Malaria: Questions and Answers

THE REGIONAL ACTION PLAN FOR MALARIA CONTROL AND ELIMINATION IN THE WESTERN PACIFIC REGION (2010-2015)

Q: What is the purpose of this strategic plan?

- The Action Plan was developed by the Regional Office for the Western Pacific in close association with Member States and in consultation with the WHO Regional Office for South-East Asia. It calls for consolidating and building on achievements made in malaria control in the Western Pacific Region, and progressively eliminating malaria where possible, as a partner effort. The new Regional Action plan is meant t to be a road map for the Region, a framework for updating national plans, and a tool for monitoring national programmes and for mobilizing internal and external resources. It is a "living document" that will be updated periodically and will be available online.

Q: How was the Regional Action Plan developed?

- It is a product of extensive consultations and consensus meetings among national programs and multiple stakeholders, which considered and available evidences and lessons learned over decades of malaria control implementation. It brainstormed on the challenges faced and proffered feasible solutions. The result was a draft Regional Plan with performance indicators to monitor progress and evaluate outcomes and impacts. This was presented, discussed by Member States and endorsed by the Regional Committee Meeting (WPR/RC60.8) with a Resolution (WPR/RC60.R5). The Action Plan is a 'living document' – subject to periodic review as necessitated

Q: If the framework of countries' plan is different from this regional plan, do countries have to change their plans?

- The plan is expected to serve as a framework for updating national plans. So far nine out of ten endemic have updated their national strategies in conformity with the RAP.

Q: Does this strategic plan serve as a reference of a guideline for country?

- The *Regional Action Plan for Malaria Control and Elimination in the Western Pacific (2010–2015)* is a comprehensive framework for updating national plans and as a tool for monitoring national programmes and for mobilizing internal and external resources.

Q: How is this strategic plan being implemented?

For two years, the plan is being implemented in close collaboration with Member States, WHO and key stake holders. In order to achieve its ambitious goals Member States will continue to

- Increase their commitment at all levels to implement and sustain national malaria control efforts with the ultimate aim of eliminating malaria;
- Ensure free universal access for all populations at risk of malaria to effective and appropriate vector control measures, early parasite-based diagnosis and safe and effective antimalarial combination treatment;
- Halt any further development of resistance to artemisinin, one of the last resorts in our arsenal to effectively treat malaria. The issue of counterfeit drugs needs to be seriously dealt with.
- Put vivax malaria on the national public health agenda. Elimination will not be achieved unless we adequately deal with it;
- Strengthen national surveillance systems, taking advantage of the unprecedented availability of financial resources for malaria;
- Expand partnerships within and beyond existing networks to encourage synergies, and strengthen technical cooperation efforts;
- Implement their national malaria control or elimination plans based on the Regional Action Plan for Malaria Control and Elimination in the Western Pacific (2010–2015).

Q: Do we have to follow all the indicators or can we apply them selectively in countries' M and E plan?

- The Monitoring and Evaluation indicators were developed in close collaboration with Member States, WHO and key stakeholders. They reflect the core areas that need to be monitored in order to measure progress towards our goals. It is recognized that in some instances some indicators may not be relevant in a particular setting for example elimination indicators in a control phase. Therefore Member States will have to apply these few context specific indicators as appropriate to their national setting.

- The Regional Malaria Indicator Framework (RMIF) has been finalised and currently being implemented by Member States. In nearly two years after the RAP was endorsed, six malaria endemic countries have updated their national malaria M&E plans while additional one is currently updating in line with the RMIF. This framework is supposed to be applicable to our *sister-region*, the South-East Asia Region (SEARO).

Q: Where are the resources from to implement this strategic plan?

- Funding has grown at an extraordinary rate, providing a unique opportunity to effectively control and even proceed to eliminate malaria. The ambitious plan will need a significant commitment of human and financial resources by the Member States to ensure sustainability. WHO is intensified its commitment to mobilize additional resources in addition to the technical assistance copiously made available by its human resource to the Member States, development partners and other stakeholders.

Q: How much countries are willing to fund the malaria control and elimination effort?

- This is especially pertinent when majority of funds for national malaria programmes are external. History has shown that the focus donor funding can change. Member States will need to progressively increase their domestic financial commitment to national programmes to ensure sustainability. Currently two endemic countries fully fund their malaria elimination efforts while domestic funding has increased in some countries.

