PacMOSSI
Pacific Mosquito Surveillance Strengthening for Impact

A guide to risk communication and community engagement for residual spraying against *Aedes* mosquitoes

Version 1
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SUPPLEMENT TO

PacMOSSI Residual Spraying Against *Aedes* Vectors in the Pacific: Spray Operator Field Guide

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Quick guide

What	This is a guide to planning Risk Communication and Community Engagement (RCCE) for residual spraying against *Aedes* mosquitoes. It covers how to communicate to communities before, during and after spraying to support the success of spraying. It is a starting point and not a rigid set of rules.
Why	Residual spraying is more likely to succeed when communities understand what is happening and are involved. Good RCCE builds trust and increases cooperation between those doing the spraying and communities. Good RCCE helps reduce rumours and misinformation. Good RCCE also helps ensure that population groups at higher risk or with barriers to protection are identified and supported.
Where	This guide is intended for use in Pacific Island communities where residual spraying against *Aedes* mosquitoes is planned or underway. It supplements the *PacMOSSI Residual Spraying Against Aedes Vectors in the Pacific: Spray Operator Field Guide* and should be used alongside it.
Who	It is designed for public health managers and workers, and their community partners, involved in planning or delivering residual spraying.
When	RCCE should begin months before spraying starts, not just on the day. This guide should be used early in the planning process and revisited at each stage of spraying.
How	The guide provides a staged approach to what RCCE activities should be done (i) well before spraying, (ii) in the days leading up to spraying, (iii) during spray activities, and (iv) soon after spraying is completed. Use the recommended RCCE actions at each stage to help plan activities. The guide is written for the Pacific, but you know your setting best. Adapt things to best meet your local context and need.

Introduction

Why do *Aedes* mosquitoes matter?

***Aedes* mosquitoes can spread diseases.**
These mosquitoes may transmit dengue, chikungunya, and Zika viruses when they bite people. These diseases can cause high fever, severe body pains, and sometimes bleeding, shock, or death.

Diseases spread by *Aedes mosquitoes* can cause illness and death.
There is no cure or specific treatment. Health facilities can quickly become overwhelmed with too many sick people and lives may be lost.

Killing *Aedes* mosquitoes can reduce diseases.
Quick action to kill mosquitoes can stop the spread of diseases, preventing illness and saving lives.

What is residual spraying?

Residual spraying is the application of **long-lasting insecticides** to surfaces on which mosquitoes land and rest. It works by killing mosquitoes that contact the sprayed surfaces. This lowers the number of mosquitoes and the chance of people being bitten. This helps reduce disease and stop its spread.

Residual spraying kills *Aedes* mosquitoes and stops dengue, chikungunya and Zika.

Four important things to know are:

1. **Residual spraying kills mosquitoes when they land and rest on sprayed surfaces.**
   For *Aedes* mosquitoes, these are mainly locations in and around buildings where people gather during the day or sleep at night.

2. **Residual spraying can be done indoors and outdoors.**
   Spray locations will depend on whether mosquitoes land and rest mostly indoors (like *Aedes aegypti*) or outdoors (like *Aedes albopictus* and *Aedes polynesiensis*).

3 **Residual spraying continues to kill mosquitoes for several months after spraying.**
This can protect people throughout a disease outbreak, but this depends on the spray and surface types.

4 **Residual spraying is best used together with other mosquito control measures.**
These may target the water stages of mosquitoes by removing or cleaning containers or treating them with insecticides or may prevent biting through the use of insecticide-treated nets or insect repellents applied to the skin.

Where, **when**, **how** and **what** surfaces and chemicals to spray depend on local *Aedes* species, where they like to land and rest, and their susceptibility to insecticides.

What are risk communication and community engagement?

Risk communication and community engagement – often shortened to **RCCE** – are different, but they work best when done together.

Risk communication is the real-time exchange of information, advice and opinions between authorities and populations facing a hazard, such as an outbreak or natural disaster. The goal of risk communication is to help people to make informed decisions and take actions to reduce their risk of harm. Good risk communication involves two-way communication. It understands that there are many reasons why people may behave in ways that put them at risk, and that changing behaviour usually takes time.

Community engagement is about building relationships between authorities and the population and empowering people to lead change. It is when health authorities help people do things to protect themselves and each other from disease or other hazards. Good community engagement understands that different groups of people may have different needs or difficulties in protecting themselves from disease (barriers to protection). Because of these differences, people may need different types of help to reduce the risks they face.

Why is RCCE important for residual spraying?

People can have questions about what residual spraying is, what it does and if it is safe. Clear and early answers to these questions help people understand why residual spraying needs to be done. It also creates trust between health authorities and the population. This helps stop the spread of rumours, suspicion and wrong information.

This is important because when people trust health authorities, they are more likely to allow access to their homes, workplaces and public spaces for spraying. Residual spraying can therefore be done faster to prevent the spread of disease.

Residual spraying is more likely to succeed when communities are told what is happening and when they feel involved. Communities are more likely to work in partnership with authorities when:

- They understand what spraying is and why it is beneficial, making them more willing to allow spraying in and around their homes, workplaces and public spaces.
- They are more prepared for spraying, such as removing food and clearing surfaces.
- They are better equipped to recognise and question rumours or misinformation, including concerns about safety and effectiveness.

