

Questions and Answers document

New developments in Indoor Residual Spraying

Wednesday, 6 March 2024, 13:00 Singapore time

Muhammad Ajmal Khan	Can IRS is recommended for Dengue? We need justification
Manuel Lluberias	IRS could be used under certain scenarios.
Minoo Mashayekhi	Operational manual on indoor residual spraying: control of vectors of malaria, Aedes-borne diseases, Chagas disease, leishmaniases and lymphatic filariasis ISBN 978-92-4-008399-8 (electronic version) ISBN 978-92-4-008400-1 (print version)
Muhammad Mukhtar	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=4686

Muhammad Ajmal Khan	why IRS is not recommended for dengue.
Minoo Mashayekhi	actually it has recommended somewhere. Please search for "The New WHO Operational Manual on IRS"
Shobiechah Wulandhari	https://www.who.int/publications/i/item/9789240083998
Muhammad Mukhtar	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=4686

David Stewart	Question for Inigio. Do you think that community based IRS will have a significant impact on malaria burden and transmission? As you know a community based field trial with a new perlite ai was completed in 2018 using the Goizper compression sprayer. This ai can be applied with minimal PPE and wide dose flexibiliy. It is an industrial mineral and has a safe toxicology profile. At Athena Vector Technology we are targeting malaria and dengue vectors with IRS and TIRS strategies and will need to collaborate to develop new and cost-effective effective compression sprayers.
	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=4509

Tobgyel Tobgyel	Wonderful presentation. When will this tool with apps will be in market and how much is the cost??
	live answered at this specific timestamp

Muhammad Ajmal Khan	Please explain the class of new insecticides and their in Malaria control intervention

Muhammad Farooq Sabawoon	Thanks for the informative presentation? Is there any consideration of using Artificial Intillegence for now or future with this tool?

Jeffrey Hii	'@Inigo - How does the iK SmartLight technology affect the performance and quality of spaying in mass campaigns and reactive spraying in active foci compared to teams without the Smart Light? What is the life span of iK sprayers in the field? There are still some functional Hudson XPert compression sprayers that were used in Papua New Guinea during 1990-1995.
	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=5343

KHIN MON MON	Not a question, but a comment to Inigo. although you said the training needs only one day because of user friendly new tool, there is still overdose and underdose are seen in your presentation. So, do you may need more training for some persons with low quality.
Inigo Garmendia	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=6657

Muhammad Ajmal Khan	if Resistance study is not conducted in any country, what will be the criteria we change the class of insecticides?

Muhammad Ajmal Khan	can we change any class of insecticides without any study?
Dr Muhammad Mukhtar	No. You need some evidence ideally

David Stewart	Question for Dr Mukhtar. Are you aware of a new ai that will provide a mechanical mode of action, pending registration IRAC UNM that can be applied by the community in a targeted manner to control
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	dengue vectors. We are seeking sites for community trials to support local registration.

Muhammad Ajmal Khan	why we conduct IRS before the peak of the Malaria Case , why not the Vector? please elaborate
Dr Muhammad Mukhtar	Please read National Guidelines for IRS 2007 and 2014 and 2018 for use of epidemiological data for decision making. Rest we can discuss

Muhammad Ajmal Khan	from 2016 the Global Fund limited IRS for outbreak response? which is still questionable?
	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=5874

Hans Lim	Please share the insecticide AI name recommended for IRS. TQ
Amanda Murphy	https://extranet.who.int/prequal/vector-control-products/prequalified-product-list
Muhammad Mukhtar	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=6613

Dr P T Joshi	IRS not recommended for Malaria Vectors in Animal Cattle Shed, because of Anthropophilic vectors still remain dangerous for community for transmission of Malaria..

Hans Lim	Please share the AI of new insecticide with 1 year residual effect. TQ
	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=5724

Muhammad Ajmal Khan	why we conduct two round for IRS in Malaria Control? why not in Dengue? Please elaborate
Shobiechah Wulandhari	Please see this: Operational manual on indoor residual spraying: Control of vectors of malaria, Aedes-borne diseases, Chagas disease, leishmaniases and lymphatic filariasis. https://www.who.int/publications/i/item/9789240083998

Sakunthala Janaki	Can we do special premises(eg:School) IRS than fully covering areas for dengue control

Muhammad Ajmal Khan	what is the recommended Strategy during flood? can we do IRS in Tents? what will be the efficacy of IRS in Tents?

Tobgyel Tobgyel	Excellent presentation Sir Can you name few names of new generation chemicals that has efficacy upto a year?
	live answered at this specific timestamp

Muhammad Ajmal Khan	We request to other countries to share their Outbreak Alerts and Confirmation Criteria? Link Please. Can we declare outbreak on vector or Diseases? Please elaborate?

TIA Bleu Jean Philippe	Thank you to all speakers for the quality of their presentations. What could be the effective of indoor insecticide spraying in a context of residual malaria transmission ?

Aleena Maskey	is IRS in humanitarian crisis done regardless of breeding season?

