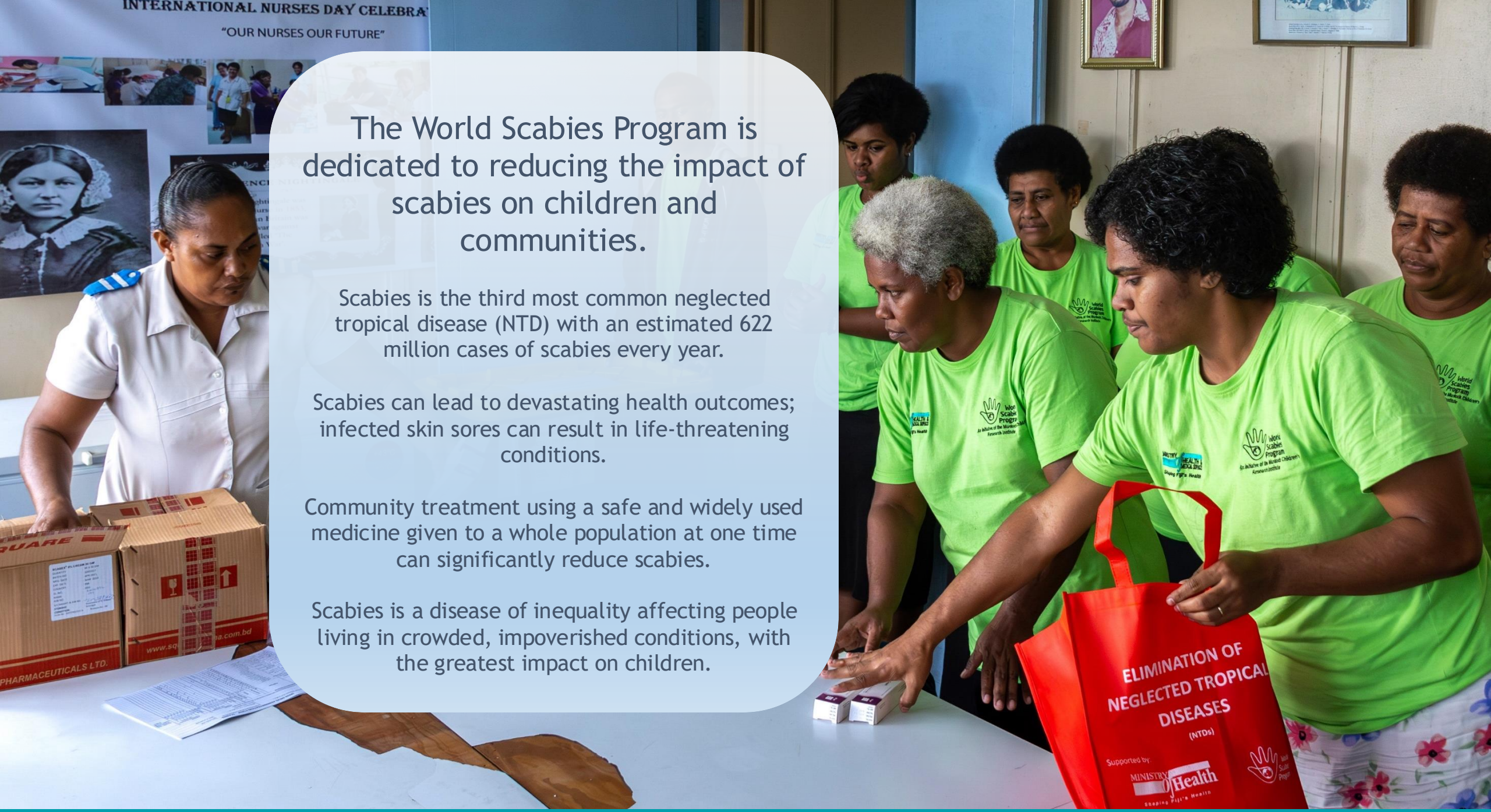
# World Scabies Program

## Information Package

murdoch children's research institute




# The World Scabies Program is dedicated to reducing the impact of scabies on children and communities.

Scabies is the third most common neglected tropical disease (NTD) with an estimated 622 million cases of scabies every year.

Scabies can lead to devastating health outcomes; infected skin sores can result in life-threatening conditions.

Community treatment using a safe and widely used medicine given to a whole population at one time can significantly reduce scabies.

Scabies is a disease of inequality affecting people living in crowded, impoverished conditions, with the greatest impact on children.

# Information Package

This information package is designed to give an overview of the program.

The World Scabies Program invites colleagues, partners and stakeholders working within the NTD global network to share this information package amongst their own networks.