In addition:

- Those at higher risk or facing barriers to protection are more likely to be identified and supported appropriately.
- Stronger relationships between communities and health authorities are likely to be built, supporting future mosquito control efforts.

What is the purpose of this guide?

This guide is for public health managers and workers, and their community partners who are involved in residual spraying. It aims to help those involved take a planned approach to RCCE that starts early. It explains how to communicate and engage with the population and specific communities before, during, and after spraying. It also gives examples of who to talk to, how to talk, and what messages to share.

The guide is not a strict set of rules. It is meant to help plan an RCCE approach for residual spraying against *Aedes* mosquitoes that fits the local context and population needs.

The guide supplements *PacMOSSI Residual spraying against Aedes vectors in the Pacific: spray operator field guide*.

A staged approach to RCCE

It is best if RCCE for residual spraying is done before, during, and after spraying. **Figure 1** shows the stages of RCCE activities for residual spraying.

Figure 1. A staged approach to RCCE for residual spraying.

Below is more detail on each of these stages.

In the months before spraying

Good RCCE starts long before spraying commences. Engaging with communities early helps create relationships and build trust. It also helps to better understand the community's views and preferences so that RCCE can be tailored to meet their needs. Well-designed RCCE identifies populations within communities who may face higher risk or barriers to protection. This enables the development of tailored messages and approaches to reach these groups and provide the best possible community-wide protection.

Build relationships

Well before residual spraying starts, it is important to build rapport and trust with the community in the area to be targeted for spraying. This will help to identify their information needs and effective RCCE approaches and will assist in building trust.

Engagement can be through:

- local leaders
- community groups such as women's groups, church groups and youth groups
- representative organisations such as those for persons with disabilities
- council officers
- local health workers
- other important representatives

Practical activities that create opportunities for communities to learn, ask questions, share their knowledge, and raise concerns include:

- Trainings, talks and other public events
- Community discussions and focus groups
- Radio spots and talk-back shows
- Stalls at village and community events
- Face-to-face meetings with local health workers or other health authorities

Identify people with higher risks or barriers to protection

Some individuals, groups or populations living in areas where residual spraying is planned may be at higher risk from infection and disease. Some may experience barriers to being protected. Risks and barriers may be influenced by how information on mosquitoes, disease and residual spraying is received and understood. RCCE approaches should be designed with this in mind.

Consider which people:

Are more likely to be exposed to mosquito bites

Will experience worse illness if infected

Are hard to reach with health information

May have difficulties comprehending health information

Have fewer opportunities to ask questions

Have limited ability to take the actions needed to protect themselves

For these people, higher risks or barriers may be beyond their control because they result from:

- Where they live and spend time during peak mosquito biting times
- What work they do, where and when
- Their education level and ability to understand health information
- Their general health
- Their physical abilities
- Their exposure to social and other media
- Other social or cultural factors that influence their participation in health and RCCE activities

Table 1 provides examples of populations who may face higher risks of disease or barriers to being protected and illustrates the types of barriers they may experience. Use this to inform how you plan and tailor your RCCE activities. Remember to monitor and refine your approach over time.

Table 1. Populations who may face higher risks or barriers to protection, and examples of risks and barriers

Population	Examples of higher risks or barriers to protection
Older persons	• May have physical, cognitive, or communication support needs • At increased risk of severe disease and hospitalisation if infected with a mosquito-borne disease • Do not have computers or smartphones for information • Need help from other people to do things, such as going to meetings or other events • Not mobile so cannot leave the home before spraying
Persons with disabilities	• Difficulties with their body, brain and talking to people • Need to use a wheelchair and can't use stairs or bumpy roads • Do not understand spraying activities • Do not use or have access to written information • Excluded from some community events or meetings • Not mobile so cannot leave the home before spraying
People living with chronic illness	• Difficulties with their body, ears or eyes due to other illnesses • At increased risk of severe disease and hospitalisation if infected with a mosquito-borne disease • Need help from other people to do things, such as going to meetings or other events • Unable to go to meetings or other events because of pain, tiredness or because they have other medical appointments • Worried about spraying making them sicker

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Population	Examples of higher risks or barriers to protection
Women (including breastfeeding and pregnant)	• Not able to go to meetings or other events as they need to stay home to care for children or elderly • Worried about spraying being bad for them or their children
Children and young people	• Need age-appropriate explanation of spraying activities • Not able to ask questions • Do not use or have access to written information
People with low literacy	• Do not understand written information or instructions • Do not know how or may be uncomfortable to ask questions about the things they don't understand
Speakers of non-dominant or indigenous languages or dialects	• Do not understand information or may not know how to ask questions • Excluded from some community events or meetings • Lose trust if information is not understandable and respectful of their culture and language
People living in isolated and remote populations	• Not able to get information via the media • Get information later than everyone else • Do not have good or working phones • Do not have ready access to health workers or facilities • Not able to travel to participate in meetings or community events
People who may need decision-making support	• Need help from others to make decisions • Not asked their opinion or do not know how to ask questions • Do not go to meetings or other events
Migrants or itinerant workers	• Away from home when information is given or spray teams visit • Do not understand information if it is not in their language • Do not know or talk to local leadership and groups • Concerned about engaging with authorities due to employment or legal status

Develop key messages

Clear and actionable information is more likely to lead to changes in what people do.