Jeffrey Hii	'@Presenters- Recently, WHO urge countries to explore integration eg IRS for control of malaria vectors and Aedes-borne diseases [3rd edition IRS operational manual https://www.who.int/publications/i/item/9789240083998 . IRS can potentially target dengue vectors, <i>Ae aegypti</i> as it was used for the first time in Malaysia in 1952 [IMR Bulletin 23, 1968], and its effectiveness for dengue control was confirmed in a recent systematic review and other research [Sameul M et al PLoS Negl Trop Dis. 2017;11(8):e0005837; Vazquez-Prokopec et al Sci Adv. 2017;3(2):e1602024]. Given the availability of Master trainers, IRS training curricula, new compression sprayers and supplies in PNG, Solomon Is (GF & WHO support,) and 12 Pacific Island countries (PacMOSSI support), what steps (and progress) have been made to establish and implement reactive or preventive IRS for dengue control? These strategies require a strong health system to track suspected dengue cases, serological diagnostic capability, and surveillance (at the place of residence).
Muhammad Mukhtar	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=6109

KHIN MON MON	To Dr. Muktar, It will be much better if you can show decreased in malaria case load aftrre IRS, not only reduction in mosquito density. However, thank you for your exciting and lively presentation.

Maneesh Sharma	Dr Manuel - Your prexentation showed use of 2 different insecticides for urban and rural areas, any specific reason for that? both insecticides were from Pyrethroid class
	live answered at this specific timestamp

Habib Kamara	'@Manuel, does the tool provide estimates of costs and labour at sub-district level?
Manuel Lluberas	Those are for demonstration purposes. The oull-down menus have a long list of options.

Jeffrey Hii	'@Leo @Amita- @One of the challenges of implementing quality IRS is the WHO conditional recommendation “Prioritize optimal coverage with either ITNs or IRS over combination (WHO Malaria guidelines, Oct 2023)”. LLINs are necessary but will not be sufficient on their own to reverse malaria morbidity & mortality trend and move towards elimination. Given that Solomons Islands have previously implemented IRS and LLIN combination to bring down cases (Over et al AJTMH 71: 214-223 (2003) how would APMEN/APMLA advocate IRS to WHO, GF or other funding agencies for countries who wish to continue with this combination strategy? PNG and Solmon Islands account for over 90% of all malaria in the Western Pacific region and have a long history (>50 years) of successful implementation of IRS but have yet to scale up IRS in high transmission areas
Tanya Russell	Throughout the Pacific Island Countries (PICs) support is being provided to update strategic plans to facilitate the use of IRS-Aedes based on locally-led decision making. Absolutely, much stronger notification systems are required to support timely reactive IRS. It is most feasible across the PICs that IRS-Aedes will be proactive, to facilitate planning and budgeting. One critical bottleneck that is faced in the region is the timely and economical procurement of WHO prequalified insecticides.
	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=6868

Krishnamoorthy Kaliannagounder	@Mukhtar - How do you identify the target/delimit the areas for IRS during humanitarian crisis?
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Shiva Murugasampillay	When do we refocus withdraw IRS and focus more on LSM ?

Pradeep Kumar Srivastava	@Manuel, As per your spray schedule weekly giving two days off but since these are daily wagers, how to make their payment, if salary is cut it will be difficult to retain them
Manuel Lluberar	Those are internal operational details that need to be sorted out by each campaign. It is an option that is not always used.
Pradeep Kumar Srivastava	so for audience in general it may confuse. They should not plan as per this slide
Manuel Lluberar	Yes. That is why I asked the listener to disregard the actual figures. They were all for demonstration purposes. Thanks for pointing it out.

Shiva Murugasampillay	Why is WHO weak in promoting IRS and LSM with Global Fund and other donors and partners?
David Zinyengere	Very good question Dr Shiva . This is quite a concern . Funding continues to reduce when it comes to IRS and LSM and yet these were key tools instrumental in malaria elimination in most countries that have eliminated the disease .
Manuel Lluberar	Thanks, Shiva. Perhaps we can assemble a group and push this issue with funders.
Muhammad Mukhtar	live answered at this specific timestamp https://youtu.be/d661vEklbT4?t=5874

Md Khalilur Rahman	To Dr Mukter, In areas where malaria cases are higher and ITN has been distributed in that areas , community people are tribal. we can not reduce the cases in that areas . my question , in this NMEP could do IRS with Deltamethrin WP for reduction of case burden. In country no registered non-pyrethroids. please provide your opinion.

