ready to offer support. Teleconferences can be used for contact and PAHO can help in this sense.

“Neglected diseases are not a big problem… we do not have millions of cases…, but it is a moral issue to fight so that people will not suffer from blindness caused by onchocerciasis, from blindness caused by trachoma, so that children will not have to face growth and development problems because they are infected by intestinal parasites…”.

“Together we can put an END to neglected diseases. Together we can win the battle. It is a moral and ethical duty!”

Annexes

Annex 1
Agenda

First Regional Meeting of Trachoma Elimination Program Managers in the Americas

Bogota, DC, Colombia
May 23-25, 2011

Convened by the Regional Program for Neglected Diseases and the Regional Program for Eye Health - PAHO under the auspices of the Global Network for Neglected Tropical Diseases and the Sabin Vaccine Institute

Agenda

Place: Hotel Bogota Regency, Carrera 7 Nº. 127A-21
Telephone No.: 57-1-625-3995

Meeting's objective

To analyze the present situation of trachoma in Latin America and the Caribbean, and define priority actions for 2011-2015 at regional and national levels aimed at reaching the goals established in PAHO Directing Council Resolution CD49.R19 for year 2015[6].

Day 1: May 23
Discussion on trachoma background at global, regional and national levels aimed at formulating elimination plans

8:00 – 8:30 am	Registration
8:30 – 9:00 am	Opening session

Session 1: Trachoma background at world, regional and national levels
Moderator: Martha Saboya, Regional Program for Neglected Infectious Diseases, PAHO/WHO

9:00 – 9:30 am	Global elimination of trachoma Dr. Juan Carlos Silva
9:30 – 10:00 am	Trachoma in Latin America and the Caribbean: Progress and challenges Dr. Juan Carlos Silva
10:00 – 10:30 am	*Coffee break*
10:30 – 11:00 am	Trachoma in Brazil: Situation, progress and challenges Manager of the Trachoma National Program, Brazil
11:00 – 11:30 am	Trachoma in Colombia: Situation and challenges as new focus in the Region of the Americas Participant from Vaupes, Colombia

[6] Elimination of new cases of blindness caused by trachoma: reducing trachomatous trichiasis (TT) prevalence to less than 1 case per 1,000 people (general population) and reducing trachomatous inflammation – follicular and trachomatous inflammation - intense (TF and TI) to less than 5% in 1-9 year-old children.

11:30 – 12:00 m	Trachoma in Guatemala: Situation, progress and challenges Manager of the Trachoma National Program, Guatemala
12:00 – 12:30 pm	Trachoma in Mexico: Situation, progress and challenges Manager of the Trachoma National Program, Mexico
12:30 – 1:00 pm	Plenary Session: Discussion on the situation of trachoma in the Region of the Americas
1:00 – 2:00 pm	***Lunch***

Session 2: General framework of the SAFE strategy and implementation of prevalence surveys as input for decision making
Moderator: Juan Carlos Silva, Regional Adviser, Program for the Prevention of Blindness, PAHO/WHO

2:30 – 3:00 pm	SAFE strategy: Rationale Norma Helen Medina Sanitary Ophthalmology Center CVE/SES - SP
3:00 – 3:30 pm	Prevalence surveys and the use of information in plan development: Brazil's experience Manager of the Trachoma National Program, Brazil
3:30 – 4:00 pm	Trachoma prevalence survey: Guatemala's experience. Manager of the Trachoma National Program, Guatemala
4:10 – 4:30 pm	*Coffee break*
4:30 – 5:30 pm	Discussion on experiences by country and opportunities for trachoma elimination in the Region

Day 2: May 24
SWOT analysis for the implementation of the SAFE strategy in LAC

Session 3. SAFE strategy components: strengths, weaknesses, opportunities and threats: components "S" and "A".

Moderator: Josue Homero Ramirez, Adviser on Social Participation and Local Development in Health, PAHO/WHO Office, Guatemala.