While the processes involved in residual spraying are complex, it is important that key messages are simple and clear. They should be easy to understand for everyone. You will need to adapt your messages to meet the needs of different populations in the areas targeted for spraying.

Key messages will have different purposes. These may include:

1. **To raise knowledge** about residual spraying so communities understand what is being done and why.
2. **To build trust** between spray teams and the community.
3. **To provide instructions** about what occupants need to do before, during and after spraying.
4. **To address concerns or misinformation** that is circulating by listening, acknowledging and responding with information based on evidence.
5. **To prepare the way** for ongoing engagement with the community such as for follow-up spraying or other public health interventions.

Coordinate with other relevant organisations and partners to align messages and avoid confusion. These may include the health promotions team in the Ministry of Health, municipal councils, non-governmental organisations, or community-based groups. Set out a few key messages that everyone agrees on – and revise these together if needed.

Key messages should explain what residual spraying is, why it is needed, how it works, what households should do to prepare, and emphasise safety. Example key messages (**Appendix 1**) are:

- Reducing mosquitoes will reduce sickness
- Residual spraying is one method to rapidly control mosquitoes
- Residual spraying should be done with other measures to stop mosquitoes
- Residual spraying is carried out by professionals who know what they are doing
- Preparation and cooperation will be required from communities for residual spraying to succeed
- Take action if adverse effects are experienced during or after spraying

From key messages, more detailed messages can be developed. See **Appendix 1** for key and supporting messages.

Define communication approaches

RCCE does not always need to be delivered by health teams.

Others may be better placed to convey messages. This is often the case when aiming to reach populations at higher risk and facing barriers to protection.

People are more likely to act on information when it is delivered by someone they know and trust, when it is personalised, and when there is clear instruction for what to do. Continue to work with individuals and groups known and trusted by the community to deliver key messages in ways that are locally meaningful, accessible, and credible. For example, checklists for use by communities to prepare their homes, workplaces and public spaces before spraying can help guide action.

Five general RCCE methods that have been successful in the Pacific are:

Face-to-face community or small-group meetings

Local radio or community loudspeakers

Call-in or talk-back radio shows

Posters, brochures and flyers

Social media or Short Message Services (SMS)

Key communication approaches are outlined in **Figure 2**. These approaches should be adjusted to best meet the needs of the community in the area for spraying.

Examples of adapted approaches for reaching populations with higher risks and barriers to protection are in **Figure 3**.

Figure 2. Example RCCE approaches.