Q: Increased attention is being paid to the need for Health Systems Strengthening.

- National malaria programmes are encouraged to take advantage of the unprecedented availability of financial resources for malaria to strengthen national surveillance systems, health and medical products supply management systems, improved integrated service delivery as well as expand partnerships within and beyond existing networks to encourage synergies, strengthen technical cooperation efforts and improve governance e.g. through GF-Country Coordinating Mechanism.

Q: How can countries that have a declining malaria burden implement this plan? Bearing in mind that there are other public health priorities competing for a limited amount of funds and human resources?

- Member States have invested a considerable amount of financial and human resources in malaria control for long period and experienced some successes in malaria control. In order to maintain these achievements and further roll back malaria, we need sustain investments in malaria control and scale up proven interventions in order to ultimately achieve elimination. Innovative cost effective cross-cutting strategies such as vector control and IEC/BCC are being scaled up to allow for integration with other relevant programmes.

Q. Can WHO support for country to implement this plan in tern of fund and technical assistance?

- In order to successfully implement this plan, strong political, financial and human resource commitment is needed from Member States, and key stakeholders. This plan of action has been developed through consultation and technical inputs from WHO's staff, consultants and national malaria programme managers. WHO will continue to provide technical assistance to ensure its implementation.

PROGRESS

Q: What changes have taken place in the malaria situation in the Region over the past 2 years (2009/11)?

- Significant success was observed on the first two years of implementing the regional action plan. Nine out of ten countries are now aiming for malaria elimination. Innovative strategies were also employed to scale up access to malaria interventions, especially for vulnerable populations such as migrants and pregnant women. Surveillance has been strengthened, sizable resources were mobilized for country programmes and partnerships have been expanded. Followings are summary of progress:
- Significant progress has been achieved in reducing mortality and morbidity (See Annex on page 17, for data for WPR);
- Huge amounts of funding mobilized both external and domestic, however funding still gaps exist;
- Number of partners and scope of work / size of contribution have increased; both technical and donors;
- Programmes face significant challenges in terms of skilled staffing, procurement, supply management, engagement of private sector;
- Universal access to malaria interventions has not yet been achieved, especially in vulnerable and hard-to reach populations;
- Most countries have committed to malaria elimination and are reorienting their programmes. Targets are ambitious with many challenges across all countries embarking on it (high income or low income) and include: migration, private sector, civil unrest, lack of technical tools for vivax, and inadequate knowledge on the impact of climate change on malaria burden as well as other vector borne diseases;
- Examples of innovative and intersectoral approaches exist in a rapidly changing socio-economic development context; and
- Drug resistance is a huge threat in the Region, but response to artemisinin resistance is in place
- The challenge now is to sustain the gains in order to meet the 2015 targets, including the malaria-related Millennium Development Goals 1, 4, 5 and 6. Programme re-orientation is critical, management capacity must be strengthened and diagnosis of all cases must be quality assured to ensure malaria elimination.

Q: What changes will result from support by the Global Fund to malaria control programmes in the Region?

- The Global Fund has approved a total of **$854 million** for malaria since its inception to eight countries of this Region. New proposals are under development in Lao PDR and the Philippines. Malaysia and Republic of Korea have not applied for GFATM funds so far. While funding is currently adequate in most countries, issues of programme management and human resources are becoming a priority now in order to be able to significantly scale up malaria control measures, including ACTs, rapid diagnostic tests, long-lasting insecticidal nets (LLIN), indoor residual spraying (IRS).
- Challenge of sustaining the Global Fund supported programme efforts exists in most of the countries hence Member States are urged to fulfill the expressed commitments towards achieving declared goals and sustaining the move towards elimination.

MALARIA ELIMINATION

Q: The world is now talking about "malaria elimination", how big are the chances of success this time?

- Indeed, achieving malaria elimination is not straight forward. It requires strong political and donor commitment for several years, if not decades. All malaria-endemic Member States will also need a strong commitment of human and financial resources to ensure sustainability
- The Regional Action Plan for Malaria Control and Elimination in the Western Pacific (2010-2015) was developed to guide Member States in accelerating implementation of activities leading to intensified control of malaria and its elimination.
- Currently, nine out of ten malaria-endemic countries in the Region are embarking on malaria elimination.
- Successful elimination efforts require international cross border collaboration among Member States. Collaboration among provincial and district authorities is also essential to accelerate nation wide elimination goal.

