

*executive committee of  
the directing council*



**PAN AMERICAN  
HEALTH  
ORGANIZATION**

*working party of  
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## **PLAN OF ACTION FOR THE ELIMINATION OF CONGENITAL SYPHILIS**

**Congenital syphilis is a serious but preventable condition which could be eliminated in the Latin American and Caribbean countries by utilizing existing health services. The document presents the technical background for congenital syphilis prevention as well as the regional proposal for the eventual elimination of congenital syphilis as a public health problem in the Americas. The Secretariat seeks the Executive Committee's guidance regarding: (a) the technical validity of the proposal; (b) the desirability and feasibility of establishing elimination of congenital syphilis as a regional target; and (c) the participation of PAHO's Member States in the initiative according to the prevalence of syphilis in pregnant women, coverage and quality of antenatal care, and status of prevention and control programs for sexually transmitted diseases, including HIV/AIDS.**

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## **EXECUTIVE SUMMARY**

**Congenital syphilis is a sentinel health event which reflects failure of both disease control programs and the antenatal care systems in a country or local health area. Its prevention is possible and practically achievable with technology available in the existing health infrastructure. The incidence of congenital syphilis in countries that reported to PAHO between 1987 and 1992 ranged from 2.2 to over 250 per 100,000 live births. Among selected populations of pregnant women in a group of Latin American and Caribbean countries, over 90% of reported syphilis seroprevalence rates ranged between 1.7% and 7.4%.**

**In 1994, the XXIV Pan American Sanitary Conference called for the development of a regional plan of action for the elimination of congenital syphilis as a public health problem in the Americas.**

**The Plan's purpose is to reduce significantly the incidence of congenital syphilis in the Region in the next five years through a series of incremental measures designed to provide appropriate treatment to infected pregnant women and reduce syphilis prevalence in women of childbearing age. These measures will reduce maternal transmission of syphilis to the fetus and other adverse pregnancy outcomes, while strengthening existing health services.**

**Measures to achieve the objectives of the Regional Plan are as follows:**

- Develop or strengthen congenital syphilis surveillance systems;**
- Improve testing procedures for the detection of maternal and congenital syphilis;**
- Strengthen antenatal care services' capacity to provide appropriate diagnosis and treatment for syphilis in pregnant women.**

**The Plan will be part of a broader regional HIV/AIDS/STD program that proposes to strengthen existing health services and their ability to interrupt the transmission of sexually transmitted disease (STD) pathogens, including HIV, through health promotion and prevention, early detection and appropriate clinical management, and surveillance.**

**Implementation of the Plan calls for a multiprogrammatic approach that will require participation by programs for maternal and child health, HIV/AIDS/STD, laboratory services, and other health services. The integration of services must occur at both national and local levels. The plan offers the opportunity for increased training and utilization of allied health professionals. Moreover, it will identify curable STDs, which represent a costly yet preventable burden to individuals and governments as a high priority for attention in the Region.**

## 1. Problem Statement

Congenital syphilis is a serious but preventable disease that affects between 160,000 to 240,000 newborns in the Region each year.<sup>1</sup> Unlike HIV and other viral sexually transmitted diseases (STDs) that infect neonates, congenital syphilis can be prevented and treated effectively in utero. The timely diagnosis and treatment of pregnant women and the avoidance of reinfection, in addition to the interventions to prevent primary infection, are important tools in this process.

Congenital syphilis can be considered a sentinel health event because it reflects failure of both disease control programs and the prenatal care services provided to a population. However, the data on congenital syphilis are sparse because currently it is not a reportable disease in many countries, and frequently cases are not diagnosed, particularly asymptomatic cases and most cases resulting in stillbirth. Deficient data notwithstanding, there is enough information to indicate that the disease is an increasing problem and that more data should be gathered (1).