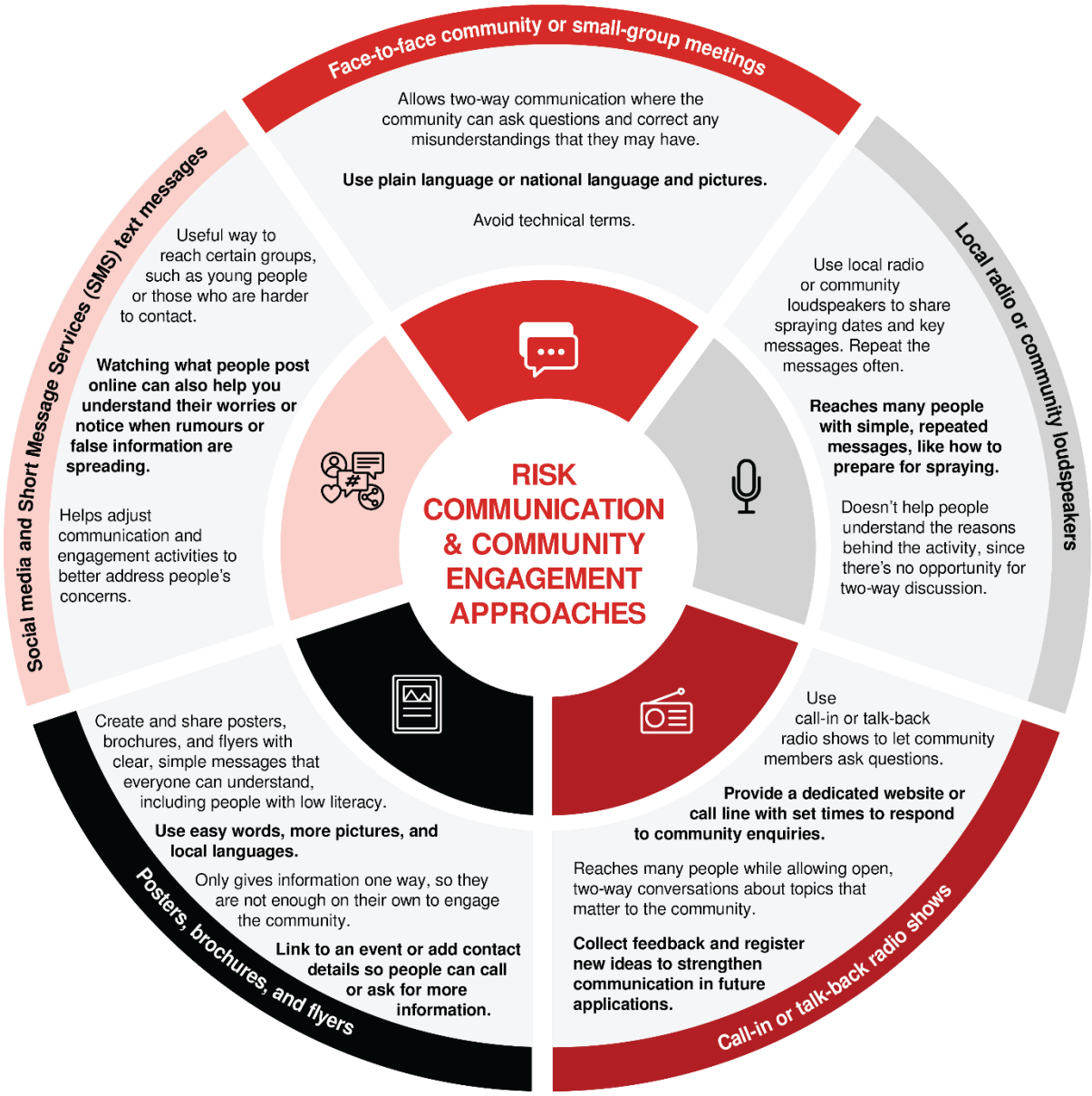


Figure 3. Example RCCE approaches adapted for populations with higher risks or barriers to protection. See **Appendix 2** for further examples.

Listen and respond to concerns

The community should be able and encouraged to ask questions, provide suggestions, share insights, and report rumours or misinformation circulating in their community. Open, constant and transparent communication that listens to people as well as provides information is 'best practice' in RCCE. See **Appendix 3** for guidance on dealing with misinformation.

Additional effort is often needed to make sure that people who are more vulnerable, face barriers, or have specific communication needs can take part in RCCE activities. This includes people or groups affected by factors such as gender, ethnicity, disability, or social status. These groups should be supported in accessing information, asking questions, and contributing on an equal basis.

Information and insights from listening can be used to adjust RCCE to better support residual spraying.

In the days before spraying

In the days before spraying, it is important to advise or remind the community when spraying will occur, to get permission, to provide advice on preparing their homes, workplaces or public spaces for spraying, and to address any remaining concerns they may have.

Advise when spraying will be done

Remind occupants of homes, workplaces, and public spaces (such as schools, older persons' homes, and health facilities) when the spray team will arrive so they can prepare. Multiple reminders of the **date and time** of spraying may be needed.

Provide this information through:

- door-to-door visits
- text messages
- posters, brochures and flyers
- announcements in church, community meetings, or at local markets.

Draw on your local knowledge to decide what communication approaches will work best.

Get permission for spraying

If possible, engage with authorities, community leaders or household heads in advance to get permission for teams to enter communities, homes, workplaces and public spaces.

Provide instructions about how to prepare

Provide occupants with information about what will happen on the day of spraying and what they need to do. Clear instructions help ensure everyone understands the process, knows what to expect and feels comfortable. See **Table 2.**

Continue to address any concerns

Engagement at this time also creates an opportunity for people to think about and ask questions. Be open to listening to the community and answering the questions they ask. Keep a record of common questions and proposed answers, and share with the spray team and others engaged in RCCE. See **Appendix 4** for common questions and responses.

On the day of spraying

Clear communication and professionalism are essential when visiting communities, homes, workplaces or public spaces.

Check occupants are prepared for spraying

On the day of spraying, before spraying commences, the spray team should:

1. **Introduce themselves** and ask for permission before entering the home, workplace or public space.
2. **Explain** in detail what will happen during and after spraying. **See Table 2**.
3. **Confirm** with the household head (or another adult) that permission is granted for the spray team to do spraying.
4. **Check** that occupants have prepared the home, workplace or public space. If not, help them or arrange to return later.
5. Ensure **all people, pets, and animals have left the home** before spraying starts. Provide support where needed, including assisting older persons or persons with disabilities to move outside safely.
6. Ensure occupants **understand** that they and their pets and animals can only go back into the home, workplace or public space once:
   - the insecticide is dried
   - it has been ventilated for at least 30 minutes
   - dead insects have been swept up and disposed of (see **Figure 4**).

Continue to address any concerns

There may be more questions or issues that also need to be dealt with during spraying. It is important that any questions or concerns are addressed before spraying commences. The spray team should stay open and responsive to community needs for information and reassurance.

Provide post-spraying reminders and instructions

Immediately after spraying is finished, spray teams should:

1. **Remind** people when they can re-enter the home, workplace or public space (Figure 4).
2. **Advise** everyone to contact a health facility (or call the provided number) if they have questions or feel unwell after spraying.
3. **Stress** that if anyone develops severe symptoms, they should immediately go to the nearest health facility or call emergency services.
4. **Leave** the area clean and tidy by removing any rubbish generated during the visit (e.g., food containers, drink bottles, or other materials brought by the team).
5. **Finish** by thanking occupants, community leaders, and the wider community for their cooperation and support during spray activities.

