

Regional Strategic Plan for elimination of Yaws from South-East Asia Region

2012-2020



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Regional Strategic Plan for elimination of Yaws from South-East Asia Region

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Executive summary

Yaws is caused by *Treponema pertenu*, non-venereal spirochetes. It is a contagious disease primarily affecting the skin and bones. It is transmitted by direct person-to-person contact and no extra-human reservoir is reported. The disease occurs mainly in children below 15 years predominantly in poor, rural and marginalized populations in isolated pockets in Africa and Asia. This is perhaps why it is said that **“yaws begins where the road ends”**.

About 50 million people in 46 countries were treated from 1952 - 1964 reducing the prevalence by more than 95% using a single dose of injection benzathine penicillin. In the South-East Asia Region, India, Indonesia and Timor-Leste continued to be yaws-endemic after the initial efforts.

WHO-SEARO developed the Regional Strategy for eradication of yaws (2006-2010) to scale-up yaws elimination from the Region by 2012. India declared elimination of yaws by 2006. Indonesia intensified the yaws elimination activities and Timor-Leste gradually initiated activities.

WHO-SEARO organized a two-day informal consultation to review the progress in elimination of yaws in SEA Region in Dili, Timor-Leste on 20-21 October 2011. Participants from India, Indonesia and Timor-Leste as well as experts participated. This consultation was called to review the progress, identify problems including possibility of using azithromycin as a strategy for elimination. Following two days in depth discussion, the regional strategy for eradication of yaws (2006-2010) was revised and also the target to eliminate yaws was extended to 2020.

The participants made recommendations to the yaws-endemic countries and WHO to move forward with a revised regional strategic plan, 2012-2020. WHO Strategy developed at Morges, Switzerland in March 2012, to eradicate yaws using azithromycin for the treatment of case and contacts (2012) has been incorporated in this revised regional strategic plan to hasten the process of elimination of yaws from the SEA Region.

1. Background

Yaws is caused by spiral-shaped, non-venereal spirochetes, *Treponema pertenue*. It is a contagious and debilitating disease of humans, primarily affecting the skin and bones if not detected and treated early. The organism multiplies very slowly (once every 30-33 hours) in humans and experimentally-infected animals. No extra-human reservoir is reported. It is transmitted by direct person-to-person contact with exudates or serum from infectious yaws lesions. The incubation period is about 9-90 days (average 21 days). The disease can occur in all age-groups, but occurs mainly in children below 15 years. It is one of the neglected tropical diseases (NTD) related to absolute poverty with sub-standard, overcrowded living conditions without adequate water and use of soap leading to poor hygienic and sanitation conditions. The disease occurs predominantly in poor, rural and marginalized populations in parts of tropical and sub-tropical Africa and Asia. Thus, it is a **poverty-related disease** of disadvantaged people living in remote and isolated areas. This is perhaps why it is said, “**yaws begins where the road ends**”.

The persistence of yaws even in the 21st century indicates how a disease which was on the verge of eradication during the 20th century got lost in the radar of national and sub-national health planners. A single dose of injection benzathine penicillin to cases and their contacts is still found to be cost-effective in curing and interrupting the disease. Yaws can be eliminated / eradicated if sufficient efforts are directed towards active case detection, treatment and surveillance as well as community awareness. Sustained political commitment, allocation of required resources and strong partnerships as seen in several countries including India is essential to eliminate the disease.

Overall community development and improvement in the environment would hasten the process of yaws elimination and lead to significant economic benefits to the affected communities apart from mitigating the sufferings of those affected, especially in children. In advanced stages, yaws can cause disfiguring and crippling disabilities and deformities. Thus, there are weighty social, economic, humanitarian and ethical considerations to intensify efforts towards yaws elimination at the regional level and eradication at the global level.

2. Disease distribution and progress in elimination/eradication

In the 1950s, yaws was believed to be endemic in some 46 countries, mainly in tropical and sub-tropical Asia, Africa and South America. In 1952 these endemic countries embarked upon treponema control campaigns or projects with the assistance of WHO and UNICEF. In 1954 the World Health Assembly resolution to eradicate yaws gave a boost to the campaign. The main strategy was to plan active case detection surveys in all the affected villages and treatment of cases and contacts with a single dose of injection of benzathine penicillin. These campaigns continued from 1952 to 1964 and resulted in a significant reduction of yaws prevalence. About 50 million people were treated and the burden reduced to 2.5 million by 1964. The reduction was more than 95%. In 1995, WHO estimated that there were 2.5 million cases of endemic treponematoses (mostly yaws) and 460 000 new cases per year (1).

However, such intensified efforts were not sustained to eradicate the disease since the programme was integrated with primary health care services. In addition, changing health priorities, decentralization and emergence of other competing infectious diseases with high morbidity and mortality affected yaws case finding and treatment activities. As a result, yaws remained a forgotten disease in some isolated pockets in some countries in Africa and Asia. However, the World Health Assembly resolution in 1978 re-emphasized the importance of implementing and integrated treponematoses control programme following resurgence of yaws in many countries.

In the South-East Asia (SEA) Region, yaws continued to be a public health problem in two countries - Indonesia and Timor-Leste since India declared elimination of the disease (zero new case) in 2006.

In India, yaws was previously reported from 51 districts in 10 states mainly seen among tribal populations. The yaws control programme launched in the 1950s and upgraded to a Yaws Eradication Programme (YEP) in 1997. Following concerted and intensive efforts the annual reported cases of yaws steadily declined in India with no cases reported since 2004 onwards. Since then, sero-surveillance of 1-5 year old children to verify transmission of infection was continued. Since transmission was interrupted as evidenced by sero-survey, the programme is planning to go ahead to declare India free from yaws in the near future.

The National Leprosy and Yaws control programme in Indonesia restarted reporting of yaws cases from 2001 onwards. As per the available reports, the programme was reporting a gradual increase in the number of new cases as a result of renewed case finding and improved surveillance. The number of new cases increased from 2112 (2001) to 6631(2011). Most of these were from 33 high-burden districts mainly from five high-burden provinces in the eastern part of Indonesia. Among the yaws endemic countries in SEA Region, Indonesia bears the highest burden of yaws.

In Timor-Leste, yaws is believed to be endemic in at least six of the 13 districts, though accurate information is not available. An estimated 1000 cases may be prevalent in the country since it is bordering the highest yaws burden province (NTT) of Indonesia. Since 2011, Timor-Leste is showing increased interest to initiate yaws elimination activities through an integrated approach by combining elimination of lymphatic filariasis and control of soil transmitted helminthic infections.

3. Clinical presentation and treatment

The early ulcerative skin lesions teaming with spirochetes are transmitted via direct skin-to-skin contact or through breaks in the skin from trauma, bites or excoriations. An injury or cracks on the leg is the most common site of entry.