8:30 – 9:00 am	Presentation on the methodology for group work: Martha Saboya.
9:00 – 10:30 am	First SAFE strategy component: Surgery for people affected by trichiasis Participants' analysis on strengths, weaknesses, opportunities and threats for the implementation of this component at sub-national level

10:30 – 11:00 am	Group presentations and plenary
11:00 – 12:30 pm	Second SAFE strategy component: Massive antibiotic treatment Participants' analysis on strengths, weaknesses, opportunities and threats for the implementation of this component at sub-national level
12:30 – 1:00 pm	Group presentations and plenary
1:00 – 2:00 pm	***Lunch***

Session 4. SAFE strategy components: strengths, weaknesses, opportunities and threats: components "F" and "E".
Moderator: Jose Pablo Escobar, Adviser on Vector-borne and Neglected Diseases, PAHO/WHO Office, Colombia

2:00 – 3:30 pm	Third SAFE strategy component: Promotion of personal hygiene measures, face washing and general control Participants' analysis on strengths, weaknesses, opportunities and threats for the implementation of this component at sub-national level
3:30 – 4:00 pm	Group presentations and plenary
4:00 – 5:00 pm	Fourth SAFE strategy component: Environmental, water and sanitation improvement measures Participants' analysis on strengths, weaknesses, opportunities and threats for the implementation of this component at sub-national level
5:00 – 5:30 pm	Group presentations and plenary

Day 3: May 25
Definition of action plans to reach the goal of trachoma elimination in the Americas by 2015

Session 5. Integrated plans for trachoma elimination.
Moderator: Juan Carlos Silva, Regional Adviser, Program for the Prevention of Blindness, PAHO/WHO

8:30 – 9:00 am	Integrated plans for neglected diseases: trachoma, a window of opportunity Dr. Martha Saboya
9:00 – 9:30 am	Monitoring and evaluation of action plans: what it is and how to implement it Dr. Martha Saboya
9:30 – 11:00 m	Main action lines for country plans: each country participant will present a proposal on their action lines for 2011-2015 to achieve the goal of trachoma elimination. A guideline will be provided, and technical cooperation needs to be presented to PAHO will be identified.
11:00 – 11:30 am	Main action lines for Brazil's plan on trachoma 2011-2015

11:30 – 12:00 m	Main action lines for Colombia's plan on trachoma 2011-2015
12:00 – 12:30 pm	Main action lines for Guatemala's plan on trachoma 2011-2015
12:30 – 1:00 pm	Main action lines for Mexico's plan on trachoma 2011-2015
1:00 – 2:00 pm	***Lunch***

Session 6. Road map 2011-2015 towards trachoma elimination
Moderator: Martha Saboya, Regional Program for Neglected Infectious Diseases, PAHO/WHO

2:00 –3:00 pm	Next steps for the implementation of trachoma eliminations plans in Brazil, Colombia, Guatemala and Mexico Plenary discussion
3:00 – 4:00 pm	Identification of specific activities aimed at elimination for which countries will require technical support and cooperation during 2011-2012.
4:00-4:30 pm	Closing session.

Annex 2
List of participants

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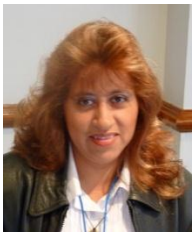 **Alejandra Martínez Meneses**	Deputy Director Disease Control Tuxtla Gutiérrez, Mexico	Unidad Administrativa Edificio C Colonia Maya, C.P. 29007 Tuxtla Gutiérrez – México	Tel: +52 961.6189.250 Ext. 44086	control.enfermedades@gmail.com
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Annex 3
Supporting documents contributed by participants:

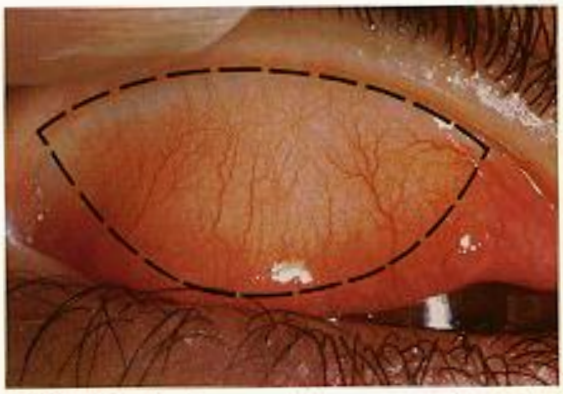
- Trachoma Grading Card
- Trachoma/trichiasis evaluation form (GUA)
- Resolve to eliminate blinding trachoma by 2020 – International Trachoma Initiative (USA)
- Tracoma, doença dos olhos (BRA) (Trachoma, an eye disease)
- Um olhar sobre o tracoma (BRA) (A view on trachoma)

CARTILLA DE GRADUACION DE TRACOMA

— Cada ojo deve ser evaluado y graduago por separado.
— Use lupas binoculares (x 2.5) e iluminación adecuada (luz de día o linterna).
— Los signos deben verse claramente para ser considerados positivos.