Among selected populations of pregnant women in a group of countries, over 90% of reported syphilis seroprevalence rates ranged between 1.7% and 7.4% (Table 1). The incidence of congenital syphilis in countries that reported the disease to PAHO between 1987 and 1992 ranged from 2.2 to over 250 per 100,000 live births.<sup>1</sup> Current data from Brazil shows syphilis seroprevalence rates among pregnant women ranging from 2.3% to 11.5%. Brazilian authorities estimate that 133,450 cases of congenital syphilis occurred in 1992 (2), affecting over 3.0% of the 4,384,635 births in the country. Even in the United States, there were 4,398 cases of congenital syphilis reported in 1991 (3). Yet the U.S. Centers for Disease Prevention and Control (CDC) has found that in many areas of the country, where some of the highest incidence rates of acquired adult syphilis are found, the reporting of congenital syphilis is deemed deficient. A recent assessment reveals a similar situation in Jamaica, where 7.0% of women attending prenatal care services in the public sector tested positive for syphilis (2). These seroprevalence rates reflect the value of systematic testing in prenatal care services throughout the Region.

According to a World Bank report (4), the burden of sexually transmitted diseases, including HIV/AIDS, in terms of disability adjusted life years (DALYs) in Latin America and the Caribbean, is the second highest in the world, with an estimated

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<sup>1</sup> Estimates of congenital syphilis cases were based on currently available syphilis seroprevalence data (Table 1), where over 90% of the reported prevalence rates ranged between 1.7% and 7.4%, and the given assumption that effectiveness of current antenatal screening programs ranges between 40% and 80%. Therefore, congenital syphilis rates should be in the range of 1.0% to 1.5% of the near to 16,000,000 births occurring each year in the Americas.

6.6 million DALYs lost in 1990. While it is still difficult to measure the burden in terms of cost, the improved services and surveillance that are objectives of the proposed regional plan can help to capture more precise cost data (4,5).

Using as reference the CDC case definition, the regional plan defines a case of congenital syphilis as the birth product (i.e., stillbirth or live birth) of a woman with serological evidence of syphilis who was not adequately treated during pregnancy (6). Since congenital syphilis reflects maternal syphilis in the community, it might also be an indicator of the extent to which adult syphilis is being correctly or incorrectly managed, diagnosed, and reported in a community.

## **2. Recent Regional Efforts to Prevent Congenital Syphilis**

In 1991, PAHO supported the Pan American Seminar on Congenital Syphilis, which was convened in Buenos Aires by the Argentine chapter of the Latin American Union against Sexually Transmitted Diseases. The purpose of the meeting was to establish the basis for an epidemiological study of congenital syphilis in the Americas. The next step was the organization of a Technical Advisory Working Group for the Elimination of Congenital Syphilis in the Americas, convened at PAHO in August 1992. The Working Group was multiprogrammatic, reflecting the required coordination of existing programs in the Region for the success of the proposed elimination. Participants reached consensus regarding the integration of proposed activities into existing PAHO programs, such as the Maternal and Child Health and Population Program, the HIV/AIDS/STD Program, the Program for Women, Health, and Development, and the Health Services Development Program.

At the Conference of Ministers of Health of the Ibero-American Countries held in Brasilia from 24 to 27 May 1993, the Ministers reviewed a recommendation stressing the need for a broad proposal for the elimination of congenital syphilis, in addition to the recommendations on HIV/AIDS prevention and control. Concomitantly, WHO developed an informal technical group and convened a meeting in Geneva in October 1993. Finally, the XXIV Pan American Sanitary Conference in 1994 called for the development of a proposal for the elimination of congenital syphilis in the Region of the Americas, to be presented to the Directing Council for review at its next meeting in 1995.

While health professionals considered initiatives to target maternal and congenital syphilis in developing countries, the U.S. Centers for Disease Control and Prevention responded to a resurgence of congenital syphilis in the United States by rewriting its guidelines for the prevention and treatment of congenital syphilis, including a new, more sensitive case definition (7). These new CDC guidelines are designed to improve surveillance of congenital syphilis and to help in the development and evaluation of

programmatic measures to address the problem. Standardized and improved surveillance data will also permit an accurate assessment of the financial impact of congenital syphilis on the health care system.