Figure 4. Timeline for entering homes, workplaces and public spaces after spraying.

In the weeks after spraying

If possible, go back to communities a week or two after spraying to check how things went and to keep people involved in mosquito control.

Check back with communities

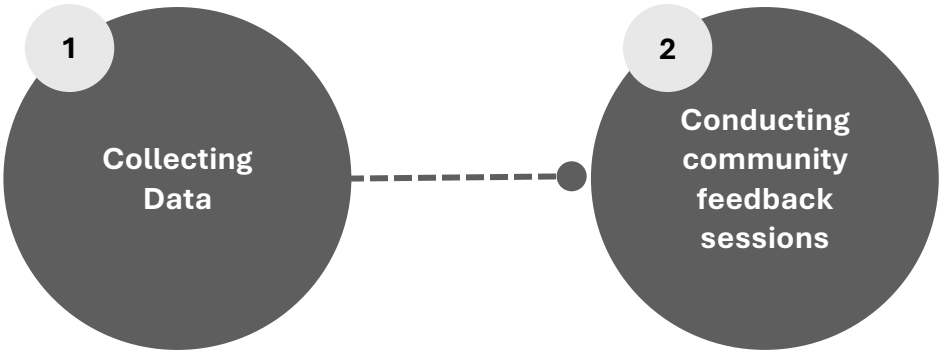
During your visit:

- **Share information about how the spraying went** (e.g., how many houses were sprayed, change in mosquito numbers since spraying) with communities to build trust and show impact.
- **Check whether occupants and the broader community are satisfied** and whether any issues have occurred.
- **Ask for and listen to community feedback**, including from all populations within a community. Correct misunderstandings and rumours, and record feedback. Rumours can appear after the event (e.g., someone might have become unwell, or an animal may have died by coincidence around the same time, and blame is placed on the spraying).
- **Collect additional information on mosquito populations** (e.g., using traps or larval surveys) and cases of mosquito-borne disease if possible.
- **Encourage continued community engagement** in clean-up campaigns and other prevention activities and reinforce the importance of a combined approach for better protection.
- **Reinforce that anyone suspected or confirmed to have dengue, Zika or chikungunya** should take steps to avoid mosquito bites, especially during the first few days of illness when biting mosquitoes can become infected. This includes using repellents, wearing long sleeves or trousers, and resting or sleeping under a bed net.

Evaluate the impact of RCCE

An important activity after any intervention is to evaluate what went well and what did not. Checking how well your RCCE activities were received by different groups (e.g., households where the spray was applied, households in which spray was not applied, older persons, persons with disabilities) helps improve RCCE next time.

Evaluation includes:



Document and keep records of information given and engagement initiatives and sessions, noting who attended and any key discussions. Record any key community questions or concerns, and any important responses. Be sure to note any adjustments made to the RCCE approach throughout the different stages.

Gather community feedback through diverse methods — including one-to-one conversations, home or workplace visits, group discussions, community meetings, suggestion boxes, surveys, and social and traditional media scanning. Engage varied population groups to capture broad perspectives on RCCE activities and identify areas for improvement.

Don't forget to seek the views of populations at higher risk and facing barriers to protection. To do this, you may need to think creatively to involve these groups, such as by working with organisations that represent them.

Identify improvements for next time

The evaluation information can be used to **adapt** RCCE approaches. For instance, adjustments can be made to key messages, audiences, communication methods and schedules to get the best results from RCCE. This can be done for the next spray round in the same area, or for spraying in other areas.

It is also important to **share results with authorities and communities**. Showing how residual spraying and other control measures reduce mosquito numbers and disease cases will build community confidence and encourage lasting change in what people do. This can help in advocating for continued or expanded spray operations. See **Appendix 5** for guidance on how to build community and political support.

Ensure you continue to listen to feedback and engage with the community even after the spraying has finished. What happens in one area can affect acceptance of residual spraying in another area. It is important to continue monitoring and engaging with community to maintain trust and be ready to respond to rumours or misinformation.

Table 2. Information and instructions to provide occupants before, during and after spraying

When	Information and instruction
In the month before spraying	What you need to know **during planning** for residual spraying**:** • Residual spraying is a method used to reduce *Aedes* mosquitoes and lower the risk of diseases such as dengue, Zika, and chikungunya in your community. • Spraying works best when your community is informed, prepared, and willing to cooperate. • Listen for messages shared through trusted community leaders, local health workers, and community groups. • Ask questions, raise concerns, and report rumours or misinformation to your local health worker or spray team. • Let your local health worker or spray team know if you or anyone in your household may need extra support before or during spraying.
In the days before spraying	What you need to do **before the spray day:** • Residual spraying is safe if you follow the instructions of authorities before, during, and after spraying • On the day of spraying, you are expected to: – Notify the spray team if there are sick, disabled or older persons or animals who require assistance or cannot be moved outside – Notify the spray team if a room or area cannot be sprayed. – Prepare the areas to be sprayed: • Cover or remove items such as water, foodstuffs and other consumables, cooking utensils and food containers, bedding and clothing, and children's toys • Put away all items of value • If required, take down pictures, wall hangings and posters • Give spray teams access to areas where spray will be applied, including your home and associated structures (e.g. kitchens, sheds, cookhouses), workplaces and public spaces. • Be prepared to remain away from all structures being sprayed for around 2 hours on the day of spraying.
On the day of spraying	What you need to do **immediately before spraying**: • Do not be present where pesticides are being mixed (particularly children and pregnant and breastfeeding women) • Allow spray teams to enter your homes, workplaces and public spaces plus associated yards and structures