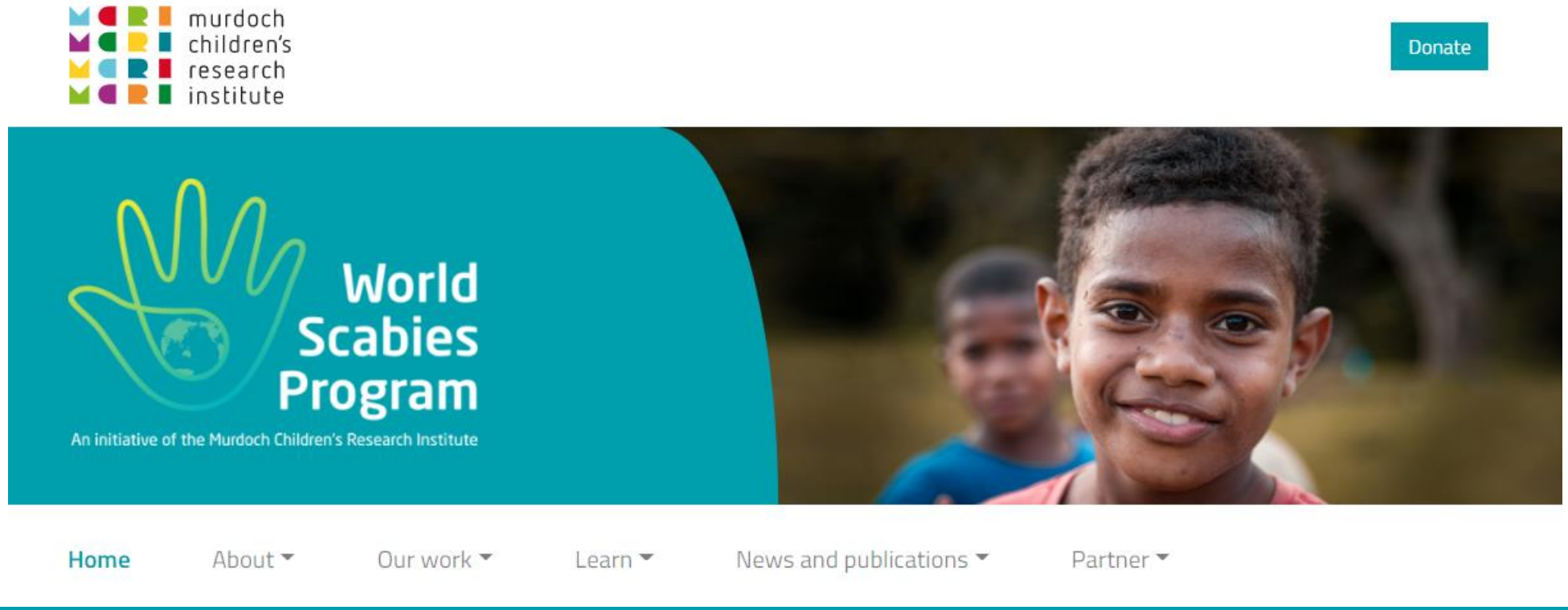
## Package Contents

*click on any link to be directed to an area of interest*

# WSP Website

The WSP website includes updates on the latest news, country program updates and access to the most recent scabies publications and programmatic guidelines for scabies elimination.

www.worldscabiesprogram.org



# Background

# What is Scabies?

- tiny female mites burrow into the skin and lay eggs
- mites cause papules and an intense itch
- typical burrow locations include fingers toes, wrists, buttocks and genitals
- transmission occurs person to person, primarily through direct skin-to-skin contact
- spreads easily in crowded conditions; schools, villages, refugee camps and prisons
- infected skin sores (impetigo) can result in life-threatening conditions

# Scabies Global Burden


scabies mite

Scabies is the third most common NTD, with an estimated 622 million people globally affected by scabies annually.[1]

In 2017, the World Health Organization (WHO) adopted scabies as a WHO-listed NTD in response to the high burden of scabies and its complications, particularly in areas with limited access to health care.

Of the currently listed NTDs, only intestinal worms (soil-transmitted helminthiases) and snail fever (bilharzia or schistosomiasis) affect more people globally than scabies.[2] Scabies is one of the highest-burden NTDs with 5.3 million disability-adjusted life-years (DALYs).[1] The estimated burden would be far greater if the morbidity and mortality caused by the complications of scabies were also included in estimates of disease burden. [2, 3]