Los párpados y cornea se examinan inicialmente en busca de pestañas volteadas hacia adentro y opacidades corneales. Se volteo (evierte) el párpado superior para examinar la conjuntiva sobre la parte mas dura del párpado (conjuntiva tarsal).

La conjuntiva normal es rosada, lisa, delgada y transparente. Hay vasos sanguíneos profundos que corren verticalmente en toda la conjuntiva tarsal.



Conjuntiva tarsal normal (aumento x 2). Las líneas punteadas marcan el area a ser examinada.

INFLAMACION TRACOMATOSA FOLICULAR (TF): *presencia de cinco o mas folículos en la conjuntiva tarsal superior.*

Los folículos son areas redondas de inflamación, que son mas pálidas que la conjuntiva que los rodea - de color blanco, gris o amarillo. Los folículos deben ser de por lo menos medio milímetro de diámetro (como los puntos del dibujo) para ser considerados como tales.

Inflamación tracomatosa folicular (TF)

INFLAMACION TRACOMATOSA INTENSA (TI): *engrosamiento inflamatorio pronunciado de la conjuntiva tarsal que oscurece mas de la mitad de los vasos tarsales profundos normales.*

La conjuntiva tarsal aparece roja, áspera y engrosada. Usualmente hay numerosos folículos que pueden estar parcial o totalmente cubiertos por la conjuntiva engrosada.

Inflamación tracomatosa intensa (TI)

CICATRIZACION TRACOMATOSA (TS): *presencia de cicatrices en la conjuntiva tarsal.*

Las cicatrices son facilmente visibles como líneas, bandas o láminas blancas en la conjuntiva tarsal. Son brillantes y fibrosas en apariencia. La cicatrización especialmente fibrosa difusa puede oscurecer los vasos tarsales.

Cicatrización tracomatosa (TS)

TRIQUIASIS TRACOMATOSA (TT): *por lo menos una pestaña frota el ojo.*

La evidencia de pestañas removidas por crecer línea adentro, debe considerarse dentro del grado de triquiasis.

Triquiasis tracomatosa (TT)

OPACIDAD CORNEAL (CO): *opacidad corneal sobre la pupila facilmente visible.*

El margen de la pupila está opacado visto através de la opacidad. Tales opacidades corneales causan disminución significativa de la agudeza visual (menos de 6/18 o 0.3 o 20/60). Por lo tanto, debe medirse la agudeza visual dentro de lo posible.

Opacidad corneal (CO)

TF: Tratamiento tópico (Tetraciclina 1%).
TI: Tratamiento tópico. Considerar tratamiento sistémico.
TT: Referir para cirugía.

ORGANIZACION MUNDIAL DE LA SALUD
PROGRAMA DE PREVENCION DE LA CEGUERA

Con el apoyo financiero de la Fundación Edna McConnell Clark

Formulario de Vivienda

Comunidad ID: ☐☐☐ Nombre de la Comunidad: _____ Entrevistador: _____

Vivienda Numero: ☐☐☐ Nombre de el Jefe de Familia: _____ Fecha: __ __/__ __/__ __ __ __

1. Cuantos años de educacion ha completado el jefe de familia? _____ años

2. Que tan lejos esta la casa de la fuente de agua mas cercana?
   - 1 ☐ Dentro de la casa
   - 2 ☐ Patio (Jardin)
   - 3 ☐ Menos de 30 minutos caminando
   - 4 ☐ 30 minutos a 1 hora
   - 5 ☐ Mas de 1 hora

3. OBSERVAR: Hay letrina en la vivienda?
   - 0 ☐ No
   - 1 ☐ Si, dentro de la casa
   - 2 ☐ Si, fuera de la casa

4. Ha habido algun programa de educación en salud para promover el lavado de la cara?
   - 0 ☐ No
   - 1 ☐ Si
   - 2 ☐ No sabe

5. Numero de dormitorios en la casa _____

6. Cuantas personas duermen en la casa? _____

7. Esta libre la puerta de basura o desperdicios?
   - 0 ☐ No
   - 1 ☐ Si

8. Idioma?
   - 1 ☐ Kackchiguel
   - 2 ☐ Quiche
   - 3 ☐ Tzutuil
   - 4 ☐ Espanol

9. Pueblo?
   - 1 ☐ Mayan
   - 2 ☐ Mestizo
   - 3 ☐ Otro

Entrevistador: Escriba los nombres de todas las personas residentes de la casa por favor coloque el jefe de familia en la primera linea. Entre las madres antes de sus niños. Si un niño es menor de 10 años asegurese de entrar los dos digitos asignados a la madre.