The CDC is collaborating with PAHO and WHO in developing approaches for the prevention of maternal and congenital syphilis and for enforcing surveillance and interventions. One notable collaborative project is the WHO/PAHO/CDC Syphilis Serology Proficiency Testing Program, which has led to efforts to develop a sentinel laboratory surveillance program for syphilis. Many countries of the Region, including Brazil, Chile, Jamaica and the United States, have already developed guidelines and adopted other measures for congenital syphilis control that ultimately will lead to its elimination.

Multi-agency coordination will be essential to the success of the Plan insofar as the activities proposed will be integrated into maternal and child health efforts, HIV/AIDS/STD prevention and control efforts, and the health systems' promotion and information management programs.

### **3. Goal, Purpose, and Objectives**

The goal of the Five-Year Regional Plan is to establish a sound basis regionally for the eventual elimination of congenital syphilis as a public health problem in the Americas. Progress toward the goal will be measured by the number of countries implementing effective plans of action for the elimination of congenital syphilis. The purpose of this initiative will be to support countries in their efforts to significantly reduce the incidence of congenital syphilis and in a few countries to actually achieve the goal of elimination by the year 2000. Progress towards achieving this end will be measured by the incidence rates of congenital syphilis and completeness of reporting.

The goal and purpose stated above will be achieved through the implementation of a series of measures aimed at producing the following outcomes:

- Strengthened congenital syphilis detection, surveillance and case investigation, measured by the proportion of mothers tested at delivery and the proportion of congenital syphilis cases investigated;
- Early and appropriate treatment of infected pregnant women and their partners, measured by prenatal coverage, the proportion of pregnant women tested, and the proportion of infected women and partners treated;
- Reduced syphilis prevalence in women of childbearing age, measured by seroprevalence rates in pregnant women;

- Treatment and follow-up of infected newborns, measured by the proportion of congenital syphilis cases treated and provided follow-up.

The goal, purpose, and outcomes of the proposed plan of action are in accordance with the recommendations made at the Summit of the Americas in Miami in December 1994. The Heads of State of the Hemisphere expressed a commitment to provide universal access to a basic package of health services, including STD testing and treatment and timely, adequate prenatal care. Moreover, the Plan responds to the Strategic and Programmatic Orientations for PAHO, 1995-1998.

Finally, the Plan for congenital syphilis elimination will become part of a broader Regional HIV/AIDS/STD Program that proposes to strengthen existing health services and their ability to interrupt the transmission of sexually transmitted disease pathogens through screening, case-finding, effective treatment of cases and sex partners, health promotion and prevention, community participation, and active surveillance.

#### **4. Strategies and Methods**

##### **4.1 *Develop and/or strengthen congenital syphilis surveillance systems by:***

- Adopting a more sensitive case definition for congenital syphilis, similar to that proposed by CDC, that includes all birth products, live births, or stillbirths born to mothers with serologic evidence of syphilis at time of delivery who were not treated or were inadequately treated during pregnancy;
- Promoting policies to ensure that all women delivering in health facilities are tested for syphilis at the time of delivery;
- Promoting reporting and case investigation of all congenital syphilis cases.

***Rationale and Procedures:*** Active surveillance is a key element of the plan of action, insofar as it enhances a health system's capacity to detect, document, and take action on information about congenital syphilis cases. As such, countries should establish a congenital syphilis surveillance system to record and follow the children of mothers testing positive for syphilis at the time of delivery.

Testing mothers at the time of delivery will allow for the monitoring and treatment of infants and their mothers with syphilis. The case investigations will provide information pertinent to the quality of prenatal care and reasons for non-utilization of prenatal care services.

Data show that although some countries in the Region perform syphilis tests at the time of delivery, generally it is done in certain cases only, such as when the woman received no previous prenatal care or had a history of syphilis. In order to apply effectively the proposed case definition of congenital syphilis, systematic testing at delivery must be standardized and considered the norm. Moreover, testing of all women at delivery will enhance the system's capacity to detect failures in the reproductive health care services by identifying women who complete their pregnancies without serologic testing for syphilis and/or without appropriate treatment.

#### **4.2 *Improve syphilis testing procedures of pregnant women by:***

- Promoting the use of simple and rapid tests that provide same-day results in health facilities;
- Supporting field testing of new rapid tests to allow expanding syphilis testing to areas with limited laboratory services.