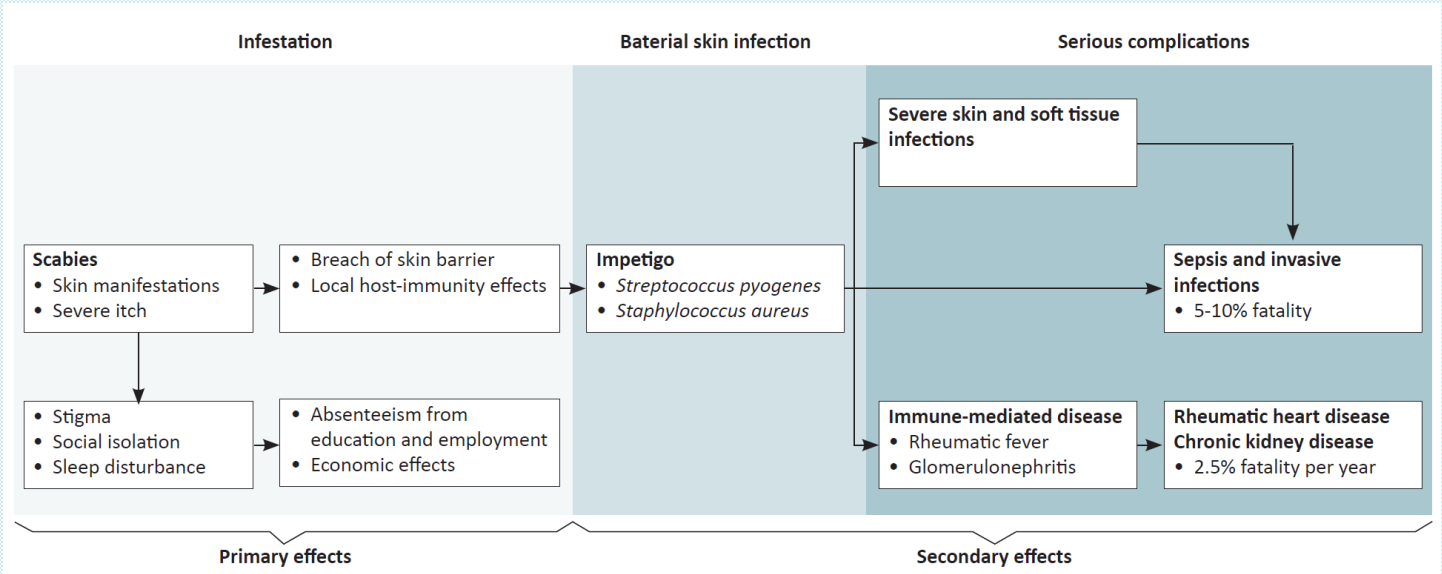
1 Institute for Health Metrics and Evaluation. Disease, injury, and risk factsheets: Scabies - Level 3 cause. The Lancet. 2024.
2 Karimkhani C, Colombara DV, Drucker AM et al. The global burden of scabies: a cross-sectional analysis from the Global Burden of Disease Study 2015. Lancet Infect Dis 2017; 17:1247-54. https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(17)30483-8/fulltext
3 Engelman D, et al. The public health control of scabies: priorities for research and action. Lancet Infect Dis. 2019; 394: 81-92. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)31136-5/fulltext

# Scabies Complications

Scabies causes an intense itch and individuals with scabies may scratch so much they draw blood. When the skin breaks, bacteria (particularly Staphylococcus aureus and Streptococcus pyogenes, Strep A) can enter the skin, often resulting in bacterial skin infections called impetigo.

Impetigo can in turn be complicated by deeper skin infection such as abscesses, as well as serious invasive disease and sepsis. Impetigo can also lead to immune mediated complications such as glomerulonephritis (kidney disease) and possibly acute rheumatic fever, which can lead to rheumatic heart disease. Scabies also impacts quality of life, causing stigma and sleep disturbance. Figure 1 illustrates the stages of primary and secondary effects of scabies infestations on an individual level.

Figure 1. Primary and secondary effects of scabies infestation




Source: Engelman D, et al. The public health control of scabies: priorities for research and action. Lancet Infect Dis. 2019; 394: 81-92. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)31136-5/fulltext