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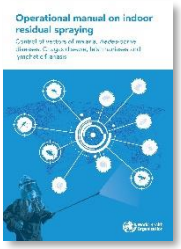
	• If you wish to refuse entry to some or all structures, please advise the team leader • Remain at least 10 metres away from your home during spraying • Relocate pets and domestic animals, caged or leashed, away from your home • Notify the spray team if there are any rooms or structures that cannot be sprayed, such as if there are sick residents who cannot be moved • Do not prepare food near your home during spraying
On the day of spraying	What you need to do **immediately after spraying**: • You and your animals must remain outside until the sprayed walls and surfaces have dried, which normally takes 1 hour but depends on surfaces sprayed and climatic conditions. • After that, open doors and windows to ventilate for at least 30 minutes. Odour will fade away as the insecticide dries and the room is ventilated. • Then, sweep the floors free of residual pesticide and insects killed by the spraying and dispose of the swept material in a waste disposal (toilet, latrine pit, outhouse, or similar) or by burying. Dead insects may continue to appear after spraying as the insecticide continues to act. • Occupants may re-enter only after sprayed surfaces have dried, your home has been ventilated, and dead insects have been swept up. Keep children, pregnant women, and animals out until then (See **Figure 4**).
In the weeks after spraying	What you need to do in the weeks **after spraying**: • Do not to wash, clean or cover the walls so that insecticide can keep killing mosquitoes. • A spray team will return for a second spray if required. • If anyone develops severe symptoms after spraying, go immediately to the nearest health facility or call emergency services. • If anyone feels unwell after spraying or has questions, contact a health facility (or call a number provided). • If you are sick with dengue, Zika, or chikungunya, avoid mosquito bites - especially in the first 5 days of illness. Use repellent, wear long clothing, and sleep under a net.

More information

Further information can be found in these key documents.

Residual spraying against *Aedes* vectors in the Pacific spray operator field guide. Available at: https://pacmossi.org/resource/field-guide-residual-spraying-against-aedes-vectors-in-the-pacific/



Operational manual on indoor residual spraying: Control of vectors of malaria, *Aedes*-borne diseases, Chagas disease, leishmaniases and lymphatic filariasis. Available at: https://www.who.int/publications/i/item/9789240083998

Appendices

Appendix 1. Example key messages

Below are common key and supporting risk messages that you may use or adapt. You do not need to use all of these - just the ones that are relevant. This is a starting point and can be supplemented with messages that respond to the unique questions and information needs of the communities you work with.

Key message	Supporting messages
Reducing mosquitoes will reduce sickness	• Dengue, chikungunya and Zika are transmitted to people through the bite of infected female *Aedes* mosquitoes • *Aedes aegypti* is a common mosquito that is the most likely to transmit dengue, chikungunya and Zika virus in the Pacific. • *Aedes aegypti* bites people during the day and usually lands or rests indoors and around homes and public spaces like markets, schools and churches. • Favourite sites for this mosquito to land and rest include dark corners, under beds, tables or chairs, and in cupboards or behind curtains. • Other common mosquito species that transmit these viruses are called *Aedes albopictus* and *Aedes polynesiensis*. These mosquitoes can land and rest indoors too but are more likely to land and rest outside around buildings, such as under outdoor furniture or in foliage or vegetation. • *Aedes* mosquitoes lay their eggs at the edge of clean water in bottles, cans, shells, the junction where the plant leaf joins the stem, flower vases, buckets, old tyres, roof gutters, tanks etc. – basically any place where rain or tap water accumulates and stagnates. • Getting rid of the mosquitoes and stopping them from biting people will stop the disease.

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Key message	Supporting messages
Residual spraying is one method to rapidly control mosquitoes	• Residual spraying is an effective method to rapidly kill *Aedes* mosquitoes during an outbreak. • To kill *Aedes* mosquitoes, insecticides can be sprayed onto surfaces where they commonly land and rest. Depending on the species, this can be indoors on walls and under furniture, or outdoors in foliage or vegetation. • Residual insecticides are long-lasting and will continue to kill mosquitoes for several months after spraying (depending on the insecticide used). • The success of residual spraying relies on good quality spraying, broad community acceptance and community cooperation that allows spray teams to access properties so that all appropriate surfaces can be sprayed. • The aim is to spray the surfaces in all homes, workplaces, public spaces and associated buildings in areas where there are likely to be mosquitoes. It may need to be re-applied by spraying again after several months (depending on the insecticide used). • Residual spraying is different from fog spraying. Fogging has no residual (long-term) effect. It relies on the insecticide in the air coming into contact with mosquitoes while they are flying and hence is only useful for a short time.
Residual spraying should be done with other measures to stop mosquitoes	• Residual spraying is effective at reducing the mosquitoes that spread dengue, Zika and chikungunya, but it will not kill all mosquitoes or stop them from breeding. • For the best protection, it should be combined with other control measures, such as reducing water habitats where they lay their eggs, using bed nets and repellents, and covering up to prevent biting.
Residual spraying is carried out by professionals who know what they are doing	• Spray teams are trained in the safe use of insecticide. • The insecticides used are designed and registered for public health use.