The first symptom appears three or four weeks after acquiring the spirochete. A papule is formed at the area of entry of the spirochete. The papule grows gradually and develops a punched-out centre covered with a yellow crust (ulcer). Lymph nodes in the area may become swollen and tender. This first papule may take three to six months to heal. Secondary soft, gummy (nodular) lesions/growths then appear on the face, arms, legs and buttocks. These growths may also occur on the soles of the feet, forcing the patient to walk in an odd and characteristic fashion balancing on the sides of the feet, the so-called “crab-yaws” (hyper-keratosis).

The gummy growth gradually involves and disrupts the bones of the face, the jaw and the lower leg. Ulcers around the nose and on the face may be very mutilating and disabling and lead to prolonged morbidity and loss of productivity.

Yaws remains limited to the skin in the majority of patients, but early bone and joint involvement can also occur. Although most yaws lesions disappear spontaneously, secondary bacterial infections and scarring are common complications. After 5-10 years, 10% of untreated patients develop destructive lesions involving the bones, cartilage, skin and soft tissues leading to severe disabilities and consequent social stigma.

The diagnosis is primarily based on clinical findings. The 'case definition' of yaws is as follows:

A suspected case: A person who is or was living in a known yaws-endemic area (past or present) presenting with the following suspected clinical lesions:

- ulcer with scab,
- papillomas,
- palmar/plantar hyperkeratosis (thickening).

A confirmed case: A suspected case is confirmed clinically and supported by positive rapid plasma reagin (RPR) or venereal disease research Laboratory (VDRL) test or treponema pallidum haemagglutination assay (TPHA). However, RPR and VDRL tests are not specific for yaws diagnosis and may not differentiate yaws from syphilis. TPHA test needs sound laboratory support and is expensive.

Of the available three tests, RPR is found to be cost-effective and simple since it can be done with a finger prick and the results are read immediately.

Since RPR/TPHA tests are not always available in a field situation, it is advisable to go for clinical diagnosis by ruling out other skin diseases. Survey team members/health workers should be adequately trained in differential diagnosis of skin diseases. Wherever possible, at least 10% of the confirmed cases may be validated by district / province / central doctors / supervisors. Such a validation exercise would assist in improving the quality of diagnosis and reduce over-diagnosis.

3.1 Classification of yaws lesions

The classification of yaws lesions is described in the handbook on Endemic treponematoses (2)

Type	Clinical lesions
Infectious	<ol style="list-style-type: none">1. Papilloma2. Multiple papillomata3. Plantar and palmar papillomata4. Ulcers Other early skin lesions (macules, papules, micropapules, nodules, plaques)
Non-infectious	<ol style="list-style-type: none">1. Hyperkeratosis2. Bone and joint lesions

3.2 Definition of Contact

A contact is one who is living with an infectious yaws case/s or has frequent contact with the infected person. A contact for the purpose of yaws elimination includes family members, close neighbours, school classmates or close playmates.

3.3 Treatment

Yaws can be cured with a single dose of intramuscular injection of long-acting benzathine penicillin.

Dose for adults: 1.2 million units.

Dose for children (below 10 years): 600 000 units.

The most severe side-effect of long-acting penicillin is hypersensitivity in reaction which may be fatal. It is advisable to perform a skin test for reaction prior to injection which should be given by doctors/ trained nurses at the health facilities. Anti-allergic drugs to manage severe allergic reactions should be kept ready.

3.4 Tetracycline and erythromycin

In case of an extremely rare episode of penicillin sensitivity, adults can be given tetracycline 500mg four times a day for 14 days and children can be

administered erythromycin 250mg twice a day for 14-day. Since it is 14 days treatment, operational and patient compliance rate might not be satisfactory.

3.5 Azithromycin

An oral, single-dose treatment with azithromycin has emerged as a new public health intervention in yaws elimination/eradication programmes. Based on the results of the randomized controlled trial in Papua New Guinea and Ghana, a single dose of azithromycin (2 gram) is found to be very effective in curing yaws disease.(3,4) The outcome is more or less equal to long-acting benzathine penicillin. The recommended dose is 30mg/kg (maximum 2 gram) in a single-dose given by mouth.

Experience from the trachoma elimination programme (5) indicates that mild and transient adverse reactions (such as nausea, vomiting and diarrhoea) occur in about 10% of recipients. These adverse events can be managed in the field situation/ nearby health facilities. Communities should be well informed in advance about the possible adverse events which are mild and manageable.

Positive lessons learnt from using azithromycin in trachoma control programmes for mass treatment with minimum or mild side effects (4) and high efficacy (from PNG and Ghana trials) and ease of administration in yaws, WHO recommended its use in the yaws elimination/eradication programme(6). However, while using azithromycin in the field situation, one should be aware of the occurrence of resistance.

3.6 Treatment failure

A yaws case with active lesions administered either a single dose of injection benzathine penicillin or a single-dose oral azithromycin (2 gram), the clinical lesion(s) did not regress even at four weeks after the treatment. Such cases are labeled as treatment failures or treatment non-responders. Such cases should be investigated for other skin diseases and given appropriate treatment.

4. Factors favouring yaws elimination

Since experience gained from India has shown that yaws can be eliminated as a disease and sustained, other endemic countries in the Region could achieve the same if renewed and concerted efforts are made.

Some of the following factors would favour elimination:

- Single-dose oral azithromycin is effective for community-wide treatment of populations at risk
- Long acting benzathine penicillin is still effective and may be used as an alternative
- Humans are the only reservoir of infection
- Infection spreads only through close bodily contact
- Distribution of yaws is focalized and at-risk population may be defined
- RPR is found to be useful in field conditions to confirm interruption of transmission.

5. The goal and objectives

5.1 Goal

To eliminate (complete interruption of transmission) yaws in the endemic countries by 2016 and thereafter at the SEA Regional level by 2020 (7).

5.2 Target

To achieve elimination by reaching zero new yaws cases(interruption of transmission) for three consecutive years in all the endemic districts in Indonesia and Timor-Leste by 2016 (7).

5.3 Confirming interruption of transmission of yaws

This will be followed by clinical and serological surveillance for three consecutive years to confirm that a country has achieved complete interruption of transmission. Sero-surveillance among children 1-5-years old

for three consecutive years should show negative results. Independent evaluations certify a country as free from yaws and the Region achieves yaws elimination by 2020.

The term eradication of yaws is used at global level. Eradication is a global goal and it will be achieved when all the endemic countries have achieved interruption of transmission by 2020(8).

6. New treatment policies (6)

In WHO recommended to revise the old treatment policies existing since 1950. The main objective of the new approach is to rapidly achieve interruption of transmission by more aggressive case and contact coverage in all the endemic villages with an ultimate target to get rid of the disease.

Instead of different levels of prevalence rate to decide about treatment coverage policies, prevalence of clinically active yaws cases in children under 15 years of age should be used. The prevalence threshold is 5% to define the population to receive treatment.