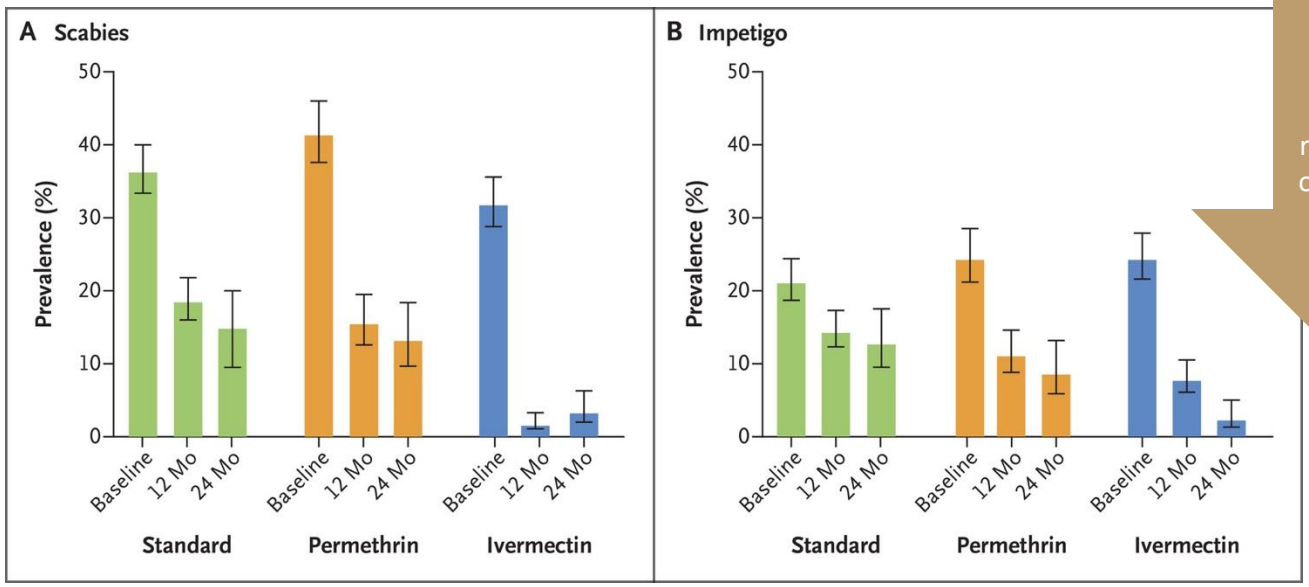
# Innovative Research - Fiji

WSP is the result of years of collaboration between the Murdoch Children's Research Institute, the Kirby Institute at the University of New South Wales and the Fiji and Solomon Island's Ministry of Health and Medical Service (MHMS) to conduct research and find new ways to reduce the burden of scabies in the community. Over the last decade, key studies have shown the community-based treatment known as mass drug administration (MDA) using the medication ivermectin is able to reduce scabies prevalence by over 90%, and that this reduction in scabies is sustained for 2 years.

### Skin Health Intervention Fiji Trial (SHIFT) 2012-2013

The SHIFT study randomly assigned three island communities to one of three different interventions for scabies control: i) standard care involving the administration of permethrin to affected persons and their contacts (standard-care group), ii) mass administration of permethrin (permethrin group), or iii) mass administration of ivermectin (ivermectin group). From baseline to 12 months, the prevalence of scabies declined significantly in all groups, with the greatest reduction seen in the ivermectin group.[4]

Figure 2. Prevalence of Scabies and Impetigo in the Study Population during 2 Years of Follow-up




**90%** relative reduction of scabies

Source: Romani L, Whitfeld MJ, Koroivueta J, Kama M, Wand H, Tikoduadua L, Tuicakau M, Koroi A, Andrews RM, Kaldor JM, Steer AC. Mass Drug Administration for Scabies - 2 Years of Follow-up. N Engl J Med. 2019 Jul 11;381(2):186-187. https://www.nejm.org/doi/10.1056/NEJMc1808439

4 Romani L, Whitfeld MJ, Koroivueta J, Kama M, Wand H, Tikoduadua L, et al. Mass drug administration for scabies control in a population with endemic disease. N Engl J Med. 2015;373:2305-13. https://www.nejm.org/doi/full/10.1056/nejmoa1500987

# Innovative Research – Solomon Islands

**AIM Solomon Islands 2015**

Mass drug co-administration involving azithromycin and ivermectin, offered to an entire island population in the Choiseul Province, Solomon Islands (>26,000), with two sets of ten sentinel villages selected for monitoring over 12 months in 2015. [5] The study evaluated the safety and feasibility of mass drug co-administration, finding that the combination of ivermectin/azithromycin in MDA in a population of over 25,000 was safe and feasible. [5] The ability to administer these medicines together enables opportunities to integrate scabies MDA with other NTD programs.

**88%** relative reduction of scabies

Figure 3. Prevalence of Scabies and Impetigo at baseline and 12 months in the AIM study

| | Baseline | 12 months | Absolute reduction in prevalence | Relative reduction in prevalence |
|---|---|---|---|---|
| **Scabies** | | | | |
| n/N | 261/1399 | 29/1261 | .. | .. |
| Prevalence | 18·7% (16·7–20·8) | 2·3% (1·6–3·3) | 16·4% (14·2–18·6) | 88% (76·5–99·3) |
| **Impetigo** | | | | |
| n/N | 347/1399 | 81/1261 | .. | .. |
| Prevalence | 24·8% (22·6–27·1) | 6·4% (5·2–8·0) | 18·4% (15·7–21·0) | 74% (63·4–84·7) |

Data are n/N and prevalence, with 95% CIs in parentheses.

Source: Romani L, Marks M, Sokana O, Nasi T, Kamoriki B, Cordell B, Wand H, Whitfeld MJ, Engelman D, Solomon AW, Kaldor JM, Steer AC. Lancet Infect Dis. 2019 May;19(5):510-518. doi: 10.1016/S1473-3099(18)30790-4. PMID: 30956111. https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(18)30790-4/fulltext

5 Romani L, Marks M, Sokana O, Nasi T, Kamoriki B, Wand H, et al. Feasibility and safety of mass drug co-administration with azithromycin and ivermectin for the control of neglected tropical diseases: a single-arm intervention trial. Lancet Glob Health. 2018;6:e1132-8. https://pubmed.ncbi.nlm.nih.gov/30223985/

# WSP Overview

# WSP Mission

The World Scabies Program mission is to translate scabies control research into **global public health action** to scale up and eliminate scabies from whole populations, to alleviate suffering and reduce morbidity in communities caused by scabies.