#	Nombre:	Apellido:	Sexo (H/M)	Fecha de Nacimiento:	Si menos (de 1 año use meses)	Mama	Condición de la Cara de el Niño (No/Si/Ausente): Secreción Nasal	Descarga Ocular	Moscas en la Cara
01			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
02			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
03			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
04			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
05			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
06			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
07			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
08			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
09			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
10			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
11			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2
12			H_1 M_2		años meses		N_0 S_1 A_2	N_0 S_1 A_2	N_0 S_1 A_2

Formulario de Evaluacion de Tracoma/Triquiasis

ID en el Censo: _ _ _ - _ _ _ - _ _

1. Nombre completo: _____

2. Edad: _____

3. Iniciales del Examinador: _____

4. Fecha del Examen: _ _ _ _ / _ _ _ _

5. Tracoma:

	TF	TI	TS	TT	CO
a. Ojo Derecho:					
b. Ojo Izquierdo:					

0 = Ausente
1 = Presente
9 = No Se Puede Evaluar

6. Si mayor de 40 años hay evidencia de depilación de las pestañas?

a. Ojo Derecho:
- 0 ☐ No
- 1 ☐ Si
- 9 ☐ No se puede saber

b. Ojo Izquierdo:
- 0 ☐ No
- 1 ☐ Si
- 9 ☐ No se puede saber

7. Si menor de 10 años, se tomo muestra de laboratorio?

- 0 ☐ No, no se indica
- 1 ☐ No, se indica (caso del tracoma o la siguiente no ocurre en una familia diferente), pero no se hace
  - → 7a. Porque no? _____
- 2 ☐ Si
  - *Si Si,* → 7b. Caja Numero: _____
  - 7c. Etiqueta de la Muestra: Coloque la Etiqueta Aqui

8. Fue esta persona seleccionada para tomar una muestra de control?

- 0 ☐ No
- 1 ☐ Si *Si Si,* → 8a. Se tomo la muestra?
  - 0 ☐ No
  - 1 ☐ Si *Si Si,* → 8b. Caja Numero: _____
  - 8c. Etiqueta de la Muestra: Coloque la Etiqueta Aqui

Comentarios:

It begins

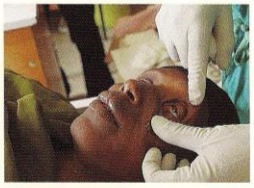
with an infection of the eyelid,

one that can be treated with antibiotics. If none are available, trachoma returns, again and again. Over time, the eyelid turns inward; the eyelashes begin to scrape the cornea. Each blink becomes unimaginably painful. Eventually, permanent blindness sets in.

This scenario is the living nightmare for more than 8 million people who have suffered for years with advanced trachoma. They are losing their vision in an agonizing way. For millions more who have the trachoma infection – most of them children – a similar fate awaits unless they're treated.

Beyond personal suffering, trachoma also devastates the well being of entire communities. Working or caring for a family becomes impossible. As the disease passes from one generation to the next, families are unable to escape a lifetime of poverty.

But trachoma can be prevented. It can be treated. And it can be stopped – for good.



This Ethiopian woman with advanced trachoma will have a simple eyelid surgery to ease her pain.

Trachoma is an infectious disease of the eye caused by a bacterium (*C. trachomatis*) that is easily spread. It can be acquired through contact with an infected person's hands or clothing, or by flies that have come in contact with the eyes or nose of someone who is infected. Because it's transmitted through close personal contact, it often affects entire families or communities.

Blinding trachoma can and will be defeated.

The solution has been identified.

All we need is the resolve to implement it.

The solution is called "SAFE," a public health strategy endorsed by the World Health Organization to stop blindness and suffering from trachoma:

S is for **surgery** to help those suffering in the advanced stages

A is for **antibiotics**, including Zithromax®, donated by Pfizer, to treat infection

F is for **facial cleanliness** to improve hygiene among populations

E is for **environmental improvement**, to lessen the likelihood of trachoma being spread.

Since 1998, the International Trachoma Initiative (ITI) has managed the donation of more than 200 million Zithromax® treatments from Pfizer for people infected with trachoma. This massive-scale distribution has occurred in 19 countries in Africa and Asia.