WHO has recommended the following two levels

- **Total community treatment (TCT)** is practiced when prevalence of clinically active yaws is 5% or more.
- **Total targeted treatment (TTT)** is implemented when prevalence of clinically active yaws is below 5%.

However, the programme should choose TCT irrespective of prevalence rate considering the cost of repeated surveys, follow up visits and targets set to achieve zero new cases.

The programme should develop guidelines and implement the activities accordingly.

7. Implementation steps

7.1. Mapping of yaws-endemic pockets/clusters

The programmes may undertake mapping of all the known endemic areas (past and present) for estimating the population at risk, number of villages/sub-districts/districts) for proper planning and implementing yaws elimination activities.

The programme may develop mapping based on historical data published, available reports from the health centers/district health office, and geographical contiguity with known endemic villages/sub-districts etc.

As done in mapping in the lymphatic filariasis elimination programme, areas may be given the following colours

- endemic (red)
- non-endemic (green)
- Uncertain (grey).

All past endemic areas (villages/sub-district/district) should be subjected to comprehensive case detection activity to identify cases, if any. Effective surveillance should be established in villages which reported new cases during the last three years. Sero-survey results of children less than 15 years old, especially in previously known yaws-endemic villages but now not reporting cases may also be considered for mapping endemicity.

7.2. Estimate drug requirement, logistic needs and funding

Once mapping is complete, estimate population at risk requiring preventive chemotherapy and expected number of new cases likely to be detected in one year with two to three rounds of active search. Calculate requirement of azithromycin at 30mg/kg body wt. (maximum 2 grams) to procure and transport to endemic villages (health centres) where survey is to be implemented. Supportive drugs and other logistics need to be estimated and procured.

Estimated budget requirement should be calculated based on the mapping, villages/population to be covered, treatment policies, requirement of drugs(unless donated), transportation cost, capacity building, surveys, advocacy and monitoring etc. as per the local situation.

7.3. Mobilize political commitment at various levels and mobilize/ensure resources

The success of any public health programme particularly programmes aimed at elimination or eradication depends on high political commitment and adequate resources. Yaws has not received sufficient priority or policy support. Hence, strong policy and administrative support and professional commitment from health staff will have to be ensured till the goal is achieved. A periodic advocacy meeting with policy-makers and stakeholders focussing on the availability of cost-effective interventions and stressing the fact that the disease is eradicable with some efforts and resources is essential.

7.4. Build partnership and intersectoral collaboration

Since yaws is associated with poverty, adequate water and sanitation facilities and environmental improvements are needed and, related sectors/ ministries should be involved. Community-based organizations/ village level committees should be brought together to assist in yaws elimination activities. Yaws elimination activities should be linked to the Millennium Development Goals (MDG) to bring in local governments and partners for support.

7.5. Build technical capacity and drug management and logistics

Considering that yaws is localized and the number of annual new cases is comparatively small, the best approach will be to use the existing health infrastructure and identify staff in the general health system at all levels, including village health workers/community volunteers, and train them to work primarily for the yaws programme. They should be responsible for planning, supervision and monitoring of the yaws programme activities, including active case detection, prompt treatment of cases and contacts, ensuring timely supply of drugs and equipment and mobilization of resources from the central and local governments.

Medical officers and health workers should be trained to detect cases and provide treatment to them and their contacts. They should also maintain appropriate clinical and treatment records. Training material for each category of health personnel should be developed.

7.6. Mobilize community participation

The successful implementation of the programme will be dependent on community involvement and support. This should be mobilized through advocacy with local community leaders and IEC initiators targeting key groups such as the media as well as the general public. All areas identified as yaws-endemic should be targeted for community awareness to promote self-reporting and availing of free treatment at all health facilities.

Use of case recognition cards, posters/billboards in local languages and messages conveyed by word-of-mouth and traditional methods such as folk songs should be prepared and used.

The involvement of influential persons such as local community leaders, religious leaders, teachers, healers and health workers, grass root-level workers of other departments including education, forests and revenue would help in case-finding, self-reporting and seeking treatment.

7.7. Plan and carry out active case-finding and treatment campaigns

Case-finding campaigns/camps conducted through house-to-house or school surveys by trained teams should be initiated at least twice a year (or more) until all the endemic villages reach zero new case. Diagnosis will be based on clinical findings using the case definition as defined under “diagnosis and treatment”. Wherever possible, RPR/TPHA may be used to confirm the diagnosis.

Yaws surveillance mobile teams support the national programme manager in planning, training and monitoring implementation of programme activities at the provincial, district and sub-district levels. Such an approach accelerated the elimination of yaws in India. Similar teams may be established depending upon available resources.

100% of the known endemic villages and more than 90% of at-risk population should be covered. Passive case finding and self-reporting should be encouraged.

Villagers should know well in advance the dates of active case search, purpose of the survey, drugs distributed and their side-effects and the benefits the community members get. As far as possible, this should be done through local village leaders/school teachers/influential people.

A good preparation of the community results in good coverage and treatment compliance.

Treatment of cases and contacts

Before administering medicines, the community should be made aware of the possible side-effects.

The drug of choice is a single dose of azithromycin (2 gram). It is administered to all the new cases and contacts/at risk population as described earlier. This is to be done twice a year depending upon the prevalence until there is no new cases. It should be a campaign / camp approach wherever required. School children are covered in schools. The treatment coverage should be almost 100%. Treatment should be supervised to achieve maximum compliance rate.

Wherever azithromycin is not indicated, injection benzathine penicillin (long-acting) is to be considered.

Azithromycin can be delivered by health workers / volunteers after appropriate training. But, benzathine penicillin has to be administered by doctors/trained nurses of the nearest health facilities.

Post-treatment follow-up should be planned four weeks after the last round of treatment to identify any treatment failures and missing cases and target population. Treatment failures should be re-examined to rule out other skin diseases and treat them accordingly.

7.8. Provide supportive supervision and monitor activities

An effective monitoring and supervision mechanism should be established to support the peripheral workers and review their activities. The supervision should be supportive and should include on-the-job training.

The establishment of a high-level National Task Force (NTF) would be very useful for advocacy, resource mobilization, for undertaking periodic reviews and monitoring the progress in implementation and to advise on annual plans of action. The NTF should meet at least once a year to give directions to the national programme. Independent teams may undertake yaws elimination monitoring at micro-level to validate reported information.

A simplified information system integrated with the general health service should be developed and followed. Prompt action on feedback from higher levels has to be ensured.

7.9. Carry out surveillance and operational research

Yaws should be included in the integrated disease surveillance programme in the affected countries. Operational research should be considered an essential requirement for monitoring the progress as well as improving the programme efficiency related to activities such as case-finding and treatment.

7.10. Organize external review missions followed by certification

Once a country attains the zero new case level, a mechanism to validate the zero case status should be undertaken annually through expert appraisals for three years. If this status is maintained for three years, the country should consider certification of elimination with technical assistance from WHO. An external team should carry out independent evaluation through field visits and record reviews in order to validate the progress, and certification should follow.