The World Scabies Program is working with governments and partners to **eliminate scabies as a public health problem**.

WSP aims to put scabies control on **national and global agendas**, provide guidance and support implementation for **community wide treatment strategies**, and **strengthen health systems** to monitor and manage scabies.

# WSP Global Strategy

Raising **global awareness** of scabies as a public health problem

Contributing to the **global efforts** in scabies mapping, control and research

WSP will support and advocate for the **global uptake** of a community-based approach to scabies control in countries with high prevalence.

Developing implementation-ready **guidance** for scabies e.g. MDA and mapping

Supporting **countries** to implement a control strategy for scabies

Engaging with pharmaceutical industry, regulators and donors to achieve sustainable and affordable supply of **medicines**


# WSP Approach

# WSP Approach

## Assess Prevalence

Determine scabies and impetigo prevalence through national prevalence surveys

## Mass Drug Administration

Annual MDA campaigns (if indicated)
Aim to treat more than 80% of the population

## Health Systems Strengthening

Community understanding of the importance and safety of MDA and how to maintain healthy skin after the MDA

# Assess Prevalence

As scabies is a *neglected* tropical disease the national burden is often unknown. WSP works with countries to determine the burden of scabies and impetigo by conducting national prevalence surveys. These surveys are done in partnership with local ministries of health and are integrated with other public health programs where possible.

These surveys are cross-sectional and done at the national level, meaning they capture the prevalence of scabies and impetigo within the entire population at a given time. This approach enables ministries of health to determine if a national scabies control program is needed, which may include MDA.

The surveys are conducted by local nurses and healthcare workers, who are trained by WSP, ensuring a culturally competent approach. Cases of scabies determined through the skin examination survey are offered treatment, and serious cases are referred to local health facilities.

6 WHO informal consultation on a framework for scabies control, World Health Organization Regional Office for the Western Pacific, Manila, Philippines, 19–21 February 2019: meeting report. Geneva: World Health Organization; 2020. https://www.who.int/publications/i/item/9789240008069

# Mass Drug Administration (MDA)

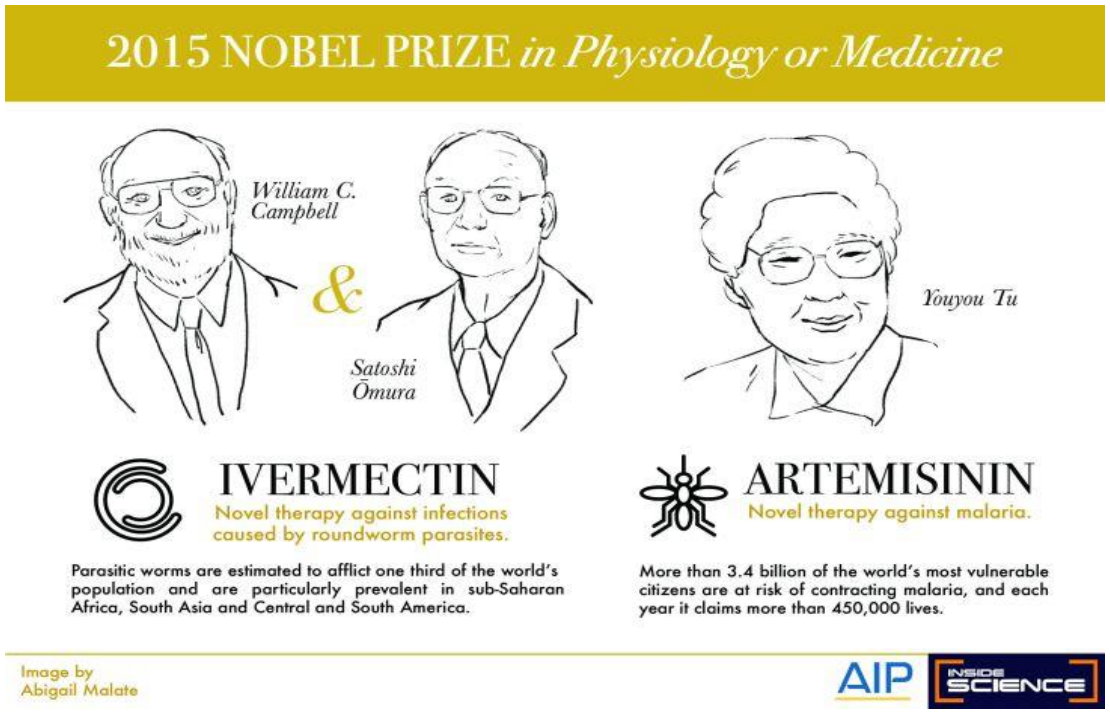
Based on research conducted in Fiji and the Solomon Islands, WHO recommends MDA should be considered where the community prevalence of scabies infestation is ≥ 10% of the whole population.[6] Annual MDA is ceased once prevalence is less than 2%.