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Key message	Supporting messages
	• The insecticides are used across the world to great effect. • The spray team will provide instructions to keep everyone and your animals and pets safe. People should follow these instructions to ensure the spraying is safe. • People are encouraged to ask questions and opportunities will be provided to do so.
Preparation and cooperation will be required by communities for residual spraying to succeed	• See instructions for communities before, during and after spraying (**Table 2**)
Take action if adverse effects are experienced during or after spraying	• While residual insecticides are safe when applied correctly, some people can experience irritation during or after the process of spraying when the sprayed surface is still wet. • We advise you to: – not to enter the home, workplace or public space until sprayed surfaces have dried, which is normally 1 hour but depends on the surface sprayed and climatic conditions, – then ventilate for at least 30 minutes, and – sweep and dispose of the swept material safely. • If skin irritation is experienced, wash with soap and clean water. • For eye irritation, flush eyes with clean water. • For respiratory irritation, leave the home for fresh air. • If someone ingests insecticide, immediately go to the nearest health facility or call emergency services. Bring the name or container of the insecticide, if possible, to help identify the best way to treat. • If symptoms persist, contact program staff or go to nearest health facility.

Appendix 2. Engaging populations with higher risks and barriers to protection

Some populations face greater exposure to mosquito-borne diseases, have specific safety concerns, or have fewer opportunities to influence decisions. **RCCE activities should deliberately include these groups at all stages.**

Practical strategies that those responsible for RCCE activities may consider for engaging these populations are outlined in the table below.

When	What
In the months before spraying	1. Map who may need additional support (e.g., occupants with mobility limitations, single-headed households, isolated older persons). 2. Work with women's groups, youths, organisations of persons with disabilities, faith leaders and community health or other development workers to understand needs and preferred communication approaches. 3. Assign members within the RCCE team responsible for inclusive engagement.
In the days before spraying	4. Ensure community engagement events are held at times and locations that are safe and accessible including for women, older persons and persons with disabilities. 5. Create safe opportunities for questions (e.g., small group discussions, women-only forums where culturally appropriate). 6. Provide messages in formats and languages that all groups can understand and access. 7. Use multiple formats: verbal explanation, sign language, visual aids, demonstrations, and, where possible, audio messages. 8. Ask in advance if there is anyone who cannot leave the home, workplace or public space easily and if they need assistance.
On the day of spraying	9. If residents cannot be moved safely, adjust the spraying plan in consultation with the individual and other occupants. 10. Ensure spray teams are briefed to act respectfully and uphold a "do no harm" approach when engaging with communities, including populations with higher risk and barriers to protection. This includes avoiding stigma, discrimination, harassment, or any form of exploitation, and ensuring that all interactions are conducted with dignity, consent, and cultural sensitivity.

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When	What
After spraying	11. Actively seek feedback from groups facing higher risk and barriers to protection during follow-up visits. 12. Provide accessible channels for complaints or questions (e.g., trusted community contact, representative organisations, health worker, suggestion box). 13. Continue to seek understanding of why some people may have chosen not to participate or may have concerns and use this information to improve future approaches.

Inclusive RCCE strengthens trust, improves acceptance of residual spraying and helps ensure that protection reaches those most at risk. It is also a best practice.

Appendix 3. Dealing with misinformation

Misconceptions and rumours can undermine community acceptance and hence the success of spraying programmes. It is important to monitor and promptly address rumours from the very beginning: waiting until they have spread makes it much more difficult to respond to.

A clear and systematic mechanism should be established to actively detect, verify, document, respond and follow up on community questions, concerns, rumours, and misinformation related to spraying. This should draw on information from spray teams, health workers, community leaders, faith leaders, hotlines or feedback numbers, social media, community meetings, and other relevant communication channels. Regular review of this information should be used to identify emerging issues early, update FAQs and key messages, and ensure that all members of the spray team and communication partners provide timely, accurate, and consistent responses throughout the spraying activities.

The table below lists common misconceptions and rumours, and suggested responses.