For purposes of certification, sero-survey in children less than five years is recommended to demonstrate evidence of complete interruption of transmission. However, results of the sero-survey should be carefully interpreted in view of the concomitant presence of congenital syphilis.

The yaws-endemic countries are encouraged to revise their national guidelines and also develop guidelines for sero-surveillance.

7.11 Indicators

The indicators for monitoring progress would include:

- Proportion of villages in endemic districts which undertook case-finding activities;
- Number of new cases detected per endemic village;
- Proportion of new cases and contacts treated among those detected; and
- Serological prevalence in children aged 1-5 years.

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Annex 1

Report on the Informal Consultation on elimination of yaws from South-East Asia Region

1. Introduction

Since yaws continued to be endemic in Indonesia and Timor-Leste after India declared elimination of yaws as a disease in 2006 and to scale-up yaws elimination activities in South-East Asia Region (SEAR), WHO-SEARO organized a meeting of experts and yaws programme managers / focal points for India, Indonesia and Timor-Leste in July 2006 in Bali, Indonesia. At the meeting, the participants finalized the draft of the Regional Strategy for Eradication of Yaws 2006-2010. The consensus was to eradicate the disease by 2012 from the Region. The yaws endemic countries agreed to accord priority to yaws-case finding and treatment activities to reach the regional target by 2012.

India is moving ahead to declare the country free from yaws soon. Indonesia has gradually intensified advocacy efforts of district governments, mobilizing resources and case finding and treatment with injection benzathine penicillin depending upon the funds available. Timor-Leste to considers yaws elimination as one the important health issues.

Since elimination of yaws was not possible in Indonesia and Timor-Leste except in India in near future, WHO-SEARO decided to hold an informal consultation to discuss revision of the target date and to scale up elimination of yaws. The consultation was held in Dili, Timor-Leste on 20-21 October 2011 with the following objectives:

- Review ongoing yaws elimination efforts in the Region;
- Discuss strategies to intensify yaws elimination;
- Identify approaches to mobilize community participation of non-health sectors for improving living conditions of endemic population groups;

- Mobilize resources and identify integrated approaches; and
- Revise current Regional Strategy for eradication of yaws, 2006-2010

2. Opening session

Dr Jorge Mario Luna, WHO Representative to Timor-Leste on behalf of Dr Samlee Plianbangchang, Regional Director, South-East Asia Region, welcomed the participants, explained the aims and objectives of the meeting and introduced the participants. He gave a summary of progress in yaws elimination in India, Indonesia and Timor-Leste. He stated, “yaws is a localized problem in only three of the countries of the Region, causing morbidity specifically among children from poor families and economic loss in affected countries. Cost-effective tools are available to detect and cure the disease, making it possible for elimination/eradication. WHO SEARO took the initiative to develop a Regional Strategy for Eradication of Yaws at a meeting held in Bali in 2006. Dr Luna further emphasized that success of yaws elimination or eradication depends on sustained high political commitments and adequate resources. In spite of best efforts by the Member states, yaws has not received sufficient priority or policy support. Hence, strong policy and administrative support and professional commitment from the health staff will have to be ensured till the goal is achieved.

Mr Basilio Martin Pinto from Timor-Leste on behalf of the Ministry of Health welcomed the participants. He stated that the health officials of Timor-Leste are aware of yaws or frambusia in the country especially in the border districts of Indonesia. However, the government could not move forward due to several other priorities and issues. He hoped that the experts in this consultation will thoroughly discuss all the issues and make recommendations to build sustained political commitment, accord priority and allocate or mobilize funds to achieve elimination of yaws in near future.

3. Technical session

Mr Baszilio Martins from the Ministry of Health was the Chairman and Dr Sukhvir Singh, Joint Director, National Centre for Disease Control, Delhi, India was the Rapporteur.

3.1 Global progress in eradication of yaws

Dr C.R. Revankar Medical Officer, Neglected Tropical Diseases Control, Department of Communicable Diseases, WHO-SEARO summarized the presentation of Dr Kingsley Asiedu, Medical Officer, Buruli ulcer and yaws, Department of Control of Neglected Tropical Diseases, WHO-HQ since he could not join. In his presentation, Dr Kingsley touched upon the current global situation of yaws worldwide (Africa, Asia, Western Pacific and Americas). As per the available scant information, the following countries are considered to be endemic for yaws.

- **Africa:** Benin, Cameroon, Central Africa Republic, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Ghana, Sierra Leone, Togo.
- **South-East Asia:** India(eliminated yaws), Indonesia and Timor-Leste.
- **Western Pacific:** Papua New Guinea, Solomon Islands and Vanuatu.
- **Americas:** No information. Last report was the elimination of yaws in Ecuador in 2003.

Though data are not available from previously known endemic countries, the following countries reported yaws cases between 2008 and 2010 (Table1).

Table: 1: Number of yaws cases reported by endemic countries

Year of case reporting	Country	No of cases
2010	Cameroon	167
2009	Democratic Republic of Congo (DRC)	383
2009	Congo	649
2010	Indonesia	6031
2010	Ghana	20525
2008	Papua New Guinea	23000

Dr Kingsley mentioned that SEA Region is revising the Regional Strategic Plan 2006-2010 in this meeting to move forward to eliminate yaws from Indonesia and Timor-Leste since India has already eliminated yaws. The Western Pacific Region was planning for elimination from Vanuatu and Solomon Islands. Africa is in the process for further evaluating the yaws situation in previously endemic countries.

Azithromycin, a broad-spectrum antibiotic was found to be very effective in curing yaws cases in a Papua New Guinea (PNG) trial. The results were equivalent to benzathine penicillin. A single dose of azithromycin (30mg/kg body wt.) was adequate to cure the clinical lesions. A similar trial is being conducting in Ghana. WHO may consider discussing further with experts to explore framing a new strategy for global eradication of yaws using azithromycin.

3.2 Regional progress in elimination of yaws

In his presentation, Dr Revankar highlighted the success and failures of yaws control in the past and progress in the SEA Region. He summarized the historical information from 1952 to 1964. During this period, WHO and UNICEF launched the global endemic treponematoses control programme (TCP), which became a real success story by treating 50 million people in 46 countries, reducing the overall prevalence by more than 95%. The control strategy subsequently changed from a vertical programme to be integrated into the basic health services. The goal of eradication was not attained and a number of foci remained. By the end of 1970s, a resurgence of the endemic treponematoses had occurred in many areas of the world.

He further stated that politicians and health decision makers were under the impression that the disease is under control and not a priority anymore. The economic impact was not evident since mostly children are affected. Internal and external funding decreased significantly. Added to this, the decentralization process in Indonesia affected the yaws control programme after 2000.