1. Strategies to Achieve Malaria Elimination

MALARIA RAPID DIAGNOSTIC TESTS:

Q: What is the WHO policy on malaria rapid diagnostic tests (RDTs)?

- RDTs nowadays have a crucial role in case management, where good microscopy is unavailable. RDTs have increased access to malaria diagnosis and treatment, as it is possible to use them at village level through volunteers. We have successful examples of village based malaria diagnosis and treatment from several countries of the Region, including Cambodia, Laos, Viet Nam and the Philippines. RDTs should be stored with care, tested periodically for sensitivity, and there should be a clear plan for action for the results. WHO has developed methods and guidelines to assist in purchasing, quality assurance, and training of health workers in RDT use, and is currently collaborating with US CDC and others to evaluate the performance of commercially-available RDTs, and in developing a formal prequalification process.

Q: How is WHO assisting countries with malaria diagnosis?

- WPRO is coordinating the development of methods for quality assurance of malaria RDTs and assisting countries with advice on purchasing and testing products. WHO is also developing support for improving microscopy quality in the Region through re-training courses, updating of existing training manuals, and a new guide to setting up national quality assurance programmes. This is being done in collaboration with ACTMalaria and Australian Army Malaria Institute.

Q: What are the best practice(s) in countries that have achieved ensuring access for all to early diagnosis and affordable, safe, effective and prompt antimalarial combination treatments? (Objective 4)

- In the Philippines, the QA system for malaria microscopy and the continuous efforts made by WHO and ACTMalaria have resulted in **best practice.** There are essentially 3 levels - a) volunteer microscopists/RHU Med techs; b) CHD/PHO validators; c) national core group and WHO is assisting RITM to expand the slide bank (this is a repository of known malaria slides for all parasite species to be used in areas with very few malaria cases.) The QA system requires a microscopist to undergo refresher courses to meet the standards. The VBDCP in Solomon Islands is currently applying this approach. Currently, WHO is supporting EQA for Mekong and Pacific Island countries, including a malaria slide bank as a repository of known malaria slides for use in areas with very few malaria cases.
- Using WHO microscopy training manuals, the GF malaria projects in the Philippines have mobilized more than 400 village volunteer microscopists in areas without Medical Technologists, to provide quality diagnosis and treatment of malaria cases under the supervision of MHOs or public health nurses. This has reduced the response time to 24 hr.

VULNERABLE / MIGRANT AND MOBILE POPULATIONS:

Q: How do you increase access of malaria diagnosis and treatments to vulnerable population?

- Use of Focal screening and treatment (FSAT) as a tool in detecting and treating asymptomatic malaria cases among mobile population
- Develop innovative vector control and personal protection measures for mobile population.

VECTOR CONTROL:

Q: Should the use of DDT be revived for malaria vector control? (Objective 2)

- There is no right or wrong answer. DDT has comparatively long residual efficacy (6 months or more) against malaria vectors and plays an important role in the management of vector resistance. WHO recommends DDT only for indoor residual spraying. Countries may use DDT for as long as necessary, in the quantity needed, provided that the guidelines and recommendations of WHO and the Stockholm Convention are all met. Only insecticides to which vectors are susceptible should be used. Monitoring and management of insecticide resistance are vital in the use of ITNs and IRS.
- Indoor residual spraying with DDT was the principal method by which malaria transmission was eradicated or greatly reduced in many countries between the late 1940s and 1970s.
- Since then, decreasing use of DDT has been associated with a resurgence of malaria in India, Sri Lanka, former Soviet Central Asia, Zanzibar, Venezuela, PNG and several other Latin American countries.
- Still, in many countries, public and political opinion has been so affected by adverse propaganda against DDT as to make reintroduction an impossible task of changing beliefs.