***Rationale and Procedures:*** This plan recommends that serologic tests for syphilis (STS) in pregnant women be performed at least twice: during prenatal care and at the moment of delivery. Since the fetus may be infected as early as the ninth week of gestation, the first test should be done in the first trimester of pregnancy. If this is not possible, the woman should be tested during her first prenatal visit. Women thought to be at high risk for STD should be rescreened in the final trimester of pregnancy. Insofar as lesions of congenital syphilis depend on the gestational age at the time of the infection, opportune detection of maternal syphilis is of paramount importance to prevent irreversible malformations and even miscarriage. The plan recommends implementing prenatal care testing procedures so that each time a pregnant woman is tested, the results and appropriate treatment are available as soon as possible, ideally before the patient leaves the health facility. Such an outcome can be measured by an increase in the number of women who receive their results and are prescribed treatment during the prenatal care visit when testing was performed. This requires using rapid tests, such as the Rapid Plasma Reagin (RPR) or the TRUST test, which are macroscopic flocculation tests that do not require heating of sera or use of a microscope.

Rapid tests, using plasma obtained by "fingerstick," are currently being field tested. Recent results of a study conducted by CDC (unpublished data) have shown this method to be very sensitive and reasonably specific. If these results are confirmed by further field trials, the "fingerstick"/rapid test method could allow expansion of prenatal testing to women who currently lack access to syphilis testing.

The Plan recommends the establishment of laboratory guidelines that ensure immediate reading of RPR results as standard procedure. Providing same-day test results



will contribute to the goal of reducing missed opportunities for treatment of pregnant women. Currently some countries are replacing most VDRL tests with the RPR test to reduce the number of patients not receiving adequate and timely treatment (2). With respect to testing at the time of delivery, the Plan recommends testing the mother rather than the infant, because the results of the latter are often inconclusive and may be misleading. In this way, reporting of congenital syphilis cases will be based on serological and/or epidemiological evidence of untreated or inadequately treated maternal syphilis at the time of delivery. In fact, it would be ideal that no baby or mother leave the hospital until syphilis test results are known.

Finally, the results of tests performed at the time of delivery will serve as indicators of the adherence to prenatal screening and treatment guidelines and utilization of prenatal care services. In addition, it will enhance the health system's ability to detect and treat infected infants and investigate all cases, including syphilitic stillbirths.

**4.3 *Strengthen the capacity of prenatal care services to provide appropriate clinical management of maternal syphilis by:***

- Developing guidelines and promoting adequate treatment of seropositive pregnant women and their partners in prenatal care services;
- Promoting prenatal care-seeking behavior among women of reproductive age;
- Training of allied health professionals in detection and clinical management of syphilis;
- Recommending treatment of both mother and child in all cases of congenital syphilis.

*Rationale and procedures:* The probability that an untreated infected mother will transmit syphilis to her offspring at birth is approximately 70% (8). Syphilis-associated stillbirths are rarely reported in the Region, despite the fact that perinatal death is a result of nearly 40% of pregnancies among women who have untreated syphilis (9). Congenital syphilis research in Brazil, Argentina, and the United States has established the close relationship between the absence of or inadequate prenatal maternal care and congenital infection with syphilis.

A 1992 Brazilian study shows that 21 out of 913 women (2.3%) at the Hospital de Clínicas de Porto Alegre tested positive for syphilis at the time of delivery (10). The percentage of women who received prenatal care was greater among those with positive test results (93.6%), indicating that the quality of prenatal care was poor. A 1993 report from the Brazilian Ministry of Health concluded that from the estimated 4,384,635

pregnant women in 1991, 153,462 were believed to be seropositive for syphilis, resulting in an estimated 133,450 cases of congenital syphilis in one year (11).

A study that surveyed 5.0% of the births in large urban areas in Argentina in 1993 found that 3.0% of the women surveyed at delivery had positive syphilis serology (12). The congenital syphilis rate was 1.2% while the neonatal death rate was 1.8%. Thirty-three percent of the women surveyed did not consider prenatal care visits important, while another 5% did not understand the need for prenatal care.

