

# Beating Buruli in Victoria

## Information about the mosquito control study

### Beating Buruli: the mosquito control study

Previous studies have shown that getting bitten by mosquitoes and gardening are possible risk factors for getting Buruli ulcer, while wearing insect repellent protected against infection.

These findings are the basis for the mosquito control study which aims to investigate the idea that an effective mosquito control program will reduce Buruli ulcer in humans.

### What does the study involve?

Small residential areas in the Mornington Peninsula will be identified and randomly selected to be either 'intervention' or 'control' areas. This is called a cluster randomised control trial.

Residents will receive information on how to protect themselves from mosquito bites and the diseases mosquito bites might transmit – like Buruli ulcer.

Mosquito traps will be placed across the study area to monitor mosquito numbers.

Some areas will also receive a mosquito control program which will aim to reduce the number of mosquitos during peak breeding season.

### Where will the study take place?

The study will involve small areas within Rye, Sorrento, Blairgowrie and Tootgarook.

These areas have been selected as they represent the highest risk associated with the active transmission areas of Buruli ulcer in the Mornington Peninsula.

### What mosquito control approach is being considered?

Research partners are currently working to explore options for mosquito control.

One approach would involve the application of a surface barrier spray to the trees and fences on the

nature strip. This is also known as residual harbourage spraying.

When mosquitoes aren't out biting us, they rest (or harbour) in trees and long grasses, and on items like fence posts. The surface barrier spray remains on the plants and trees for about one month, and mosquitoes that land on these surfaces during that time will die.

This kind of spraying can be conducted in several ways but is most commonly applied by hand using a hose that is connected to either a backpack or a container in a vehicle.

An alternative option being explored is a source reduction approach. This would involve removing mosquito larvae from their water breeding sites, such as pot plants, roof gutters and dog bowls and also applying a small amount of control agent on the edges of water containers and applying a larvicide to stagnant water.

### Are these approaches safe?

Yes. Surface barrier sprays have a long history of safe and effective use in mosquito control activities, both in Victoria and overseas.

They are commonly used in agriculture and are often sprayed in public areas, including in sportsgrounds and schools to keep mosquito populations down.

Larvicide only affects mosquito larvae (and perhaps black fly larvae). It has no effect on fish, other aquatic insects, or any animal that may drink from the container.

### What about the environment?

The research team are listening very closely to the local community who are concerned about the potential environmental impacts of the proposed approach to mosquito control.

The team will be undertaking community consultation to help inform what approach to mosquito control the study could include.

## What if I don't want to be involved in the study?

As part of the planning for the study we are exploring options for 'opt in' approaches. This means that for anyone living in the study area their participation will be voluntary.

## Who is conducting the study?

The study is being conducted by a research collaboration. This includes the Doherty Institute, the University of Melbourne and the Department of Health and Human Services in collaboration with Austin Health, Mornington Peninsula Shire Council and Agriculture Victoria.

## When will this be happening?

Mosquito control activities are in planning, with control activities proposed to begin in 2020. We will ensure that the community are kept well informed of progress.

## What information will be given to residents?

A community consultation process is being planned, and our approach will be further informed by these conversations.

Residents will be advised well in advance of the timing of mosquito control activities in their neighbourhood.

Information on how people can protect themselves from mosquito bites will also be delivered to all residents in the study area.

## How will we know if it works?

Rates of Buruli ulcer will be compared between areas that received the mosquito control program and where people only received information about protecting themselves from mosquito bites.

This will let us know if the mosquito control program was useful for stopping people from getting Buruli ulcer.

The findings will help direct public health policy to ensure that the most effective actions are taken in areas where Buruli ulcer is a problem.

## What is Buruli ulcer?

Buruli ulcer (also known as Bairnsdale ulcer) is an infection of skin and soft tissue caused by the bacterium *Mycobacterium ulcerans*.

The toxin made by the bacteria attacks fat cells under the skin, which leads to localised swelling or the formation of a nodule (lump) and then an ulcer. At first, it can be mistaken for an insect or spider bite.

How people become infected is not known, however, Australian studies have indicated that mosquitoes might be important in spreading Buruli ulcer.

Although Buruli ulcer is not fatal, the infection can leave people with significant cosmetic and sometimes functional damage to limbs.

## Where is Buruli ulcer found?

Buruli ulcer has been reported in 33 countries around the world. Affected areas include rural West Africa, Central Africa, New Guinea, Latin America and tropical regions of Asia.

In Australia, Buruli ulcer most commonly occurs in localised coastal areas of Victoria. It was first recognised in the Bairnsdale area of East Gippsland in the 1930s. Since then a growing number of cases have been reported in the Bellarine Peninsula and since 2012, the Mornington Peninsula. Buruli ulcer also occurs in the Daintree region of Far North Queensland and occasionally in other coastal regions of north Queensland and the Northern Territory.