And to eliminate blinding trachoma globally, ITI builds partnerships and coalitions with organizations working in eye care, disease control, water and sanitation and hygiene education – all of which have a part to play in the effort.

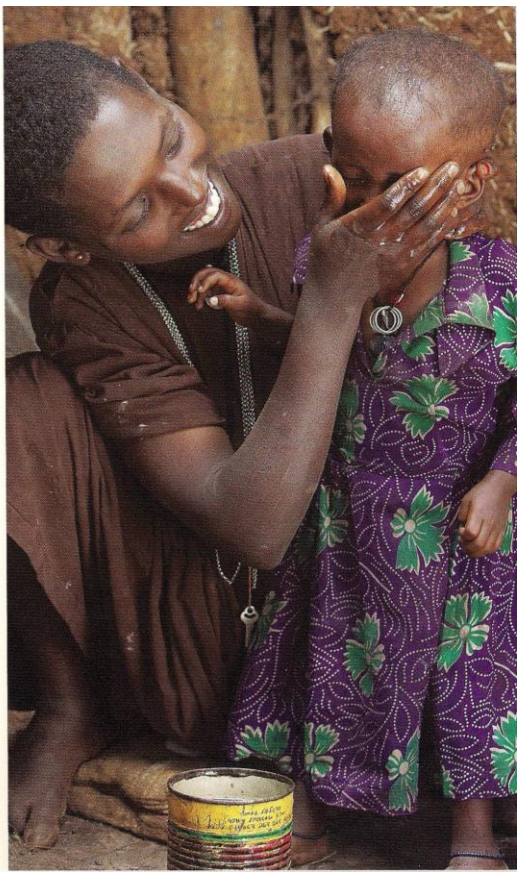
Trachoma was eliminated from the United States and Europe with improved sanitation and public health efforts. Five countries in which ITI works are on track to eliminate trachoma soon. **We can replicate this success elsewhere in the world – with your help.**

Will you take

at least one action

to help stop blinding trachoma?

- Visit the ITI website, **trachoma.org**, to learn more
- Partner with ITI if you're an organization working in global health or water/sanitation improvement
- Connect with ITI by emailing **iti@taskforce.org** and stay up to date with the latest news on trachoma
- Encourage governments and lawmakers to commit the funds needed to implement the SAFE strategy.



Facial cleanliness is key to preventing trachoma.

Trachoma is highly endemic in Ethiopia, where these children live.

Trachoma is the world's leading cause of blindness from infection.
Yet it is preventable and treatable.
The challenge is to reach people who suffer from it or are at risk.

iTi
International Trachoma Initiative

325 Swanton Way
Decatur, Georgia USA 30030
1-800-765-7173
www.trachoma.org

A program of
The Task Force for Global Health

Pfizer

Front cover: a woman in Vietnam after simple eyelid surgery to ease the pain of advanced trachoma.


ATENÇÃO
*Em muitos casos pode não ter sintomas
*Se você convive com uma pessoa que está com Tracoma, é importante que você também seja examinado
*Procure um posto de saúde
PREVENÇÃO É A SOLUÇÃO!!!!
Em caso de tratamento compareça regularmente ao posto de saúde para acompanhamento
RETORNO DIA ___/___/___
LOCAL ________________
CENTRO DE OFTALMOLOGIA SANITÁRIA
CVE CENTRO DE VIGILÂNCIA EPIDEMIOLÓGICA "Prof. Alexandre Vranjac"
CCD Coordenadoria de Controle de Doenças
SECRETARIA DA SAÚDE
GOVERNO DE SÃO PAULO
imprensaoficial
TRACOMA
DOENÇA DOS OLHOS

O TRACOMA

Tracoma é uma doença dos olhos, causada pela bactéria *Clamidia tracomatis*, que ocorre principalmente nas crianças. O tratamento é fácil, mas se não for tratado, com o passar do tempo, pode prejudicar a visão.