Currently, India, Indonesia and Timor-Leste are the only known endemic countries for yaws in the SEA Region. Since India eliminated yaws in 2006 as a disease, it is moving forward to declare the country free from yaws in the near future. There is need to intensify yaws elimination activities in Indonesia and Timor-Leste. While India was reporting zero new case, Indonesia reported an increasing trend. Though Timor-Leste is not reporting cases, WHO estimates around 500-1000 cases in six of the 13 districts. The country representatives would discuss these issues in greater details.

The main strategies finalized meeting in Bali in 2006 were advocacy, community mobilization and health promotion, active case finding and treatment of cases and their contacts with a single dose of injection benzathine penicillin until zero new cases are reported for a minimum of three years. Sero-surveillance of children under five years for at least three years after reaching zero new cases to verify interruption of transmission among the children should be conducted.

While concluding, he reiterated that at least on humanitarian and human right grounds and to protect children and communities from this disfiguring disease in the 21st century, the endemic Member states should make all efforts to get rid of the disease with the revised and achievable target. Yaws elimination should be linked to the MDGs 2015 and considered as an index of country development.

3.3 Country presentations

India

Dr Sukhvir Singh, Joint Director, National Centre for Disease Control, Delhi, made a presentation on elimination of yaws from India - learning lessons and the way forward. He recapitulated the history of yaws in India. Yaws was non-existent in India until 1887, when cases were first noticed among tea plantation labourers in Assam. It later spread to geographically

contiguous and predominantly tribal areas in central India involving the states of Bihar (including Jharkhand), Madhya Pradesh (including the present state of Chhattisgarh), Maharashtra, Orissa and Uttar Pradesh, where it remained endemic.

Dr Singh stated that resurgence was reported in Madhya Pradesh in 1977. In 1981, National Centre for Disease Control (NCDC, formerly NICD) undertook a rapid survey to assess the yaws situation and a new focus in Dang district of Gujarat was detected. In 1985, NCDC collected information using mailed questionnaire method from the country. As per this survey, Andhra Pradesh, Madhya Pradesh, Orissa, Maharashtra and Tamil Nadu were reporting cases at a low level.

The yaws eradication programme (YEP) was launched as a centrally-sponsored scheme in 1996-1997 in Koraput district of Orissa, which was subsequently expanded to cover all the 51 yaws-endemic districts in 10 states (Andhra Pradesh, Orissa, Maharashtra, Madhya Pradesh, Chhattisgarh, Tamil Nadu, Uttar Pradesh, Jharkhand, Assam and Gujarat) during the Ninth Plan period.

He further explained that the programme basically targeted reaching the un-reached tribal areas which are at risk of the disease.

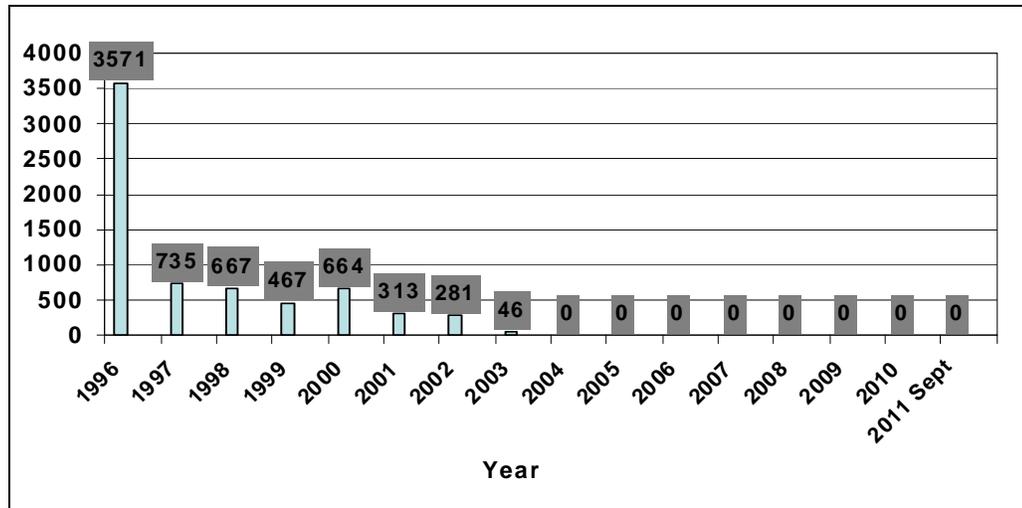
Strategy for yaws eradication programme (YEP) of India includes:

- Case finding: active case search, passive surveillance, rumour reporting and its verification;
- Treatment of cases and contacts with a single dose of injection benzathine penicillin;
- Training of health personnel-doctors and workers including volunteers;
- Information, education and communication (IEC) activities to enhance awareness about the disease and early reporting; and
- Sero-survey in 1-5 year-old children to confirm transmission of yaws, if any.

Dr Singh stated that as a result of implementation of YEP strategies, the number of reported cases decreased down from 3571 in 1996 to 46 in 2003. No yaws case was reported from 2004 till September 2011. India declared

yaws elimination on 19 September 2006 (Figure 1). Since 2006 onwards, the programme has continued a house-to-house search for detection and treatment of yaws cases and contacts twice a year. In addition, rumour verification by the team of specialists consisting of a public health specialist, dermatologist, Clinician and microbiologist is being continued.

Figure 1: Reported annual yaws cases in India, (1996- September 2011)



He further described how YEP, team is monitoring and verifying rumour cases. Yaws rumour cases were reported from Kandhmal district of Orissa and Villupuram district of Tamil Nadu during 2009 and 2010. They were found false as per the investigating specialist team. Five serum samples from Villupuram district, Tamil Nadu were found positive by Rapid Plasma Reagin (RPR) and negative by *Treponema Pallidum* Haemagglutination Assay (TPHA).

Dr Singh further elaborated on monitoring and evaluation of yaws elimination activities. Three consultants were deployed in problematic states like Orissa and Jharkhand for strengthening surveillance, sero-survey and IEC activities in the field. YEP nodal officers were identified at central, state and district levels for monitoring and supervision of the programme activities. YEP monitoring is done by the following methods:

- Monthly technical reporting from all the districts
- Active search report with line list of cases

- Visit of NCDC officers for monitoring in the states/districts/PHC
- Review meetings of state programme officers (SPOs)
- Task force at national level under the Chairmanship of the Director-General of Health Services
- Visit of independent experts during independent appraisals.

He informed the participants that the Government of India had approved a cash incentive scheme for voluntary reporting of yaws case in 2007, if confirmed Rs.5000 to the case, first informer of confirmed case- Rs. 500 in 2007 with an intention of finding new cases if any. However, no new confirmed cases were recorded.

Sero-survey of 1-5-years old children to verify interruption of transmission of yaws was continued. A total of 50384 blood samples of children aged 1-5 years were found negative with RPR test and false positives were tested with TPHA test and found to be negative.