In the United States, a 1992 study of maternal characteristics in congenital syphilis cases in an urban area in Florida identified untimely and inadequate prenatal care as the factor most closely associated with the incidence of congenital syphilis (13). The authors concluded that *quality* of prenatal care was an important factor: 75% of the women studied received prenatal care but were neither tested nor treated for syphilis.

Researchers in Texas found that the "failure of women to seek appropriate prenatal care and of the community to provide ethnically appropriate care and medically adequate diagnosis management was responsible for most of the cases of congenital syphilis" (14). This study revealed that U.S.-born Hispanic women with no prenatal care were 25 times more likely to have an affected infant; foreign-born Hispanic women with no prenatal care were 30 times more likely than their counterparts with prenatal care to have an affected infant.

Regarding the adequacy of treatment for syphilis with benzathine penicillin G, numerous studies have shown the efficacy of 2.4 million units of penicillin, regardless of gestation period (15). Moreover, penicillin is effective in preventing transmission to the fetus and treating infection in the fetus (16).

It is recommended that all patients testing positive for syphilis receive counselling in order to obtain voluntary consent for HIV testing, although the efficacy of penicillin therapy in women with co-infection with HIV is still unknown. It should be noted that non-penicillin therapies are not considered adequate treatment for maternal and congenital syphilis (17).

Countries should institute or strengthen partner notification and treatment policies to prevent reinfection of women who have tested positive for syphilis and have been treated during prenatal care. These policies should be incorporated into existing HIV/AIDS/STD services.

## **5. Proposed Activities**

### **5.1 PAHO Activities**

PAHO will carry out the following activities during the five-year plan period. The accomplishment of each will be measured according to verifiable indicators.

#### **5.1.1 *Assist in the development of country plans of action for the elimination of congenital syphilis***

- Creation of program guidelines and collaboration in the preparation of country-specific plans of action;
- Development and field testing of training materials for strategic planning and program management, focusing on congenital syphilis elimination;
- Provision of training and dissemination of material on strategic planning and program management, focusing on congenital syphilis elimination.

#### **5.1.2 *Develop quality assurance networks for syphilis testing at the country level and intercountry reference laboratories***

- Support for the development and maintenance of quality standards for testing;
- Provision of training on syphilis testing methods;
- Promotion and facilitation of the linkage of national reference laboratories with the WHO/PAHO/CDC Syphilis Serology Proficiency Program;
- Provision of direct technical assistance to countries as needed.

#### **5.1.3 *Implement regional guidelines for congenital syphilis surveillance and indicators for monitoring syphilis testing and treatment during prenatal care***

- Development of regional guidelines for congenital syphilis surveillance and for monitoring syphilis detection and treatment during prenatal care;
- Provision of training on congenital syphilis surveillance and monitoring prenatal care services and provide other direct technical cooperation to countries as needed;

- Creation and maintenance of a regional surveillance and information system to monitor the progress of countries toward the regional goal of congenital syphilis elimination;
- Promotion of operational research on testing technology improvements on health service delivery, including social, cultural, and economic barriers to utilization of services.

## ***5.2 Activities at the Country Level***

### ***5.2.1 Develop a national plan of action***

- Obtaining the information needed to assess and monitor congenital syphilis in departments, districts and/or municipalities of the country, as appropriate;
- Preparation of a national plan of action for elimination of congenital syphilis;
- Provision of training and dissemination of material on strategic planning and program management to district and municipal level personnel, including NGOs;
- Implementation of strategic planning and program management for the allocation of human and financial resources to congenital syphilis elimination at district and municipal levels.

### ***5.2.2 Establish a national quality assurance network for syphilis testing linked to the PAHO/WHO/CDC regional network***

- Revision and/or establishment of national quality standards for syphilis testing;
- Provision of training of national, district, and municipal laboratory personnel on quality standards and methods for syphilis testing;
- Establishment of linkage of district and municipal laboratories to a national syphilis serology proficiency program, and linkage of national reference laboratories to the PAHO/WHO/CDC regional network.