During the WSP MDA, medication is offered to every person in a district, province, or region, regardless of whether they have signs of scabies. WSP works with public health teams to engage with each community to discuss the importance of participating in the MDA and discuss any concerns raised about potential risks. These WSP teams engage with local community leaders and health workers to determine the best strategy for reaching the wider local population. These community partnerships are critical to the success of the program.

There are short and long-term health and social benefits of reducing the burden of scabies for all levels of society and cost benefits for the health system. Treating scabies in the community reduces admissions into already stressed health facilities and lowers medical costs for patients needing expensive care for skin and soft tissue infections.

6 WHO informal consultation on a framework for scabies control, World Health Organization Regional Office for the Western Pacific, Manila, Philippines, 19–21 February 2019: meeting report. Geneva: World Health Organization; 2020. https://www.who.int/publications/i/item/9789240008069

# Mass Drug Administration (MDA)




WSP follows the current consensus for scabies MDA administering two doses of ivermectin given orally 7 to 14 days apart. Ivermectin is a widely used and safe medication. Ivermectin is administered to everyone except those with contra-indications who receive permethrin cream. Contra-indications include children weighing <15 kg, pregnant and lactating women within 1 week of giving birth, sick and infirmed people and people with previous hypersensitivity to ivermectin.

*"Research has shown that the most effective way to wipe out scabies is to treat the whole communities. We have found that the oral drug ivermectin is a highly effective community-based treatment -ivermectin has been used to treat over 1 billion people for other parasitic infections and is known to be very safe,"* Professor Andrew Steer, Murdoch Children's Research Institute

# Health Systems Strengthening

Health Systems Strengthening (HSS) can be defined as activities, policies and strategies designed to enhance the performance of a health system and improve health outcomes. The World Health Organization has identified six core HSS building blocks:

1. Health service delivery
2. Health workforce
3. Health information systems and surveillance
4. Access to essential medicines
5. Health financing
6. Leadership and governance

HSS activities are essential for effective scabies control, bringing together health services to reduce disease burden. HSS activities support long-term success by maintaining treatment availability, enabling quick responses to outbreaks, and improving access for underserved communities. Strengthened health systems help provide equitable and high-quality care, particularly for those most affected.

WSP, in partnership with local ministries of health, consider all six building blocks in determining the best HSS activities for their specific context. These activities are particularly important during and after an MDA, to maintain the gains achieved through MDA and sustain low scabies prevalence at the local level.

# Monitoring and Evaluation (M&E)

WSP has developed a comprehensive M&E plan to complement the MDA implementation plan in partner countries. The M&E plan measures specific process, performance and impact indicators to answer the following questions:

- Are the program's activities taking place successfully?
- Is the program reaching the target population?
- Is the program improving health outcomes as intended?

The M&E activities and indicators are embedded throughout the phases of the scabies MDA control program. Box 1 summarizes the key M&E indicators and how they will be measured at each stage of implementation.

BOX 1: Overview of key WSP M&E indicators

| Program Phase | Aim | Key M&E Indicators | Measured |
|---|---|---|---|
| **PHASE 1a: Pre-MDA** | Determine whether scabies is a public health problem | A. Disease prevalence | Rapid assessment |
| **PHASE 1b: Pre-MDA** | Determine choice of control strategies and provide baseline for measuring impact | B. Disease prevalence | Baseline prevalence survey |
| **PHASE 2: MDA** | Ensure safe and effective implementation of MDA | A. Treatment coverage | Treatment registers<br>Summary reports of drug administration<br>Coverage supervision survey |
| | | B. Serious Adverse Events (SAEs) | SAE reporting sheets |
| | | C. Process indicators | Evaluation of staff training program<br>Community sensitisation key informant interviews |
| **PHASE 3: Post-MDA** | Evaluate effectiveness of control strategy and need for modifications | A. Disease prevalence | Prevalence survey 6-12 months after the final planned round of MDA |
| | | B. Disease prevalence | Reporting from sentinel sites |
| | | C. Episodes of care | Reporting routine health facility data on disease |

