

## Home-grown medical devices in major trial

They will monitor blood pressure in Native American diabetes study

By CHANG AI-LIEN & JUDITH TAN

HOME-GROWN medical devices company HealthStats International just added another feather to its cap.

About 50,000 Native Americans will be the latest to use its special blood pressure machines, as part of a large-scale trial tracking how such measurements are associated with diabetes.

"We ran various trials and found it was a world-leading device recommended by top doctors," said Mr Isaac Casados, founder of Save 1 Heart campaign, an American firm which tests for and treats heart disease.

The device, the A-Pulse Casp, is the brainchild of Singapore general practitioner Ting Choon Meng and has been making ripples around the world.

It is unique because it detects central blood pressure, which is a better predictor of the risk of heart attacks and stroke than conventional readings taken from the arm.

Save 1 Heart aims to buy 100 of the machines for use in the diabetes trial, as well as others on thyroid and heart disease, said Mr Casados.

He and his father, company president Ronald Casados, made their first trip to Singapore this week for training on using the company's two latest machines.

Dr Ting, who is also HealthStats' chief

executive officer, developed the A-Pulse Casp. The software works with a watch-like device called BPro that records waveforms from the arteries, allowing non-invasive reading of blood pressure from the aorta.

The software was tested and validated in three separate clinical studies involving 12,000 patients. The only other way to get such measurements is by inserting a catheter into the groin.

Riding on the popularity of his first device, which costs about \$7,000 and is meant for clinical trials, Dr Ting has developed two scaled-down models.

The \$3,800 CasPro, meant for GP clinics, and \$490 CasPal, for patients to use at home - were approved by the United States Food and Drug Administration this month after 60 days.

Said Dr Ting: "It's about reaching out to as many people as possible to save more lives."

Globally, 17 million people die every year of cardiovascular disease, particularly heart attacks and strokes, according to the World Health Organisation, which calls it a global epidemic.

In Singapore, cardiovascular disease is the leading cause of death and claims 15 lives each day - just under a third of all deaths in 2008.

Orders for thousands of units have come in from China and the US, added Dr Ting, whose company chalked up \$4 million in sales revenue last year.

The technology is also harnessed by pharmaceutical companies to test if their new blood pressure drugs are working, or to see the effect of potential drugs on blood pressure.

For example, drug giant Novartis has used it in five large-scale trials involving



Dr Ting (centre) with Mr Isaac Casados (right) and his father Mr Ronald Casados. Their company, Save 1 Heart, aims to buy 100 of HealthStats' latest machines for use in the diabetes trial, as well as others on thyroid and heart disease. PHOTO: JOSEPH NAIR FOR THE STRAITS TIMES

### Machines used in hospitals

HOSPITALS here have bought or rented 58 of HealthStats' machines and software to measure central blood pressure in various trials, including:

■ **KK Women's and Children's Hospital and National University Hospital:** The two hospitals are using the machine on 1,200 pregnant women as part of a long-term study on early intervention to treat or prevent diseases such as diabetes and obesity.

■ **Khoo Teck Puat Hospital:** It is used to study the effect of diabetes and fatty deposits on the stiffening of the arteries and central blood pressure.

■ **Singapore General Hospital:** It is used to see how measurements are associated with stroke.

### SAVING MORE LIVES

"It's about reaching out to as many people as possible to save more lives."

Dr Ting Choon Meng, CEO of HealthStats, on his invention

thousands of people, he added.

His inventions have also found their way into hospitals and clinics here for research, health checks and treatment.

At KK Women's and Children's Hospital, for example, the A-Pulse Casp is being used in a study of 1,200 pregnant women. The study aims to track the health of both mothers and babies - from the time they are in the womb, and as they develop and grow.

It is hoped the ambitious study will uncover better ways to prevent and treat metabolic diseases such as obesity and Type 2 diabetes.

The study also aims to establish the normal central blood pressure ranges during pregnancy, to help identify measurements outside this accepted range.

The BPro device is used on the expect-

ant mothers around the 26th week of pregnancy, said Associate Professor Kenneth Kwek, chairman of the hospital's medical board.

"It is safe for both mother and baby as the procedure is totally non-invasive, requiring women only to wear the 'watch' for about five to 10 minutes," he said.

He said he was excited about the opportunity to look at blood movement apart from regular blood pressure readings, as they could shine more light on heart health in both mother and baby.

Eventually, this could lead to new ways of singling out and treating early women who may be at risk of pregnancy complications such as hypertension and diabetes, he added.

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