### ***5.2.3 Implement national guidelines for congenital syphilis surveillance and for monitoring syphilis detection and treatment during prenatal care***

- Development of national guidelines for congenital syphilis surveillance and for monitoring syphilis detection and treatment during prenatal care;

- Provision of training of district- and municipal-level health care workers on congenital syphilis surveillance and monitoring prenatal care services;
- Establishment and maintenance of a national surveillance and information system to monitor country-wide progress toward the national goal of congenital syphilis elimination and periodic reporting to the regional surveillance and information system.

## 6. Resources

In order to implement the proposed plan, commitment on the part of PAHO and its Member States is essential. PAHO will seek financial resources from the UN agencies and programs and others working on child survival and reproductive health issues to support the development and implementation of the plan at the country level. A budget for the PAHO/AMRO regional activities is presented in Table 2.

The budget took into account the current status of ongoing regional activities (1995) and identified the additional resources needed to develop the plan's regional activities between 1996 and 1999.

A detailed country budget should be elaborated by each Member State for implementation of national plans; on average, PAHO Member States will need to obtain or allocate approximately US\$ 100,000 per year for the implementation of the plan.

## 7. Definitions

*Congenital Syphilis Case:* Every birth product (live birth or stillbirth) born to a mother with reactive syphilis serology at delivery that was not adequately treated during pregnancy.

*Adequate Treatment for Syphilis during Pregnancy:* Treatment with two doses of benzathine penicillin G 2,400,000 UI/IM, administered one week apart, which adds up to 4,800,000 UI/IM. For late acquired syphilis an additional dose is administered one week later, which adds up to 7,200,000 UI/IM.

*Elimination of Congenital Syphilis as a Public Health Problem:* Elimination will be certified when, using the above case definitions, incidence rates of congenital syphilis (including stillbirths) are found to be equal to or below 0.5 cases per 1,000 births. The rationale for defining elimination as stated above is derived from two expected outcomes that should be achieved in the process of eliminating congenital syphilis: (a) over 95% of infected pregnant women should be detected and treated during pregnancy; and (b) prevalence of syphilis during pregnancy should be reduced to under 1.0.

Table 1

**Syphilis Seroprevalence in Pregnant Women,  
Selected Countries, by Year**

Country/Region	Year	Source	Rate %	(n)
<b>Brazil<sup>1</sup></b>				
- Recife	1987	Barros Lima Clinic	11.5	(200)
- Sao Paulo	1990	Adolfo Lutz Inst.	5.6	(360)
- Sao Paulo	1991-1992	Paulista Maternity	5.6	(3,664)
- Sao Paulo	1992	Vila Nova Maternity	2.7	(757)
- Sao Paulo	1993	Adolfo Lutz Inst.	4.1	(1,622)
- Porto Alegre	1991	P. A. Hospital Clinic	3.5	(949)
- Porto Alegre	1992	P. A. Hospital Clinic	2.3	(913)
<b>Chile<sup>1</sup></b>	1993	MOH PNC clinics	1.9	(401,081)
<b>Jamaica<sup>1</sup></b>	1993	MOH PNC clinics	7.0	(29,410)
<b>Panama<sup>1</sup></b>	1994	Magally Ruiz Center	1.7	(940)
<b>Paraguay<sup>2</sup></b>				
- Asuncion	1992	B.O.H. Health Center	6.1	(314)
- Asuncion	1992	N.M. Health Center	5.7	(651)
<b>Anguilla<sup>3</sup></b>	1991-1994	MOH	2.3	(128)
<b>Bahamas<sup>3</sup></b>	1992-1994	MOH	5.7	(8,149)
<b>Br. Virgin Is.<sup>3</sup></b>	1991-1994	MOH	1.7	(541)
<b>Grenada<sup>3</sup></b>	1991-1994	MOH	3.3	(2,208)
<b>Guyana<sup>3</sup></b>	1991-1994	MOH	7.4	(21,815)
<b>Montserrat<sup>3</sup></b>	1992-1994	MOH	3.5	(405)
<b>St.Kitts and St.Nevis<sup>3</sup></b>	1991-1994	MOH	0.7	(3,600)
<b>St. Lucia<sup>3</sup></b>	1991-1994	MOH	5.0	(6,215)
<b>St. Vincent<sup>3</sup></b>	1991-1994	MOH	5.8	(7,166)
<b>Trinidad and Tobago<sup>3</sup></b>	1991-1994	MOH	1.9	(59,034)

<sup>1</sup> Figures for Brazil, Chile, Jamaica, and Panama from Congenital Syphilis Rapid Assessments, 1995.