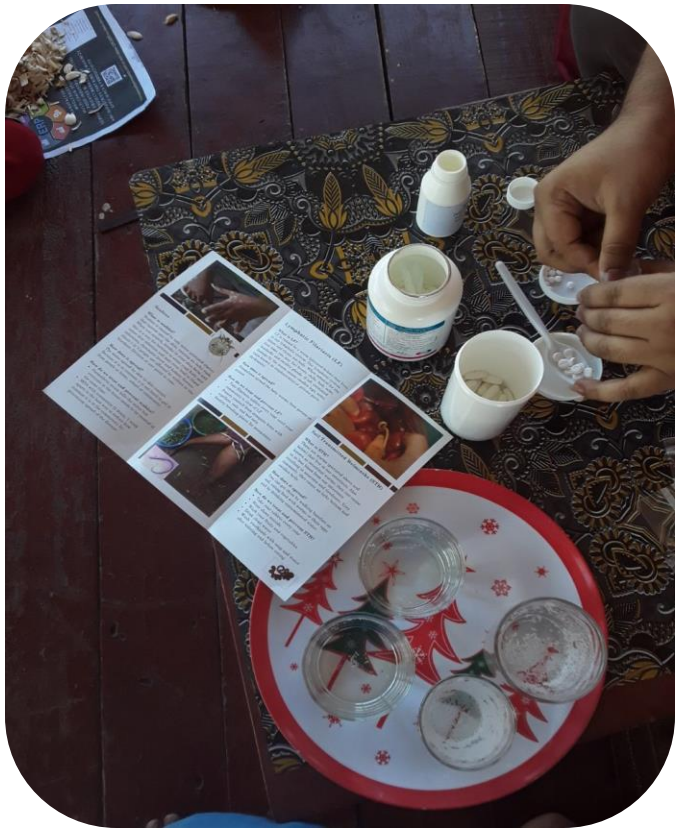
# Community Awareness

Community awareness is an essential component in achieving a high compliance rate in any MDA program. The WSP community awareness campaigns focus on ensuring the community understands the signs and symptoms of scabies, how scabies spreads throughout the community, the role MDA will play in eliminating the disease, and the importance of treating scabies at a health facility level.

Community awareness campaigns are coordinate by the WSP local in-country teams. A vital component of the awareness programs is engaging community leaders and influencers as key communicators, such as chiefs and elders. Local health workers who are familiar with the local community and traditions are also best placed to convey health messages. All WSP health promotion materials will be adapted to local contexts and languages as well as to rural and urban communities.

The WSP awareness campaigns are conducted one to two months before the MDA to inform the community of the benefits of the campaign and the importance of participation. After MDA is completed, communities are informed of the results by appropriate local platforms, such as radio, social media, and CHWs.

# Case Management



WSP works with local governments to enhance clinical care in primary health care clinics to provide optimal treatment (permethrin and/or ivermectin) to clinical cases and all household contacts through:

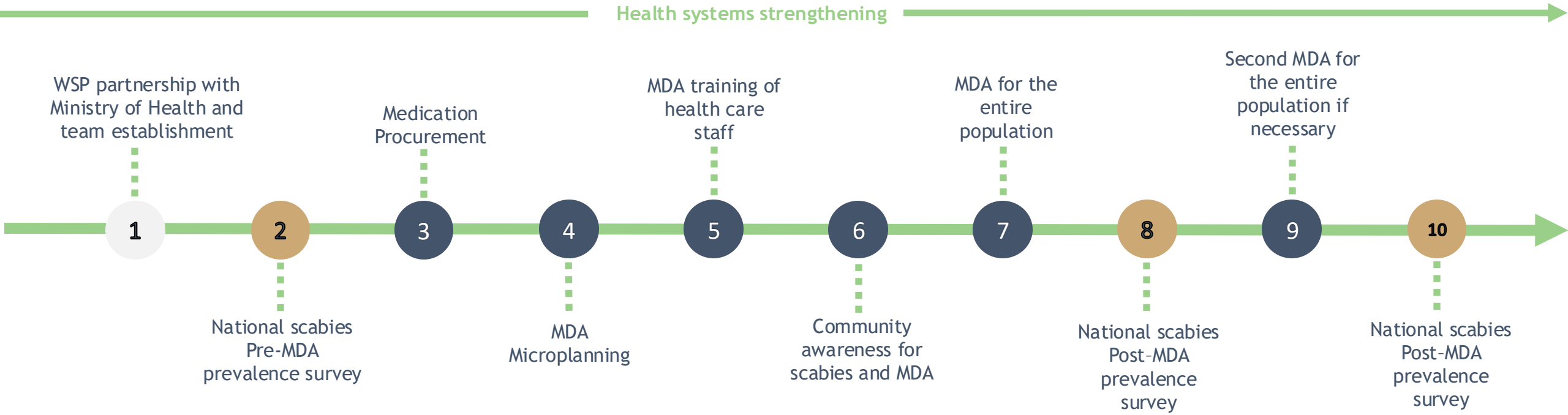
- **Training** – to ensure there is capacity in each country to manage scabies programmatic activities and maintain low prevalence of scabies beyond the MDA, WSP works with a small group of master experts/trainers. The master trainers will be trained in the epidemiology, transmission and management of scabies and its complications. Health care workers involved in the program will be trained in the diagnosis of scabies and in the treatment of individuals and households and other close contacts.

- **Quality medicine** - WSP will work towards updating national clinical guidelines and national policies to ensure nurses and medical officers are authorised, trained and have available optimal treatment to treat scabies close to home. WSP will support countries to consider the right treatment options for them and sourcing affordable medicine.

- **Treating contacts** – as scabies is transmitted from person to person, treating household or close community contacts of scabies cases is imperative in the ongoing case management strategy once elimination as a public health problem has been achieved. This involves ensuring nursing and medical staff are well trained in the identification and treatment of scabies cases at the primary health care level.