While discussing future **plans**, Dr Singh, summarized the following activities:

- NCDC teams will visit all the yaws-endemic states for internal evaluation of reports and records during 2011 and 2012.
- Independent appraisal in the month of November 2011 and later.
- Task force meeting in February 2012.
- Preparation of country reports.
- Constitution of National Commission for Yaws Eradication in June or July 2012.
- Meeting of National Commission for Yaws Eradication in August or September 2012.
- Involvement of international health agency (WHO) for certification of yaws free country.
- Rumour verification by multidisciplinary team for rumour investigation.
- Declaration of India free from yaws, November or December 2012 or later.

Dr Singh concluded that the programme would develop guidelines for certification of India free from yaws. Meanwhile, the programme will continue surveillance and monthly reporting of nil case; active case search wherever needed; sero-survey; IEC activities; rumour case investigation; weekly market surveys and school surveys.

Chhattisgarh state in India

Dr B.P. Malani, State Nodal Officer from Chhattisgarh began his presentation with a quotation of Late Mrs Indira Gandhi former Prime Minister of India “There should not be any place for a disease like yaws in the world of modern, well cultured, civilized society of today” . While sharing his experiences in eliminating yaws from the State of Chhattisgarh, 13 out of 16 districts reported yaws; an no case was reported since 2002. The state could achieve elimination through community participation, active case search operation, selective mass campaign approach, advocacy and multi-sectoral approach. Yaws sero-survey and surveillance using appropriate media are being utilized for creating community awareness. The state of Chhattisgarh contributed about 10% of the total cases of yaws in India. Bastar, Dantewada and Raipur districts were endemic for yaws in 1997 when YEP was implemented. In 1988, elimination activities were initiated in Bastar and later expanded to two other districts. As per the available reports, the state reported maximum cases in 1998 (170) which started declining to zero by 2002. In 2001, the programme reported only 15 cases.

Dr Malani also highlighted that a total of 10807 children (1-5-years old) from 396 villages from 13 districts were examined serologically and all were found to be negative indicating total interruption of transmission (Table 2).

Table 2: Sero-survey for yaws in children 1-5-years old in Chhattisgarh State

S.N.	District	Block	"Y" Village	Village	Year					Result
					2005	2008	2009	2010	Total	
1	Raipur	14	33	54	158	2062	576	907	3703	All Negative
2	Raigarh	5	1	37	316	0	0	688	1004	
3	Korea	3	0	17	156	0	0	124	280	
4	Korba	4	0	18	185	0	0	302	487	
5	Janjgir- champa	5	0	23	142	0	0	496	638	
6	Bilaspur	8	0	41	155	206	0	364	725	
7	Surguja	8	1	46	0	0	0	503	503	
8	Jashpur	4	0	20	0	0	0	122	122	
9	Dantewada + Bijapur	4	2	31	245	98	535	240	1118	
10	Mahasamund	3	1	29	176	88	0	222	486	
11	Bastar+ Narayanpur	4	4	37	184	325	51	101	661	
12	Dhamtari	3	1	16	152	363	202	53	770	
13	Kanker	6	1	27	162	0	117	31	310	
	Total :-	71	44	396	2031	3142	1481	4153	10807	

Dr Malani further informed that altogether five independent appraisals were done from 2001 to 2007. The last one was in 2007 to confirm that Chhattisgarh had no case of yaws and transmission was completely interrupted.

He asserted that by implementing yaws elimination strategies systematically with strong political and community support, one can get rid of the disease even in most difficult geographic tribal areas as seen in Chhattisgarh.

Indonesia

Dr Christina Widaningrum, National Programme Manager for Leprosy and Yaws, Ministry of Health Indonesia gave an account of progress in yaws elimination in the country. She narrated the initial success after the

implementation of the Treponema Control Programme Simplified (TCPS) which was started in 1952. This campaign successfully reduced the prevalence rate of yaws (*Frambusia*) in Indonesia from 4.11% to 0.5% at the national level in 1980. This national campaign was carried out with the financial support for WHO and UNICEF. Following this success, the yaws programme was integrated with primary health care. The prevalence rate at the national level further declined to less than 0.001%. However, the initial success gradually faded in view of the decentralization process and socio-economic changes. The yaws programme lost its priority amongst other emerging disease programmes.

Currently, 18 out of 33 provinces are believed to be affected. Five of the 18 provinces are considered to be high burden for yaws disease. The remaining 13 provinces which were endemic in the past are considered as very low burden as they reported cases occasionally indicating the presence of infection in the community. Since 2001, endemic districts had started case finding and treatment activities whenever funds were available. This resulted in an increasing number of cases reported from 2001 (2112) to 6631 (2011) (Figure 2). More than 90% of the cases were from NTT province (Figure 3). Once intensified systematic active case finding and treatment activities are implemented in all endemic districts with adequate financial support in close collaboration with provincial and district health services, it is expected that new cases will increase initially and decrease later.

She informed that the programme developed a national plan and revised guidelines after the Bali meeting in 2006 and initiated advocacy in high-burden provinces and districts. However, due to lack of funds and political commitment at local government level, elimination by 2012 was not possible.

Figure 2: Trend in new case reporting in Indonesia: 2001-2011

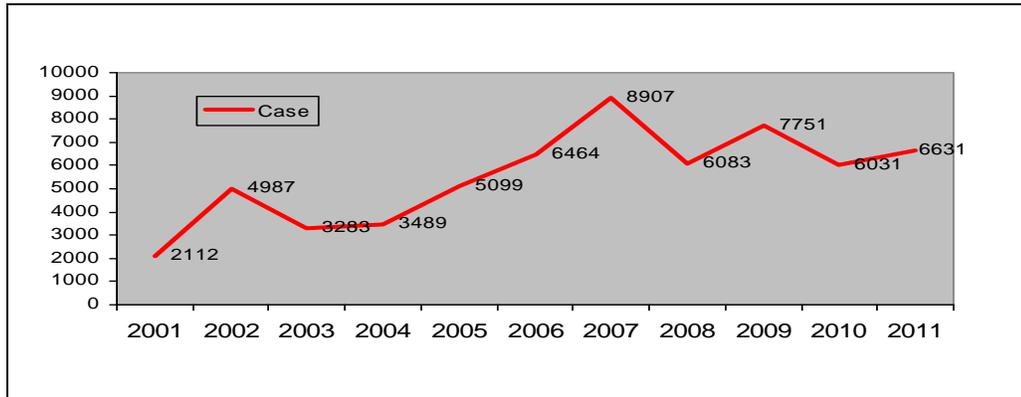
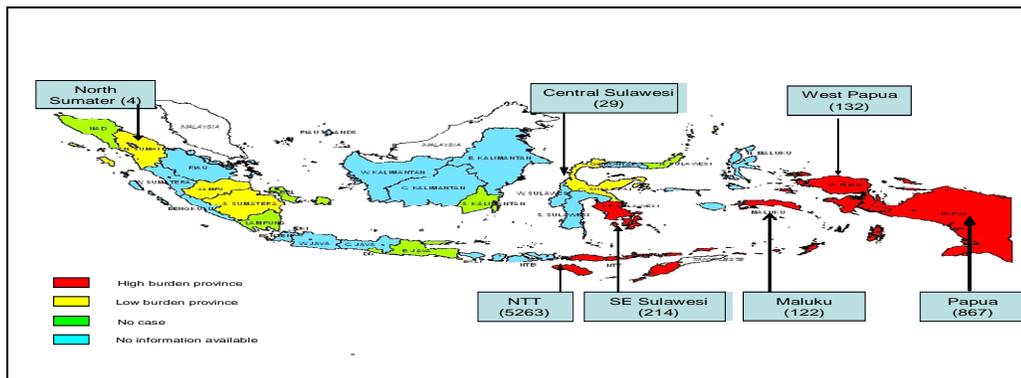