BACTÉRIA

OS SINTOMAS

Os olhos podem ficar:

*vermelhos e irritados

*lacrimejantes e com secreção

*coçando

*com sensação de areia

*intolerância à Luz

TRANSMISSÃO

Ocorre por meio da secreção dos olhos com tracoma

*de uma pessoa para outra

*objetos contaminados,
•lápis, borracha e caneta

•toalhas de rosto e de banho

• roupas de cama e lenços

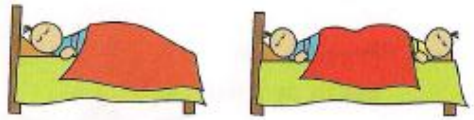
*É mais fácil passar de uma pessoa para outra em ambientes coletivos como escolas e creches

A PREVENÇÃO

*lavar as mãos e o rosto com sabonete várias vezes ao dia

*não coçar os olhos

*Procure dormir sozinho na cama
Quando precisar dormir com mais pessoas, ficar com a cabeça para lados diferentes



* Não usar toalhas ou lenços de outras pessoas

FOLDER TRACOMA INFANTIL 2008 MR COREL 18072008

Cuidados com a visão

- Cuidado com objetos pontiagudos para não ferir os olhos como: lápis, tesoura, faca, plantas pontiagudas ou com espinhos.
- Não brinque com fogos de artifícios, produtos químicos e inflamáveis.
- Cuidado com respingos de líquido leitoso das plantas e produtos químicos, lave imediatamente os olhos.
- Evite olhar diretamente para o sol.
- Evite luz muito intensa ou muito fraca quando estiver estudando ou trabalhando.
- Não utilizar colírios e pomadas oftalmológicas sem prescrição médica.

Importante!

Saneamento básico, acesso a água potável e destino adequado do lixo, são medidas muito importantes para evitar o tracoma.

Produzido em janeiro de 2010

www.saude.gov.br/svs
www.saude.gov.br/bvs

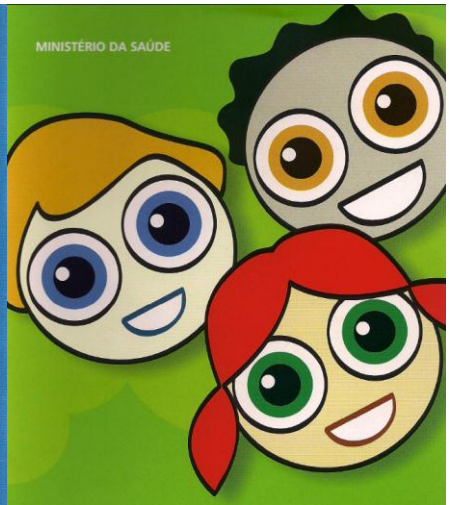
e-notifica
notifica@saude.gov.br

disque saúde
0800.61.1997

disque notifica
0800.644.6645

SUS
Secretaria de Vigilância em Saúde
Ministério da Saúde
BRASIL UM PAÍS DE TODOS GOVERNO FEDERAL

MINISTÉRIO DA SAÚDE



Um olhar sobre o TRACOMA

Brasília/DF

O tracoma

Tracoma é uma doença dos olhos, causada pela bactéria *Chlamydia trachomatis*, que ocorre principalmente nas crianças.
O tratamento é fácil e se não for realizado pode prejudicar a visão.

Sinais e sintomas

Os olhos podem ficar:

- vermelhos e irritados

- lacrimejantes e com secreção

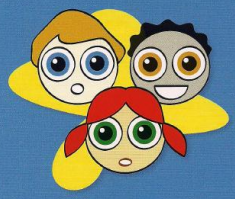
- coçando
- com sensação de areia

- com intolerância à luz

Atenção: em muitos casos pode não apresentar sintomas.

Transmissão

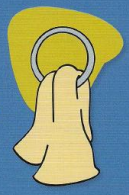
Ocorre por meio da secreção dos olhos com tracoma:



- de uma pessoa para a outra, principalmente em ambientes coletivos como escolas e creches

- de objetos contaminados, lápis, borracha e caneta

- de roupas de cama e lenços



- de toalhas de rosto e de banho

Prevenção

- lavar as mãos e o rosto várias vezes ao dia

- não coçar os olhos

- não usar toalhas ou lenços de outras pessoas

- evitar dormir na mesma cama com várias pessoas
- quando precisar, dormir com a cabeça para lados diferentes

Participants in the First Regional Meeting of Trachoma Elimination Program Managers in the Americas, Bogota, May 23 – 25, 2011
(Photograph: Rodrigo Restrepo G. – 2011)

Photograph on front page: Girls from El Charco municipality, Department of Nariño, Colombia
(Photograph: Rodrigo Restrepo G. – 2010)

Pan American Health Organization
Regional Office of the World Health Organization