- In addition, in countries with important agricultural export markets to Europe, the detection of DDT residues in fruit and vegetables (through illegal agricultural use) is often cited as a bar to reintroduction of DDT**.**

Q: What advice would you give to WPR countries who wish to start IRS? (Objective 2)

- Ensure there is good foundation and sustainable infrastructure for IRS, good program leadership and management as well as good research and technical inputs. Otherwise don't do it.
- Some of the challenges faced by WPR countries who wish to restart IRS implementation are a weak health system and infrastructure, weak public health management and organizational capacity, lack of trained personnel, delays in annual cycles of operations, insecticide resistance, problems in attaining and maintaining high coverage levels, substrates that do not permit long residual activity and poor community participation and acceptance.
- Countries no longer have the focused, single-purpose ("vertical") malaria control program that is necessary to mount and sustain extensive IRS operations – they have been replaced at provincial and district level by multipurpose health workers who cannot provide the management, organization, training, and supervision for good quality IRS.
- Several years of consecutive rounds of IRS are usually required to achieve and sustain the full potential of this intervention, so the adoption of IRS requires medium– to long-term political and financial commitment by national programmes and funding partners.
- Therefore, IRS would ideally not be planned unless full capacity for implementation, monitoring and evaluation is in place at national, provincial and district levels and can be sustained over several years.
- Timing in IRS operations is essential. Owing to the short duration of insecticide efficacy when sprayed on walls, spraying campaigns must be completed just before the onset of the transmission season. Because they are costly, it is not usually feasible to implement IRS continuously for long periods of time.
- IRS is effective in reducing malaria parasite prevalence and incidence in areas of high transmission but, once these goals have been achieved, IRS may be supplemented and then supplanted by other interventions, including LLINs.
- IRS is the first-line intervention for containing malaria epidemics, and earlier application is likely to be more effective. IRS may also be used to prevent transmission in epidemic-prone areas and in areas with low seasonal transmission (e.g. highlands, fringes); in settings where LLINs are ineffective owing to pyrethroid resistance; and occasionally to control malaria in "complex emergencies" (e.g. displaced populations, refugees).

LONG LASTING INSECTICIDE TREATED MOSQUITO NETS:

Q: What are long-lasting impregnated (insecticide treated) mosquito nets, and what is their advantage over the untreated nets?

- The use of insecticide-treated mosquito nets (ITNs) is the mainstay of malaria prevention in all malaria endemic areas. They have shown to be able to reduce malaria mortality and morbidity in all countries. The problem is the annual retreatment of nets, and retreatment rates are low everywhere. One solution of the problem is offered by long-lasting impregnated nets (LLIN), which, if not washed too often, do not need to be retreated over their whole lifespan of 3-5 years.
- Currently 2 types of long-lasting impregnated nets (LLIN) are available: (1). A permethrin-impregnated thread is used for knitting of the netting material (type OlysetTM net); and (2). The residual insecticide is pressed on to the netting material after its fabrication (type PermaNetTM).
- All countries with support from the Global Fund are switching from ITN to LLIN. However in this region retreatment with long lasting insecticides, of the large existing stock of conventional bednets remains important.

VACCINE DEVELOPMENT

Q: What is the status of vaccine development for malaria?

- At present, there are no malaria vaccines available shown to be sufficiently effective for operational use.
- WHO is involved in various partnerships to develop malaria vaccines, such as the Malaria Vaccine Initiative (MVI).
- The malaria parasite presents various biological features that make the development of an effective vaccine technically difficult.
- Various vaccine candidates exist and are undergoing further development and evaluation. The most advanced malaria vaccine candidate, RTS,S/AS01, is progressing through a pivotal Phase 3 trial, and may be licensed in the future. Contingent on the completion of the ongoing Phase 3 trial and submission of data supportive of use, WHO will review the evidence for policy recommendation in 2015.
- It is not likely that malaria vaccines will be available in the near future.

Q: What are the steps to follow before a malaria vaccine can be introduced in a national programme?

- WHO approved scientific evidence of efficacy and safety
- Receipt of marketing authorisation by the competent national regulatory authority
- National registration in the countries in which it is to be used
- Introduction into the national immunization programme

2. Issues

ARTEMISININ&ARTEMISININ RESISTANCE

Q: What is artemisinin?