Figure 3: Yaws situation in Indonesia, 2011



Dr Christina touched upon important problems/issues for further discussion. She said that doctors and health workers have inadequate skills and knowledge to diagnose and treat yaws. The main problems are lack of priority and political commitment; yaws foci are in remote and hard-to-reach areas; there is poor flow of yaws information from peripheral to higher levels and inadequate resources.

She said that it is proposed to accelerate efforts in provinces to include yaws elimination in various government sectors. It is also proposed to integrate yaws into the leprosy advocacy body (ANEK-Alliance National Elimination of Leprosy) and establishment of a national task force for leprosy and yaws; health promotion and capacity building; intensification of case detection in high-endemic and remote areas; and integrated yaws serologic survey in low-endemic areas etc.

While discussing the **future plans for elimination of yaws from Indonesia**, Dr Christina pointed out that the earlier plan (2006-2010) did not yield dividends in eliminating the disease by 2012 mainly because of lack of priority and political commitment, yaws foci are in remote and hard-to-reach areas; and resources are inadequate etc. No external donor is coming forth with support in spite of the best efforts made by the programme and WHO. Since integrated NTD control plans are being implemented in Indonesia, the only option left is to combine with the leprosy and lymphatic filariasis elimination programmes wherever they co-exist. Rapid mapping, advocacy, social mobilization, training, screening of suspects by health volunteers, health education and supervision etc could be integrated into other programmes.

Considering difficulties in moving forward to reach the target by 2012, Dr Christina asked the experts what is the next target year for yaws elimination - 2015 or 2020, which needs to be discussed so that realistic plans may be developed. The country had developed plans until 2015 and approximate funding needed for five years is US\$ 10 million.

Dr Christina outlined the following possible activities in future:

- Establish leprosy and yaws (NTD) task force, certification team (national and provincial level).
- Yaws (NTD) elimination programme through Health Minister's decree and Internal Affairs Minister's decree.
- Advocacy to mobilize commitment and resources by local governments.
- Launching of yaws (NTD) elimination initiative by the President or Ministry of Health .

Indonesia plans to eliminate the disease by 2020 keeping a target for zero cases by 2015 so that at least three consecutive sero-surveys could be completed well before 2020.

Belu district in NTT province, Indonesia

Dr Fabianus Lau, Chief of Health, District Belu, NTT province, shared his experiences in initiating yaws elimination activities in Belu which is a high endemic district bordering Timor-Leste. Advocacy by the local government,

public education regarding the disease, meetings with water and sanitation sectors etc assisted in starting yaws elimination activities. The incidence of new cases ranged between 391 (2007) and 83 (2010). Due to budgetary limitations, population coverage was not satisfactory. Mostly, cases were from the schools. During 2009, with assistance from WHO, a systematic survey was undertaken. The district Mayor committed to support the activities. As a result, about 48 000 people were screened in 44 villages and 250 cases were detected and treated with injection benzathine penicillin. Of them, 150 were infectious. More than 50% were children.

Dr Lau emphasized that adequate funding for survey, education, training and drugs is a key for the success. He suggested that WHO should advocate the donor to support for yaws elimination activities.

Sumba Barat Daya district in NTT province, Indonesia

Dr Soleman D Poety, Chief of Health, Sumba Barat Daya district in NTT province, informed that his district reports the maximum number of cases in Indonesia. During 2009, a survey detected 3466 new cases in a population of about 15 000 examined. Of them 1922 were infectious. The rest were non-infectious. Since overall socio-economic development in this district is yet to take place, Dr Poety said that the local government is aiming to improve water and sanitation and living conditions of the yaws-affected villages. It was hoped that this will hasten the process of reducing cases in the district.

Timor-Leste

Mr Basilio Martin Pinto, from the Ministry of Health, in his presentation stated that there was no previous programme on yaws elimination / eradication in country. Reliable data on yaws is not available but considering that yaws is endemic in the adjoining provinces of Indonesia which border Timor-Leste, a preliminary estimate of 1000 cases has been made. Yaws is believed to be endemic in at least six of the 13 districts.

While touching upon the national plan to eliminate yaws, Mr Basilio further indicated that the country would go for an integrated project for control of lymphatic filariasis (LF), soil transmitted helminthiasis (STH) and yaws in 2012 if funds are available. The strategic plan 2012-2017 has been drafted. As a part of this project, a situational analysis on the yaws problem will be conducted.

The country will plan community and school surveys and also prepare community health outreach clinics for yaws case detection. He stated that there would be a concurrent control programme, joint plan, training, and implementation including surveys. Taking into consideration the common goals and outcomes of the health programmes for instance, Vitamin A for children aged 6 months to 5 years old, the distribution of albendazole could be integrated with yaws control. Monitoring and evaluation include baseline data, ongoing sentinel site monitoring, and end-of-programme surveys to confirm elimination of yaws.

Community participation and multisectoral approach for yaws elimination

Dr Rui Paulo De Jesus, Regional Adviser, Communicable Diseases Control, WHO-SEARO while giving his presentation highlighted the following key components the programme:

- National steering committee
- Human resources training: Health staff and community-based health volunteers
- Community education
- Active case finding and treatment : schools and communities and Treatment of cases and contacts
- Referral system and surveillance system.

While educating lay people regarding yaws, which was not a common disease in Timor-Leste, he cited some of the key messages such as early signs and symptoms, complications and sequelae, availability of highly effective treatment, importance of treatment of contacts, mode of transmission, stigma and importance of community participation and how they can assist the health workers in eliminating yaws from their community etc.

Dr Rui gave an example of SISCa (Mobile clinic health workers) in Timor-Leste and how they assist the programmes. Currently, 475 such SISCa clinics are functioning covering all the villages. He also emphasized the need for involvement of water and sanitation, education, rural development, local leaders etc. in yaws elimination since poverty, lack of water and sanitation favors spread of the disease.

Innovative approaches in advocacy and resource mobilization

Dr I Nyoman Kandun, Retd. Director-General, Disease Control, Ministry of Health, Indonesia brought out some of the issues from his own experiences in disease control / elimination. He mentioned that the main problems of yaws elimination in Indonesia are low priority and lack of political commitment, lack of trained health staff, low motivation of health staff, lack of intersectoral coordination and severe funding constraints. This is applicable to many other diseases of low priority. However, one had to find solutions to these chronic issues by patience and sustained advocacy and dissemination of evidence of success to local governments. Since the last meeting in Bali in 2006, could not move forward in motivating politicians and decision makers though the plan was ready.