Misconception / rumour	Suggested response
"The spray will poison my family and our animals"	• The product used for residual spraying has been designed, evaluated and registered for public health use. • The spray contains insecticide in very small amounts to be harmful to mosquitoes but not to people. • Spray operators wear protective equipment because they work directly with wet insecticide throughout the day. Occupants do not have the same level of exposure. • It is therefore safe for all people and pets and other animals once it is dry and if instructions are followed.
"Spraying doesn't work; we still have mosquitoes"	• Residual spraying targets the *Aedes* mosquitoes that spread dengue, Zika and chikungunya. When these mosquitoes land on sprayed surfaces, they are killed. • The spray continues to work for several months (depending on the insecticide used), reducing the number of mosquitoes over time. You may still see some mosquitoes, including other types that do not spread diseases. • Residual spraying is one of the most effective ways to quickly reduce disease-carrying mosquitoes during an outbreak. • For the best protection, it is used together with other simple actions, such as removing standing water around homes,

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Misconception / rumour	Suggested response
	workplaces and public spaces, and using personal protection (e.g. repellents, long sleeves, screens). These actions help reduce mosquito breeding and prevent bites.
"Spraying will damage my walls or furniture"	• The insecticide spray used will leave little or no visible residue. It should not stain walls or furniture. If you are concerned, move delicate or valuable items away or cover them with cloth.
"The government is hiding the real purpose of spraying"	• We understand why people might feel unsure — it's okay to ask questions. • The purpose of spraying is to kill the mosquitoes that spread dengue, chikungunya and Zika — nothing else. • The spray is designed to target mosquitoes. Once it dries, it is safe for people and pets. • These mosquitoes often rest on walls inside homes, so spraying walls helps protect family members and the community. • We can show you what we do, what product we use (including the label), and answer your questions before we start. • If you've heard a concern or rumour, please share it with us so we can address your concerns directly.

Appendix 4. Responding to common questions

It is important to keep a log of common questions and suggested responses. These can be printed and given to field teams for reference to ensure consistency in responses. These can be updated as the situation evolves, and as new questions arise. Some proposed key questions are outlined below.

Is the spray harmful to families?
No. The insecticide sprayed on surfaces is safe for all people, as well as pets and other animals once it **dries**. Spray operators wear protective gear because they spray multiple locations daily and need protection from repeated exposure.

Can pregnant women, children, or sick people remain in the home during spraying?
No. It is recommended that all residents, if able, leave during spraying and wait outside until the insecticide has dried (which is normally 1 hour but depends on the surface sprayed and the climatic conditions), the home has been ventilated for at least 30 minutes, and dead insects have been swept up. If they cannot move from the home, then the spray team must be notified to change their spray method or to avoid that room.

What should households do with food, water, and utensils before spraying?
All food, drinking water, cooking utensils, toys, and bedding must be removed or covered before spraying. This avoids contamination and ensures safety.

Will spraying kill all mosquitoes immediately?
No. It works by coating surfaces where common *Aedes* mosquitoes land. The mosquito population is reduced over days, weeks and months as they land. People may still see some *Aedes* or other mosquitoes, but their numbers will steadily decline. All dead insects should be removed from the building.

Why don't spray teams spray kitchens, food areas, or water tanks?
To prevent contamination, certain areas are left unsprayed. Only walls, furniture, and other common resting locations are sprayed. Kitchens and drinking water containers are left unsprayed for safety. In some situations, a **different product** (a larvicide) may be used to treat **water-holding containers** to stop mosquito larvae from developing. This is a separate activity from residual spraying, and teams will explain if it is being used.

What if someone feels unwell after spraying?
Mild skin or eye irritation can happen. Wash the affected area with clean water. If symptoms persist or if someone has trouble breathing, seek medical help and inform the spray team leader if they are still in the community.

What if I don’t want my home sprayed?
It is your choice. While residual spraying offers among the highest levels of protection for you and your family, you are not obliged to have it done in your home. There are other things you can do to reduce your risk of being bitten, such as cleaning up water habitats around your home, screening windows and doorways, wearing long and light-coloured clothing, and using repellents or mosquito nets if you are at high risk.

Appendix 5. Building political and community support for residual spraying

Strong support from political and community leaders is important for the success of residual spray and other mosquito control activities. Health workers and managers can help make sure residual spraying is understood, valued and supported at all levels.

Here are some simple ways to advocate for residual spraying to your peers and leaders:

- **Use positive language:** Present residual spraying as a community-focused approach that builds trust and shows the Ministry's commitment to protecting the health and well-being of everyone.
- **Link to national goals:** Explain how residual spraying helps control outbreaks, and, by doing so, supports National or Government Health goals. Mention links to regional initiatives like those of the WHO, SPC and the PacMOSSI consortium.
- **Share results often:** Give short updates to senior staff that include progress, challenges and success stories. Use photos, short quotes and success stories from communities to show impact. These updates can also be extended to other partners.
- **Use clear evidence:** Share simple facts and numbers — for example, how many homes, workplaces and public spaces were sprayed, how inclusive participation improved, or how arboviral cases dropped.
- **Show value for money:** Explain that good communication reduces refusals or rejection and saves time and money. Emphasise that well-planned residual spraying lasts longer and works better than emergency fogging.
- **Work together:** Encourage collaboration between public health, surveillance, health promotion, environmental health and communications teams, other relevant partners and representative organisations and community leaders.
- **Plan and budget:** Ask that RCCE, including its monitoring and evaluation, be included in all vector control and outbreak response plans.

Advocating for residual spraying means showing these interventions are not just a technical job, but that they can be used to build trust, prepare communities and make health interventions more impactful.

Simple, clear communication that demonstrates success, and regular updates help keep leaders and communities engaged and supportive.

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