- Artemisinin, also known as *Qing-haosu*, is a traditional Chinese herbal drug used for more than 1500 years primarily to treat fevers. It is extracted from *Artemisia annua*, (also known as sweet wormwood) a common weed found in many parts of the world.
- A number of derivatives of artemisinin with higher bio-activity than the parent drug have been developed, these include: dihydroartemisinin, artemether and arteether (oil-soluable), artesunate and artelinic acid (water soluable). Formulations are available for oral, intramuscular, intravenous and rectal administration.
- Artemisinin and its derivatives are the most rapidly effective antimalarial drugs known. They are active against malaria parasite strains that are resistant to other common antimalarials, however in some areas of Southeast Asia where they have been used extensively there is suspicion that parasite susceptibility has declined.
- There are practically no side effects in normal clinical use, but neurotoxicity has been found after administration of very high doses in animal experiments.
- The parenteral forms are now considered the best treatment for severe malaria. Suppositories are eminently suited for emergency treatment of severely ill children and infants, where injections cannot be given.
- Despite the rapid action but due to the short half-life, it is necessary to take these drugs for 5-7 days to obtain a complete cure. Most patients are unable to comply with that. The problem can be overcome by combining an artemisinin derivative with another antimalarial drug. Such combinations yield a complete cure in 3 days. Depending on the partner drug, such combinations cost at least about US$1.50.
- WHO recommends that artemisinin drugs should always be used in specific combinations. In addition to the improved compliance and high effectiveness, it is assumed one drug protects the other against the development of resistance. That is why WHO is recommending this artemisinin-based combination treatment (ACT) for treatment of falciparum malaria cases in areas with multi drug resistance. WHO has consequently issued a ban on the marketing of artemisinin derivative monotherapy.

Q: What role do artemisinin and artemisinin-based drug combinations play in the treatment of malaria in the Region?

- Artemisinin has been used in China since history for treatment of fever. Both China and Viet Nam are nowadays the world's most important artemisinin producers.
- The following artemisinin-based combination treatments (ACT) are used in the WPR and play an increasingly important role in malaria treatment:

Country	***Combination Treatment used***
Cambodia	ACTs since 2000: artesunate+ In 2009: changed to DHA-piperaquine in containment zone 1
China	ACTs since years: DHA-piperaquine, artesunate+amodiaquine, artemisinin+naphthoquine, artemisinin+piperaquine
Laos People's Democratic Republic	ACT since 2001: artemether-lumefantrine
Malaysia	No ACT: chloroquine, sulfadoxine-pyrimethamine (however: artemether-lumefantrine is registered and available but classified as Category A medicine to be used by experts in hospitals only)
Papua New Guinea	ACT since 2009: artemether-lumefantrine (but not yet operational)
Philippines	ACT: artemether-lumefantrine (since 2002 2nd line, since 2009 1st line)
Republic of Korea	(no falciparum malaria) Chloroquine (3days) + Primaquine (14days)
Solomon Islands	ACT since 2007: artemether-lumefantrine
Vanuatu	ACT since 2007: artemether-lumefantrine
Viet Nam	ACTs since years: since 2009 DHA-piperaquine as single first line regimen

Q: What are the cost implications of treatment of falciparum malaria with artemisinin-based drug combinations?

- ACT cost per adult dose are at least USD 1 for Coartem^{TM} (through a special pricing agreement with NOVARTIS).
- To improve quality of malaria case management and to direct malaria control interventions, the rule is to demonstrate of *Plasmodium falciparum* parasitaemia in the patient before administering ACT, either through microscopy or through use of rapid diagnostic tests (at least USD 0.50/test), adding to the treatment cost.
- NB: Good quality treatment demands an effective drug combination. Ineffective drugs are not an option, regardless the cost.

Q: What is artemisinin resistance?

- An increase in parasite clearance time with ≥ 10% of cases with parasites detected on day 3 after treatment
- Treatment failure after treatment with artemisinin-based montherapy (parasites on day 7, parasites at day 3 with confirmed recrudescence)
- What actions has WHO taken to prevent artemisinin resistance?
- Global Plan for Artemisinin Resistance Containment (GPARC)
- Established in response to confirmation of artemisinin-resistance confirmation in Thailand and Cambodia
- Major goal: protect ACTs as an effective treatment for falciparum malaria
- Encourages routine monitoring of therapeutic efficacy of first and second line drug treatments
- Containment projects planned in Thailand and Viet Nam
- Further research required to confirm artemisinin resistance

DRUG RESISTANCE

Q: What is the scope of the drug resistance problem in the Western Pacific Region?

- Multi-drug resistance of *Plasmodium falciparum* in the Greater Mekong Subregion is the most serious in the world, especially along the Cambodia-Thailand border. This is also the first area where artesunate resistance was discovered. However, the situation is also of concern in all other WPR falciparum malaria endemic countries, necessitating treatment policy change to ACTs. In Papua New Guinea, chloroquine-resistance of *Plasmodium vivax* is also widely prevalent. **;** and chloroquine treatment failure of P. vivax in Cambodia has resulted in change of national drug treatment policy starting 2011.