Dr Kandun described some of the key elements of the successful advocacy like networking and coalition building, identifying resources, information and research, communications and media, planning and evaluation and lobbying. He further reiterated that lack of time, lack of focus, lack of knowledge with the issue(s) and lack of comfort with the advocacy process are some of the road blocks in successful advocacy.

Dr Kandun gave a definition of a good and successful advocater. He said, one who defends, maintains, publicly recommends, or raises his voice on behalf of a proposal is a real advocater.

National integrated disease control programme in Timor-Leste

Dr Megan Counahan, Technical Officer, WHO Representative's Office in Timor-Leste presented general information on Timor-Leste, current the epidemiology of infections, overview of the former programme, results and future directions. Dr Counahan drew attention of participants on the national integrated disease control programme in Timor-Leste "*Lumbriga mak lae duni!!* (Worms no way!).

She referred to a study in 1975 which found 39% (Baucau) and 20% (Manufahi) had infectious skin disease. In 2002, of the 280 pregnant women screened for RPR / VDRL. 70 were positive but only three were associated with syphilis. In 2007, the Ministry of Health reported 48221 people visited health facilities with skin problems and more than 50% of these were aged less than 15 years. In 2007 a study conducted in 14 locations found the majority of people had at least one skin infection.

Six cases of yaws were detected (a prevalence rate of 0.4%), all were male and all were aged between six and 15 years.

Dr Counahan concluded that the country drafted an integrated plan for NTD (lymphatic filariasis (LF), STH and yaws) control 2012-2017 which is to be implemented in the near future provided funds are forthcoming. The government is keen to initiate NTD control and restart mass drug administration for LF and STH.

Revision of SEA Regional Strategy on eradication of yaws 2006-2010

Dr Revankar, initiated discussion on revision of the SEA Regional Strategy on Eradication of Yaws. The participants agreed that since the term “eradication” is applicable in the global context, “elimination” is appropriate at country and regional levels.

The participants discussed the strategic plan and suggested some changes. Since not much progress could be made except in India after the last meeting in Bali in 2006, the Member states in the meeting proposed that the regional target of eliminating yaws should be by 2020 which would provide sufficient time to move forward. Accordingly, the strategic plan will be developed for 2012-2020.

Since the basic strategies/approaches remain the same (active case search, treatment of cases and contacts, surveillance, community awareness, advocacy and improving water and sanitation situation etc), the consensus was to retain them and develop locally-specific innovative approaches.

Since azithromycin trials in Papua New Guinea (PNG) and Ghana have shown good results and are likely to be discussed further by WHO, it was decided to incorporate it in the strategic plan.

The revised Regional Strategic Plan for Elimination of Yaws 2012-2020 is described in the main body of this report.

Conclusions and Recommendations

Conclusions

The participants made the following recommendations after two days of depth discussions on successes and failures in yaws elimination programmes at the global level and at the regional level (India, Indonesia and Timor-Leste). The participants while appreciating WHO-SEARO for holding this informal consultation proposed that the Regional target for yaws elimination should be 2020 which may be achievable and is realistic.

Recommendations

Recommendations for WHO-SEARO

- (1) To revise the regional strategy on yaws elimination based upon the outcome of the “Informal consultation on elimination of yaws from South-East Asia Region” in Dili, Timor-Leste.
- (2) To share the revised regional strategy on elimination of yaws (2012 – 2020) with the yaws-endemic Member States in the Region.
- (3) To provide technical assistance to yaws-endemic Member States to intensify yaws elimination efforts.
- (4) To assist India in developing guidelines to declare the country free from yaws.

Recommendations for yaws-endemic Member States

- (1) To seek high-level political commitment to prioritize and allocate sufficient resources
- (2) for yaws elimination activities.
- (3) To intensify active case finding and treatment of yaws cases and contacts according to the regional strategy (2012-2020).
- (4) To promote multisectoral approach at all levels in order to accelerate yaws elimination activities.

- (5) To increase community awareness and involvement for yaws elimination activities.
- (6) To link yaws elimination activities with other health programmes/activities wherever applicable.
- (7) To advocate with development partners to mobilize resources to achieve the goal of yaws elimination by 2020.
- (8) To enhance cooperation between Indonesia and Timor-Leste to achieve the goal of yaws elimination.

Dr Jorge Mario Luna, WHO Representative to Timor-Leste in his closing remarks thanked the participants for their active inputs. He stated that the outcome of the meeting was beyond the expectation of WHO in view of the commitment to move forward. He thanked the Chairperson, Mr Bazilio Martins the rapporteur, Dr Sukhvir Singh for ably and efficiently conducting the proceedings. He also thanked the Government of Timor-Leste and his staff for their assistance in organizing the meeting.

The Regional Strategy for Yaws Eradication, 2012-2020, as finalized at the meeting was duly adopted.

Annex 2

Programme

Registration

Opening session

Technical sessions

- Global progress in eradication of yaws
- Regional progress in elimination of yaws
- Country presentations:
 - India
 - Chhattisgarh
 - Indonesia
 - Belu district
 - Sumbar Daya Barat district
 - Timor-Leste
- Community participation and multi-sectoral approach for yaws elimination
- Advocacy and resource mobilization –innovative approaches
- National integrated disease control programme in Timor-Leste
- Discussion
- Revision of SEA Regional Strategy for elimination eradication of yaws: 2006-2010
- Conclusions and Recommendations

Closing

Annex 4

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Yaws is a contagious disease caused by non-venereal *Treponema pertenue*. The disease is transmitted by direct person-to-person contact and occurs mainly in children below 15 years. The disease is prevalent predominantly in poor and marginalized populations in Africa and Asia. WHO and UNICEF have jointly treated about 50 million people in 46 countries from 1952-1964 reducing the prevalence by more than 95%.

In the South-East Asia Region, India, Indonesia and Timor-Leste continue to be yaws- endemic. By 2006, India achieved yaws elimination. Since the target of achieving yaws elimination at the regional level was not possible by 2012, WHO-SEARO organized an informal consultation to eliminate yaws Timor-Leste on 20-21 October 2011. India, Indonesia and Timor-Leste and experts participated. The participants made recommendations to the yaws-endemic countries and revised the regional strategic plan for eradication of yaws, 2012-2020.

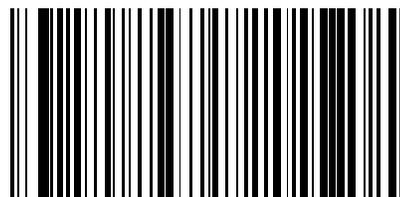
This report presents the synopsis of deliberations held at the consultation, as well as recommendations.



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