Tandin Wangchuk	Why IRS is recommended only for malaria not dengue and other vector borne diseases. The areas is hilly areas

Samson Olkamo	we know that IRS can have good impacts on malaria prevention ,but what about insecticide resistance? it is big challenges to see the
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	expected results. do you have updated efficacious chemicals recommended by WHO in your localities? Thank you

Muhammad Ajmal Khan	Please we take valuable response from WHO technical Wing Regading the Above Response

Ross Hutton	Great presentations. This somewhat challenges the Either OR recommendations of LLINs Vs IRS from WHO, which drives Global Fund funding support. It is great that Pakistan has additional funding to support targeted IRS, but for countries that don't have Govt funding support for adjunct targeted IRS support what is the threshold for the Global Fund on outbreak or epidemics to support funding to be prepared over 3-year funding cycle.... Ross Hutton WHO Solomon Islands. The question is directed to both Manuel Lluberas and Dr Muhammad.
Manuel Lluberas	We need to improve stakeholder engagement so they understand the reasons why the campaigns are undertaken. Let me know if I can help. It's been a long time since my last visit.

Shiva Murugasampillay	Why is intergated vector control is not also including skin repellents?
Manuel Lluberas	Spatial repellents are under consideration in several places.
Krishnamoorthy Kaliannagounder	Integrated vector management considers all site specific interventions including repellents. Repellents are best considered in rubber plantation areas for prevention of dengue and chikungunya. For malaria, it is suggested for outdoor (early night) biting vector mosquitoes

Shiva Murugasampillay	Why has India failed to protect the production and use of DDT ?
Pradeep Kumar Srivastava	The phasing out decision is as per commitment to Stockholme convention.

Krishan Wickramasinghe	how can IRS be used in Dengue vector control since Ae. albopictus is mainly exophilic
David Stewart	use a s a targeted IRS, ie spray in resting sites of Ae. sp.
Pradeep Kumar Srivastava	Piloting has recommended as targeted IRS. Scientific Publications need to be referred
Krishnamoorthy	IRS for malaria control will have collateral benefit of reducing dengue

Kaliannagounder	vector contact.
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Jeffrey Hii	Hi Amanda good to see you here - will IRS technology for dengue prevention be replaced by Wolbachia in PICs?
Amanda Murphy	Thanks Jeff. Good to see you too. The PICs still have substantial challenges to implementing IRS so I doubt it will become the dominant technology any time soon. Wolbachia is much further along in terms of coverage and acceptance. No one is doing IRS yet. So I guess time will tell.

Shiva Murugasampillay	An. Stephensi was not effectively controlled in Asia by LSM and not moving into Africa. Again Stephensi goes with P. Vivax and key to vivax elimination

Tobgyel Tobgyel	In Asia most of the IRS chemicals were resistance to Aedes mosquito. I wonder, how IRS is effective for Dengue contro?

Jeffrey Hii	Its a shame - 50 years ago, every WHO region employed lots of entomologists - now they are a dying breed !!!
Manuel Lluberias	Yes we are. Especially field entomologists.
Andre Laas	Absolutely!

Evelyn Olanga	Dr. Leo, could you share the link to the WHO report you have just mentioned? On the shortages / challenges of African national programs to control arboviruses / NTDs?
Shobiechah Wulandhari	Surveillance and control of arboviral diseases in the WHO African region: assessment of country capacities

Samson Olkamo	please, can you arrange entomology short term training through online or actual for those new program implementers?

BINA DAS	I think Need to study the types of resting surfaces where dengue vectors rest before suggesting IRS for Dengue control

Ross Hutton	Especially when many of the pacific vectors are early eaving and
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	outdoor bitters. Where is the investment and science on this. QLD IMR has experience on this.
Ross Hutton	Solomon Islands has <i>An. farauti</i> . Documented outdoor, early evening biting. I'm just the WHO guy, Tom Burkot and Tanya Russell have a plethora of evidence which is ignored by GF on funding.

Rinzin Namgay	How we can respond to hanging clothes indoor where mosquitoes prefer to rest mostly in our areas.

Md. Nazrul Islam	As elimination is concern, what procedures have to adopt in case of the vector prevailing in endemic areas which are mainly exophilic and exophagics.

Ross Hutton	We are in the midst of GF negotiation so its a hot topic. I would suggest the donors need to do more home work on impact as apposed to the receiptient on trying to justify.
Amanda Murphy	Hi Ross, have heard many good things about you though not sure if we've met (I'm ex-WHO, Fiji office - now at JCU-PacMOSSI). I hear that donors have spent quite a bit of money on IRS in Africa (PMI?) but the vector profile, resistance profiles, implementation constraints and foci of transmission seem to put it in the 'too hard' basket in the Asia-Pacific.
Manuel Lluberas	My experience and the reason for the IRS Business Architecture calculator to share with funders.

Samson Olkamo	can we eble to use both IRS and LLINs in one locality to increase efficiency of VC?
Amanda Murphy	Absolutely! If you can implement both with good coverage. Many programs struggle to do both. WHO recommends not using the same active ingredient in both insecticides though. So if the nets are pyrethroids, the IRS should not be.

MARIE CRIS MODEQUILLO	hello..i am new with the National Aedes Borne Viral Diseases Prevention and Control Program in the the Philippines...Does IRS really effective intervention to combat Dengue, Chikungunya and zika?..Thank you.
Amanda Murphy	https://www.who.int/publications/i/item/9789240083998