Q: What is WHO's recommendation on dealing with the development of drug resistance to anti-malarial drugs?

- Contain and eliminate artemisinin resistant falciparum malaria on the Cambodia-Thailand border (and in VTN/Myanmar) and where ever it is discovered by promoting the use of artemisinin-based combination therapy (ACT) as 1st line treatment of falciparum malaria, as it is known that the development of resistance can be delayed. Most of the malaria endemic countries in the Region have now adopted ACTs as first line choice for the treatment of malaria. Efforts need to continue to scale up the provision of these life-saving medicines to all malaria patients. Artemisinin monotherapy is still widely available in the private sector in many countries contributing to the development of resistance. [ACTWatch 2009 survey on 7523 outlets, found 8.2% of drugs on offer were artemisinin monotherapy]
- Limiting anti-malarial therapy only to patients shown to have malarial infection by parasite-detecting diagnostic tests (Rapid Diagnostic Tests or Microscopy), with certain exceptions such as young children in areas of very high transmission
- Strengthening health systems and their surveillance capabilities to detect trends of resistance.
- Enforcing regulations and legislation, including those to deal with counterfeit and sub-standard drugs.
- Conduct Therapeutic Efficacy Studies in country according to protocol every 2 years for surveillance of efficacy of first line anti-malarial treatment

Q: Regarding drug resistance, what concrete actions are being taken by WPRO?

- Support to all endemic countries to review, and where necessary change, national anti-malaria drug policies via Therapeutic Efficacy Survey.
- Support to training and implementation of drug resistance surveys and to using the data for decision-making in all endemic countries.
- Support the Strategy for the Containment of Artemisinin Tolerant Malaria Parasites in South-East Asia, via the Artemisinin Containment project. The goal of the project is to contain artemisinin-tolerant Plasmodium falciparum (Pf) parasites by removing selection pressure and reducing and ultimately eliminating falciparum malaria. The project is using a combination of prevention and treatment methods that have proven effective against malaria. It is also piloting some strategies,

designed specifically for the cultural, social and scientific conditions existing in Thailand and Cambodia in the border region.

- After the implementation of the containment project, the number of falciparum malaria patients has been reduced significantly, but in the presence of continued artemisinin drug pressure.

COUNTERFEIT DRUGS

Q: How serious is the situation of fake (counterfeit) antimalarial drugs in the Region?

- The problem is significant. . [In Cambodia, ACTWatch survey 2009 reported no counterfeits] Surveys have consistently shown that fake anti-malarial medicines are widespread in the Greater Mekong Sub-region. The packaging of some fakes especially of the fake artesunate is increasingly sophisticated (including the hologram), making it hard to differentiate the fakes from the real drugs. The Regional Office hosted a workshop in February 2010, to fine tune the strategies to address this situation.

Q: Which antimalarial drugs are found as fakes?

- Mainly the highly effective and high cost antimalarial medicine artesunate was found counterfeited, but counterfeits were found of most antimalarials: mefloquine, quinine, tetracycline, and chloroquine.

Q: What can countries do about fake drugs?

- Create the appropriate legal framework and ensure its enforcement
- Produce a country strategy and action plan, involving players from all relevant sectors including the private sector
- Adequate drug registration procedures
- Routine drug quality monitoring/surveillance, including border inspections
- Improve access to affordable and good quality and user-friendly (blister-packs) antimalarial medicines
- Information campaigns for consumers and prescribers
- Regulate importation and exportation of drugs
- Active National Pharmacy Associations and Pharmaceutical Producer Associations

Q: What is WHO currently doing to combat fake drugs?

- WPRO has produced an advocacy video on fake drugs in English and French that is targeted to decision-makers and the general public – a worldwide audience. It has been widely distributed and shown on global and local TV stations. The video has been translated into Lao, Khmer, Vietnamese and Chinese languages and is used widely in the GMS countries by national and international agencies and NGOs.
- In cooperation with partners, support national drug regulatory authorities, drug quality control laboratories and disease control programmes in routine monitoring of drug quality, including training of drug inspectors, development of simple tests, & the exchange of information with all relevant partners and sectors
- WPRO is cooperating with INTERPOL and other partners to stop the production of fake antimalarial medicines and their distribution. This has been successful in interrupting the distribution of fake artesunate labelled "Guilin" in the Mekong region. Recently WHO has cooperated with INTERPOL in a follow up operation, involving customs, police and drug regulatory authorities from 7 countries, including a range of international partners.