<sup>2</sup> Vera, Elisa, et al. 1992. The First Study of Pregnant Women in Paraguay: Prevalence of HIV, HBV, and Syphilis. Asunción: Instituto de Investigaciones en Ciencias de la Salud.

<sup>3</sup> Figures for Caribbean countries (except Jamaica) from quarterly surveillance reports, PAHO, 1991-1994.

**TABLE 2**

**Plan for Congenital Syphilis Elimination  
PAHO/AMRO Budget for Regional Activities 1996-1999**

	Budget Element	1996	1997	1998	1999
<b>1. COUNTRY PLANS OF ACTION</b>					
Develop. program guidelines & collaborate in country plans					
Temporary assistance	030	18,000	18,000	18,900	18,900
3 STC-month/year	040	24,900	24,900	26,145	25,145
Development & field testing of training materials					
Contractual services	390	40,000	40,000	-	-
Provision of training & dissemination of materials					
Thirty participants/year	820	40,000	40,000	42,000	42,000
Printing & distribution	550	8,000	8,400	8,820	9,261
<b>SUBTOTAL OBJECTIVE 1</b>		<b>130,900</b>	<b>131,300</b>	<b>95,865</b>	<b>96,306</b>
<b>2. QUALITY ASSURANCE NETWORKS</b>					
Sup. develop. & maintain. of quality standards					
2 STC-month/year	040	16,600	16,600	17,430	17,430
Purchase of tests	550	10,000	10,500	11,025	11,576
Provision of training on syphilis testing methods					
Thirty participants/year	820	40,000	40,000	42,000	42,000
Promot. of linkage between nat labs & WHO/PAHO/CDC Prog.					
1 STC-month/year	040	8,300	8,300	8,715	8,715
Six participants per year	820	8,000	8,000	8,400	8,400
Purchase of tests	550	10,000	10,500	11,025	11,576
Provision of training on syphilis testing methods					
Thirty participants/year	820	40,000	40,000	42,000	42,000
Promotion of linkages between nat labs & WHO/PAHO/CDC Prog.					
1 STC-month/year	040	8,300	8,300	8,715	8,715
Six participants per year	820	8,000	8,000	8,400	8,400
Purchase of tests	550	10,000	10,500	11,025	11,576
Direct technical assistance as needed					
4 STC-month/year	040	33,200	33,200	34,860	34,860
<b>SUBTOTAL OBJECTIVE 2</b>		<b>126,100</b>	<b>127,100</b>	<b>133,455</b>	<b>134,558</b>
<b>3. REGIONAL SURVEILLANCE GUIDELINES</b>					
Development of regional guidelines for congenital syphilis surveillance					
2 STC-month/year	040	16,600	16,600	17,430	17,430
Printing and distribution of materials	550	10,000	10,000	10,500	10,500
Provision of training on congenital syphilis surveillance					
Thirty participants/year	820	40,000	40,000	42,000	42,000
Develop. and maintain. of regional surveil. system					
Temporary Assistance	030	36,000	36,000	37,800	37,800
Printing and distribution of materials	550	8,000	8,400	8,820	9,261
Promotion of operational research					
National contracts (6 x year)	390	30,000	31,500	33,075	34,729
<b>SUBTOTAL OBJECTIVE 3</b>		<b>140,600</b>	<b>142,500</b>	<b>149,525</b>	<b>151,720</b>
<b>GRAND TOTAL REGIONAL ACTIVITIES</b>		<b>397,600</b>	<b>400,900</b>	<b>378,945</b>	<b>382,584</b>

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