## What is the Beating Buruli in Victoria project?

A substantial National Health and Medical Research Council grant enabled a collaborative partnership to be developed between Victoria's Department of Health and Human Services (DHHS), the Doherty Institute, Barwon Health, Austin Health, CSIRO, Agriculture Victoria, the University of Melbourne and Mornington Peninsula Shire, to undertake an ambitious and innovative two-year project to better understand how Buruli ulcer is transmitted and determine effective ways to prevent and reduce infections.

The 'Beating Buruli in Victoria' project hopes to actively disrupt disease transmission for the first time and lead to the development of evidence-based policies and guidelines that can help stop the spread of Buruli ulcer around Victoria and possibly overseas.

## More information

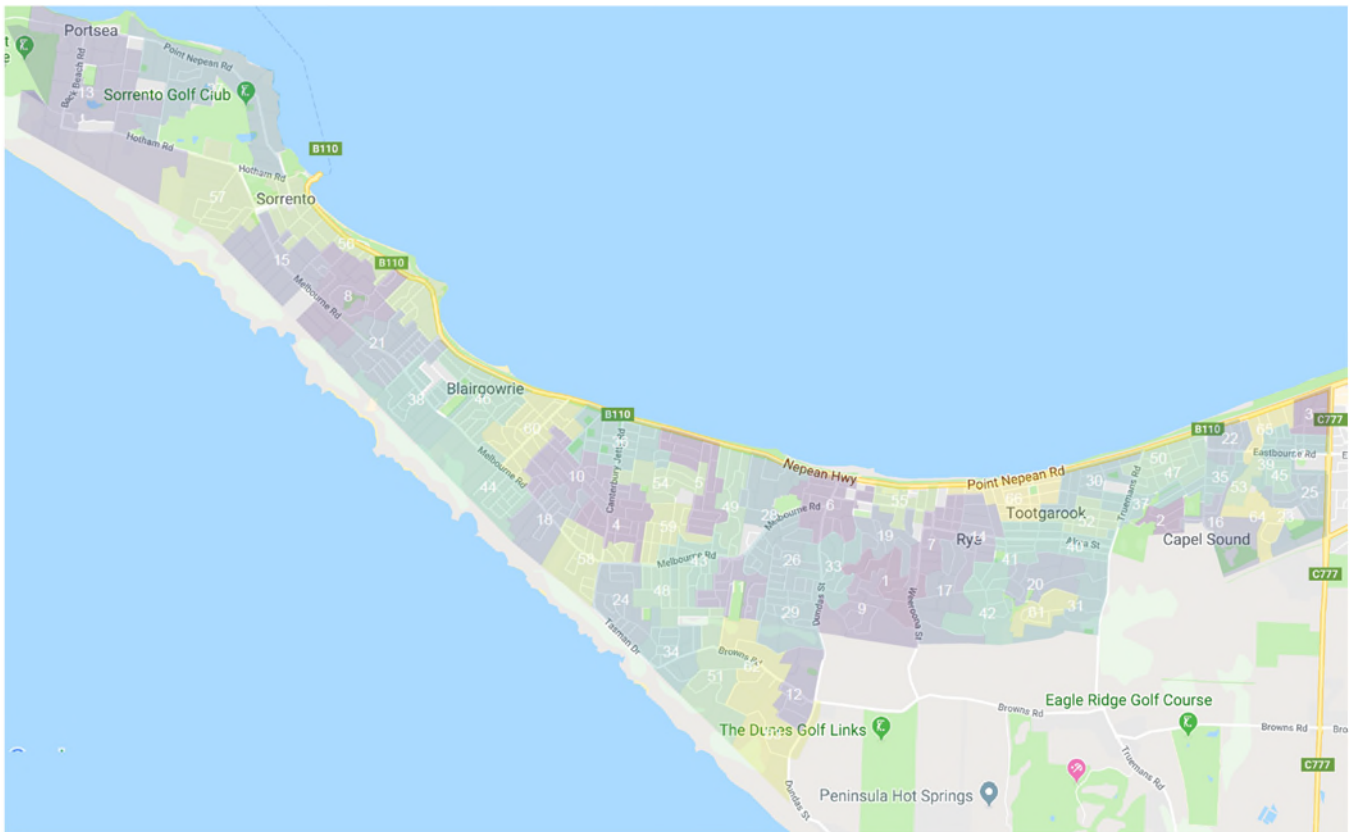
For more information on the Beating Buruli: the mosquito control study please visit [www2.health.vic.gov.au/beatingburuli](http://www2.health.vic.gov.au/beatingburuli)

## Ethics approval

The study has been approved by the Department of Health and Human Services Human Research Ethics Committee in December 2018 (project number 47520).

## Privacy

The study team is committed to protecting the privacy and confidentiality of all patients and residents of the study area. All information collected will be stored securely and will not be shared with anyone not directly involved in the research. Any information collected will only be used for this study.



*This map shows the overall areas that will be involved in the study.*