PRE-QUALIFICATION OF MEDICINES

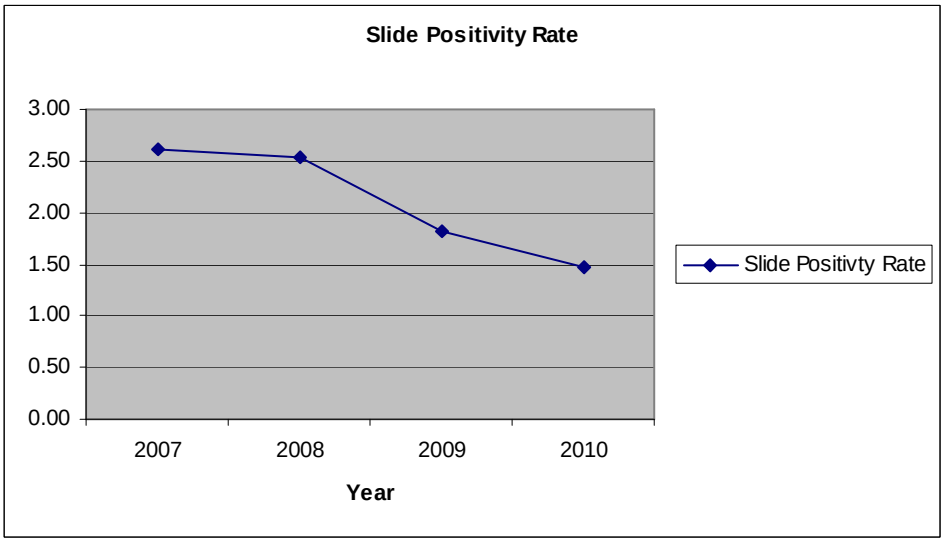
Q: What is WHO prequalification?

- To help countries access quality medicines including Fixed Dose Combinations (which are currently primarily produced as generics in India), WHO has a prequalification process.
- The Prequalification Project, set up in 2001, is a service provided by WHO and UNICEF to facilitate the procurement of medicines that meet international standards of quality, safety and efficacy for HIV/AIDS, malaria and tuberculosis.
- Companies submit a dossier to WHO which is then assessed by a panel of experts appointed by national drug regulatory authorities from a wide range of countries including Australia, Canada and Europe. Once these dossiers are approved a site inspection of the drug manufacturers is carried out. Only when both products and manufacturing sites meet the required standards is the medicine added to the list of prequalified products approved for purchasing by UN organizations.
- Countries and procurement agencies also use this prequalification system to guide their national procurement policies as they do not have the money and ability to do their own site check
- For malaria, WHO has so far 'prequalified' very few products, including one only 1 ACT: Coartem™.

ANNEX. Malaria morbidity data in WPR, 2007 – 2010

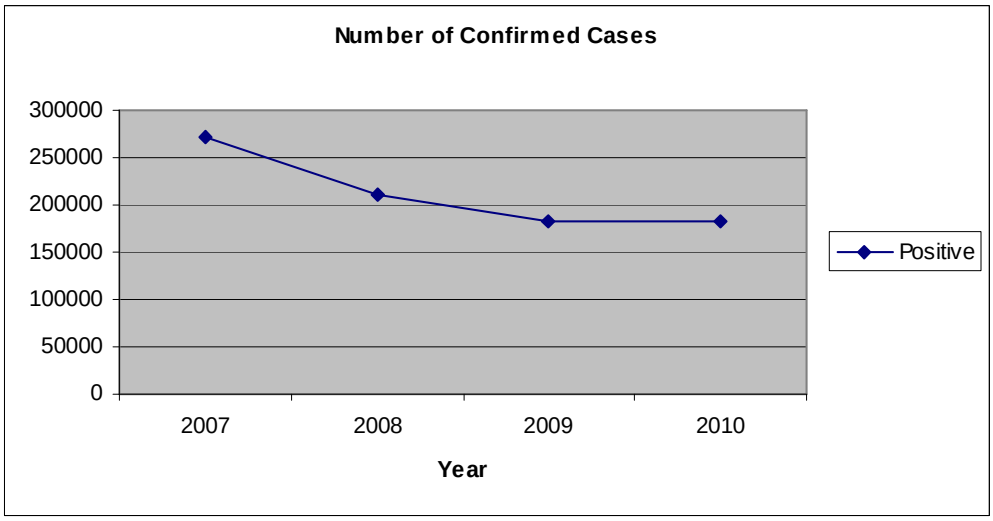
Slide Posistivity Rate:

WPRO	Year	2007	2008	2009	2010
	Total Examined	10445048	8301755	10037132	12479947
	Positive	271917	211079	182781	183463
	Slide Positivity Rate	2.60	2.54	1.82	1.47



Number of confirmed cases by specie:

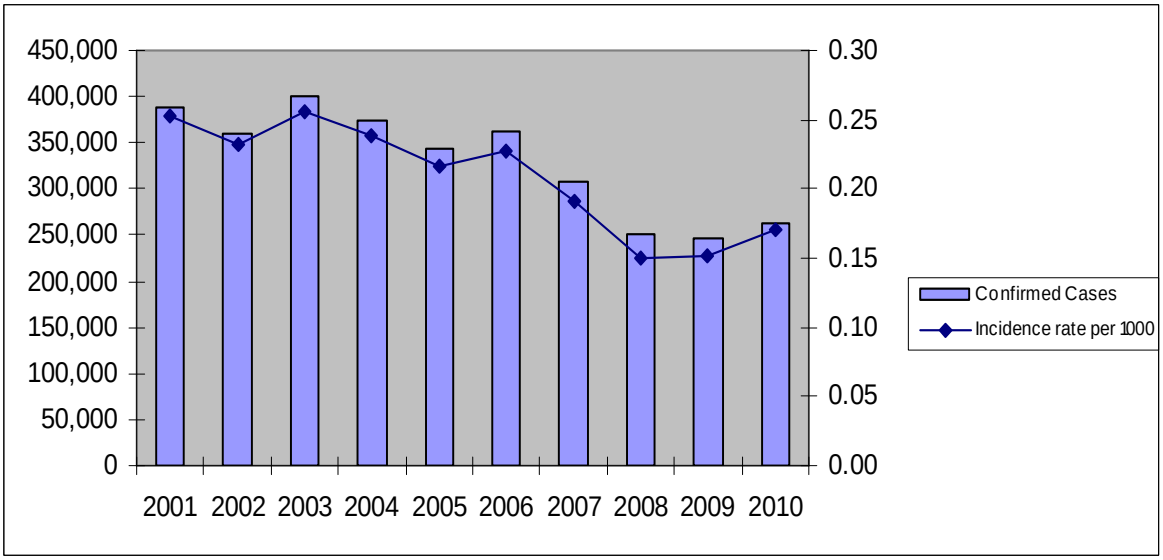
WPRO	Specie	2007	2008	2009	2010
	Examined	10445048	8301755	10037132	12479947
	Positive	271917	211079	182781	183463
	P. falciparum	157543	135061	122059	123314
	P. vivax	82057	62050	49265	49874
	Other species	3706	2862	2913	2925
	Mixed	5170	4791	3870	3884



Total Confirmed cases and reported deaths (2000 -2010)

	Confirmed Cases	Incidence rate per 1000	Deaths	Mortality rate per 100000
1994	651,412	0.46	3,415	0.24
1995	618,184	0.43	2,772	0.19
1996	525,108	0.36	2,714	0.18
1997	435,585	0.29	2,572	0.17
1998	365,167	0.24	2,536	0.17
1999	325,203	0.22	2,841	0.19
2000	396,476	0.26	2,366	0.16
2001	387,556	0.25	1,942	0.13
2002	360,444	0.23	1,574	0.10
2003	400,731	0.26	1,586	0.10
2004	374,858	0.24	1,427	0.09
2005	343,205	0.22	1,385	0.09
2006	362,527	0.23	1,322	0.08
2007	307,417	0.19	964	0.06
2008	250,033	0.15	1,007	0.06
2009	247,030	0.15	1,029	0.06
2010	262,912	0.17	898	0.05

Total confirmed cases (Microscopy and RDT) 2000 -2010



Total reported malaria deaths (2000 - 2010)