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## Surgery for epilepsy

...gives hope for persons with neurological condition

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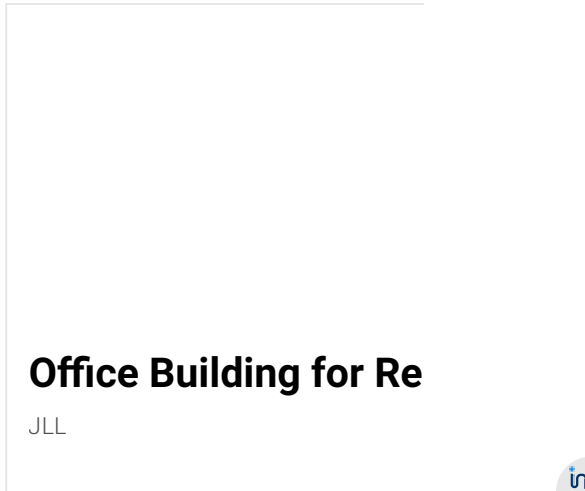
Kimberly Wallace



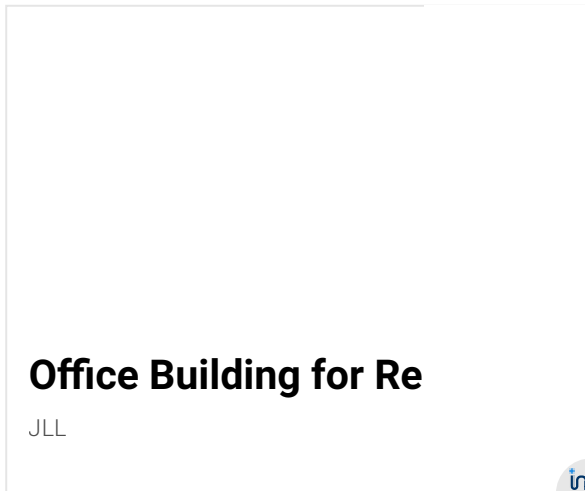
**HEALTH TEAM:** From left, neurosurgeons Dr Devindra Ramnarine and Dr Patrick Knight, and neurologist Dr Avidesh Panday.

Mark Fraser

SINCE 2018, a team comprising neurologists, neurosurgeons, radiologists and a neuropsychologist has been performing life-altering surgeries for patients with multi-drug resistant epilepsy in Trinidad and Tobago. More surgeries scheduled for 2024 are already in the planning stages, said neurologist Dr Avidesh Panday. What has been unfolding in this country as it pertains to the surgical treatment of epilepsy among multi-drug resistant epileptic patients can only be described as monumental.



Prior to 2018, epileptic patients in T&T were solely treated with medications, many did not have resources to access care abroad. Now that surgical options are being offered, epileptic patients who qualify for surgery can experience an improved quality of life.



Epilepsy is a chronic neurological condition, it is characterised by patients who have two or more seizures at least 24 hours apart. A patient could have seizures that are linked to other conditions e.g low blood glucose or head trauma. However in order to have epilepsy a patient must have seizures without a triggering or provoking factor, explained Panday.

Epilepsy is very common in Trinidad but the exact figures are not known. Panday estimates that among 40-60 patients in a typical neurology clinic, between 10-15 patients would have seizures and epilepsy.

“This is not just confined to adults, the prevalence and incidence of epilepsy is larger in the paediatric age range than it is in the adult age range,” said Panday. **She came home to Carnival, and her death**  
THE body of an 85-year-old Trinidad-born woman who was visiting for Carnival w

The first tier of treatment of patients with epilepsy involves medications. There are many different medications known as Antiepileptic Drugs (AEDs), the dosage is increased if the person continues to have seizures. In some cases, patients are on as many as three and four medications, this is referred to as multi-drug resistant epilepsy. Multi-drug resistant epilepsy is defined in a patient who continues to have seizures despite being on adequate dosages of two or more medications. The adult or child with multi-drug resistant epilepsy is exposed to multiple medications and multiple side effects which will unlikely result in seizure freedom, said Panday.

Medically refractory

epilepsy

The neurologist estimates that more than 75 per cent of patients in the adult neurology clinic in most tertiary care facilities are multi-drug resistant. This is in congruence with what is happening around the world.

“In these patients we have to start thinking about treatments outside of just medications, this is where the discussion around surgery comes in,” said Panday. “We have embraced that there is more to epilepsy care than medications and we are starting to move toward epilepsy surgery for certain patients.”

When Panday is confronted with a patient that has medically refractory epilepsy, he examines the patient’s history and looks at the imaging and electrophysiology of the patient’s brain. Then a comprehensive epilepsy meeting is convened with neurosurgeons, radiologists and the neuropsychologist who is able to map out what parts of the brain are responsible for the seizure and whether they interfere with other key

functions such as speech and vision. During the meeting the following questions are answered: Where are the seizures coming from? Is it safe to remove that part of the brain? What is the likely per cent of success?

**She came home to Carnival, and her death**

THE body of an 85-year-old Trinidad-born woman who was visiting for Carnival w

## Different surgical options

There are different surgical options available to patients depending on their medical history. Panday and his team have performed four successful cases of temporal lobectomy where parts of the patient's brain that were responsible for seizures were removed. Thus far in all cases there has been a cessation of seizures, said Panday. But if the surgery proves too risky for some patients, the physicians may opt for palliative surgeries which will not stop the seizures from occurring but will lessen their frequency or duration.

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Panday spoke of a young boy who suffered from “drop attacks” during which he would lose consciousness and fall down. He had as many as 15 attacks a day and had to wear a crash helmet outdoors.

The team performed a corpus callosotomy where they disconnected the right and left part of the brain preventing electricity from going from one side to the other. The result? The attacks stopped, his cognitive skills increased and his quality of life improved.

The team has also been doing a procedure called ‘vagal nerve stimulator’ where an electrical stimulation device is implanted in the neck which sends continuous mild pulses of electrical current to the brain via the vagus nerve which modulates brain activity and reduces seizure activity over time. While it is not curative, it has a positive impact on patients and their families.

## Improving patients care

### **She came home to Carnival, and her death**

THE body of an 85-year-old Trinidad-born woman who was visiting for Carnival w Panday is proud of how much progress has been made and the willingness among medical professionals to collaborate, pool their academic and intellectual resources to improve patient care. In a short space of time they have performed eight epilepsy surgical procedures in Trinidad - an impressive feat for a small island like Trinidad.

“More importantly we have expanded our team, in the beginning we had to outsource a lot of things, we had to send patients to the US to get certain tests done. But in Trinidad we now have a trained neuropsychologist, we have adult and paediatric epileptologists, we have dedicated epilepsy trained neurosurgeons and we have 24-hour ambulatory EEG testing. We are building the capacity and have been able to perform the surgeries to match the expertise that we have. More procedures are being planned,” said Panday.

The reality however is that Panday along with his team still face limitations which makes it impossible to keep pace with first world countries. But gone are the days where epileptic patients had no choice - today they do have a choice.

“Not everybody is going to be a candidate for epilepsy surgery but we are able to consider patients. Whereas before they were told to take such and such medication - now we have options,” said Panday.

“Every single one of the patients that we operated on would not have had access to medical care abroad, today they are doing better, they are back out to work, their families are happier because their condition has improved and they are enjoying a better quality of life. We have given these patients who are in the prime of their lives an opportunity to go out there and live their lives which was not a possibility before.”