# WSP Country Programs

# WSP Country Timeline



# WSP Solomon Islands

Solomon Islands is one of Australia's closest neighbours and has partnered with MCRI through innovative research programs to find new and effective ways to eliminate scabies.

Recent studies conducted found about 23% of the population in Solomon Islands had scabies. The rate of scabies is higher among children and infants; between 34% and 45% of children aged 5 to 9 years old were observed to have scabies.

WSP conducted the first national MDA for scabies in 2022-23 in Solomon Islands. In 2024, WSP conduced a second national MDA for scabies - a world first. WSP is also working to strengthen the local and national health system capacity for the control of scabies country wide.

WSP works in close collaboration with the Ministry of Health and Medical Services and other partners working in Solomon Islands. Hundreds of local Solomon Island health staff have been trained in the identification and management of scabies infestations. Where possible, WSP works to integrate and coordinate with other NTD activities in the country to establish a streamlined and efficient approach to tackling multiple diseases in the community.

# WSP Fiji

In 2016, the Fiji Government released its annual Health Status Report revealing skin and soft tissue infections (SSTIs) to be the fifth most common cause of mortality within the country.

In 2022-23, WSP worked in close collaboration with the Ministry of Health and Medical Services through the Fijian Centre of Disease Control, P.J. Twomey Hospital and all Divisional Health Teams to implement a national MDA for scabies control.

The evaluation of the MDA revealed that scabies prevalence had dropped to levels no longer requiring mass intervention. In 2024, WSP established a health system strengthening project to foster long lasting and sustainable scabies management and monitoring.

As part of the project, over 600 local Fijian health staff have been trained in the identification and management of scabies infestations, ivermectin has been added to the essential medicines list, and a Joint Transition Committee has been established to begin the transfer of the project to Fiji's Ministry of Health.

# WSP Kiribati

WSP has recently starting working with Kiribati on a scabies control program, collaborating closely with the Ministry of Health and Medical Services. Kiribati is spread over a vast area of the central Pacific Ocean and is made up of 32 atolls and 1 island.

Scabies is a common disease in the country. In 2023, WSP worked with the Ministry of Health to undertake the first national scabies prevalence survey.

The results of the survey revealed the need for a national MDA for scabies in Kiribati, which will take place in 2025.

WSP will collaborate closely with the Ministry of Health to conduct the MDA. WSP will aim to coordinate with other NTD programs for a unified and efficient strategy for tackling multiple diseases within Kiribati.

# WSP in other countries

**Assessing scabies prevalence**

French Polynesia

- Scabies is a common but neglected disease in this south-east Pacific “overseas country” of France. WSP worked with the Ministry of Health in 2023 to undertake the first national scabies prevalence survey.

WSP supports other countries in the Pacific region through the Australian Department of Foreign Affairs and Trade Partnerships for a Healthy Region.

**Technical support**

Bangladesh

- WSP provided technical support for a 2024 MDA in Cox’s Bazaar and Bhasan Char Islands, done in collaboration with the WHO and partners. The MDA treated almost 1 million people using ivermectin and permethrin cream across 33 refugee camps, where scabies prevalence was estimated at 39%.

# WSP Governance

## Executive Team

Oversees program design and implementation, makes key strategic management decisions based on recommendations by the WSP advisory groups.

## National Steering Committees

Guides the country program to ensure a quality, evidence-based and sustainable program is established and embedded within national policy. Members include local experts in dermatology, pediatrics, infectious diseases, public health and other health services.

## Global Advisory Group

Provides international strategic guidance and advice on scale and sustainability of the approach to scabies control, how scabies control fits into the broader international landscape of neglected tropical diseases and to ensure the lessons and experiences of the program benefit the global public health community.

## Technical Advisory Group

Provides expert technical advice on the programs in partner countries. The TAG considers all aspects of the program implementation, including MDA, integration with other NTDs, monitoring and evaluation.

# WSP Acknowledgements

## Funding sources

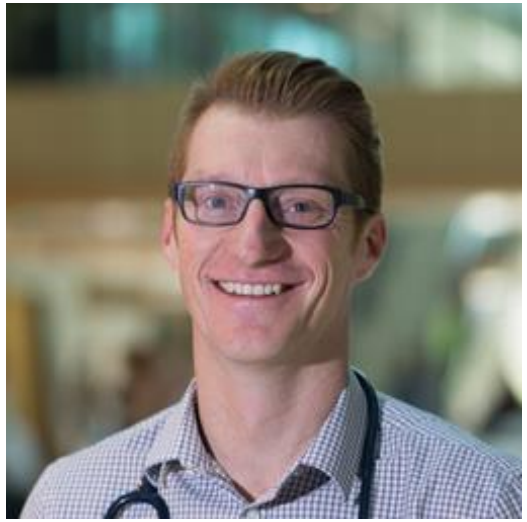
### Include:

Australian Department of Foreign Affairs and Trade

Macquarie Group 50th Anniversary Award

Philanthropy

# WSP Contacts



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