Singapore — On Tuesday (Dec 17), a PAP Community Foundation (PCF) Sparkletots centre in Bukit Batok confirmed that there was a case of active tuberculosis found at the preschool earlier this month.

The centre was located at Block 293, Bukit Batok Street 21.

The news came as a surprise to some members of the public who were under the impression that the disease, also known as TB, had already been eradicated here.

The fact: Singapore has seen an average of 1,510 new cases of tuberculosis each year from 2009 to 2018, data from the Ministry of Health showed.

Professor Gerhard Gruber from Nanyang Technological University’s (NTU’s) School of Biological Sciences told TODAY that the TB incidence rate among Singapore residents increased in 2008 and has stagnated at
around 40 per 100,000. This followed a decade of decline in TB cases to a historical low of 35 per 100,000 in 2007, he said.

WHY IS TB STILL AROUND?

With the exception of Japan, TB is endemic in Singapore as well as most other Asian countries — meaning it is regularly found and is common in these places.

Experts contacted by TODAY said that there are several possible factors why this might be the case in Singapore:

- Ongoing community transmission due to a delayed diagnosis for infectious cases
- Reactivation of latent TB in an ageing population
- A large immigrant workforce from countries with high TB incidence

HOW DOES TB SPREAD?

Tuberculosis, also known as phthisis and the white plague, is an air-borne infectious disease caused by the bacterium Mycobacterium tuberculosis.

Dr Paul Tambyah, president of the Asia Pacific Society of Clinical Microbiology and Infection, said that the disease primarily affects the lungs, but can also affect other parts of the body such as the lymph nodes or the bones.

Associate Professor Hsu Li Yang, who heads the Infectious Diseases Programme at Saw Swee Hock School of Public Health, said that TB is primarily spread through the air by the cough of those with undiagnosed or untreated TB.

Even then, most people have intact immune systems, which would prevent them from becoming infected with TB should they breathe in the germs, Dr Tambyah said.

“Most of us cough out the germs,” he added. “The risk of infection is highest in those who have prolonged contact with people who have severe active TB and are coughing a lot.”

ACTIVE AND LATENT TB: WHAT’S THE DIFFERENCE?

If a person has latent TB, it means that at some point, he has breathed in the TB germ and it has stayed in his body, Dr Tambyah said.

Adding to this, Assoc Prof Hsu said: “Most people who are infected by TB do not manifest any evidence of the infection. Their immune systems keep the bacterium in check, but do not eliminate it, so they remain asymptomatic (does not have symptoms) for the rest of their lives.”

On the other hand, a person who has active TB will display symptoms such as fever, night sweats, weight loss, prolonged coughing, coughing up blood and chest pain, Dr Tambyah said.

This occurs when the TB germ manages to overcome a person’s immune system and cause him to fall sick.

Assoc Prof Hsu said that this occurs in about 10 per cent of patients, and is likelier to occur among patients with compromised immune systems.

They include those with uncontrolled diabetes, those infected by the human immunodeficiency virus (HIV), the elderly as well as individuals who are on chemotherapy for cancer or auto-immune diseases.

Dr Tambyah said: “Active TB can be spread to other people and therefore, the key strategy to control it is to find cases of active TB and treat them so that they do not spread the germ.”
WHAT HAPPENS AT A TB SCREENING?

Screening for TB involves a blood test that checks for prior exposure to the bacterium, a chest X-ray, or both.

A notice on MOH’s Health Hub website states that chest X-rays can be reviewed on the same day while blood tests can take a few days.

DOES THE BCG VACCINE GIVE LIFETIME PROTECTION?

In Singapore, most children would receive the vaccine for TB, known as the Bacillus Calmette-Guerin (BCG) vaccine, after birth.

Both Dr Tambyah and Assoc Prof Hsu said that the vaccine is most effective at preventing infants from contracting severe forms of childhood TB infections, but it does not work in adults because its protection wanes after childhood.

“This is why we no longer (give children) a booster jab at age 12,” Dr Tambyah added.

The BCG revaccination by the School Health Service here was discontinued in 2001. Previously, students received a booster shot when they were 12 years old.

HOW IS TB TREATED?

Treatment differs for drug-sensitive TB and multidrug-resistant TB (MDR-TB).

MDR-TB develops when the bacterium has formed the mechanisms to tolerate the medicine and survive, and is thus more difficult to treat.

For drug-sensitive TB, which has a relatively shorter treatment time, a cocktail of four anti-TB medications will be prescribed for a duration of two months. Patients will then be expected to continue two of the medications for a further four to seven months.

However, patients with drug-resistant active TB or MDR-TB will generally require more drugs prescribed for a longer period of time, Assoc Prof Hsu said.

Latent TB can be treated with fewer drugs over a shorter duration of treatment, he added.

Though TB is curable, the bacterium's clinical resistance has made current drugs in the market increasingly less effective, Prof Gruber of NTU said. He led a team of researchers who found that an antioxidant found in green tea plants could pave the way for the creation of novel drugs to combat TB.

He told TODAY that there are many reasons why TB organisms develop a resistance to drugs, but one of them is that patients do not follow instructions when taking medicine or do not complete the course of treatment.

An advisory from MOH stated that patients with TB should start treatment immediately and be placed on medical leave.

Experts said that the effectiveness of treatment hinges on patients adhering to the treatment course. There is a strategy called Directly Observed Treatment, which requires patients to go directly to the clinic and have a nurse watch the patient swallow the pills to make sure that they take it, so that the disease does not come back or become resistant.

ARE THERE WAYS TO PREVENT TB?
While there is not much that people can do to prevent themselves from contracting TB, an MOH advisory stated that individuals should keep their immune systems healthy by adopting healthy eating habits, exercising regularly and getting enough sleep.

Individuals who show symptoms of TB, such as a prolonged cough, an unexplained fever or unexplained weight loss, should consult their primary care doctors, Dr Tambyah said.