

## A made-in-Singapore revolution

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ONE is a British hypertension expert behind a groundbreaking study. The other is a Singapore general practitioner with an inventive streak.

Three years ago, fate brought them together at an Innovators Forum held here – and set them on a course to which could soon

revolutionise the century-old method of reading blood pressure at doctors' clinics all over the world.

It began with Dr Ting Choon Meng's curiosity over why some of his hypertension patients fared better than others. He invented a watch-like device that monitored their blood pressure over 24 hours, giving more accurate readings than

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Global hypertension expert Prof Bryan Williams (left) and Dr Ting Choon Meng, CEO of HealthStats International.

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## COUNTER-TERRORISM

# Defusing the 'human bomb'

**Not easy to reform fanatics, but 40 out of 60 detainees have been released**

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FOILING a terrorist's plot or capturing him isn't the end of the threat. The challenge remains, in Mr K Shanmugam's words, to defuse this "human bomb".

Reforming a deeply-indoctrinated fanatic is "not easy" but statistically speaking, Singapore has had positive success: To date, 40 of the 60 detainees arrested under the Internal Security

Act (ISA) since 2001 have been released after rehabilitation, revealed the Law Minister.

"If you have a human bomb, the only way you can defuse that is to first remove them from harm's way ... internalise that the path they are on is wrong and change," said Mr Shanmugam, who is also the Second Minister for Home Affairs. "You hope that with the right tools, psychological approach and religious approach, you achieve that".

Mr Shanmugam was speaking at the inaugural International Conference on Terrorist Rehabilitation yesterday. Over 200 experts from 20 countries will learn about Singapore's rehabilitation efforts and share their experiences

during the three-day conference.

Mr Shanmugam pointed out that the ISA detainees had to "undergo a holistic programme that incorporate psychological, social and religious aspects".

The released detainees have re-integrated well back into society and none of them have strayed back into terrorism. Still, they will continue to undergo rehabilitation to "ensure that they remain inoculated against radical ideas."

While rehabilitation programmes for detained terrorists appear to be successful, one social psychologist feels that the methods now in use lack systematic evaluation.

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the common method of strapping on an arm cuff for a mere few minutes.

Oceans away, Professor Bryan Williams of the University of Leicester's School of Medicine showed, in a 2005 landmark study, that blood pressure near the heart — instead of that at the arm — could better predict stroke and heart attacks.

When they got together, they found that the readings taking by Dr Ting's B Pro monitor, when used with a mathematical formula software he developed, accurately captured the blood pressure at the root of the artery transporting blood from the heart, or central aortic systolic pressure (Casp).

For doctors, this means they can more correctly assess the impact of their hypertension treatments on their patients.

And what's helpful for patients is the pulse waveform charts generated show clearly what effect a change in lifestyle choices, such as smoking or exercise, have on their blood pressure.

Both Dr Ting's inventions are making their mark — the B Pro is approved by the United States

Food and Drug Administration (US FDA), there are plans to venture into Japan and South Korea this year, and in Singapore, doctors and institutions like the Singapore General Hospital and KK Women's and Children's Hospital are using them on a small scale.

## THE BIG PAY-OFF IN A YEAR?

But more significantly, major pharmaceutical companies like Novartis are tapping his inventions to carry out clinical drug trials — and the big payoff, in terms of product exposure, could come when the results are published in “hopefully six months to a year”, said Dr Ting.

The inventions are expected to generate \$12 million to \$20 million in revenue this year for his eight-year-old company, HealthStats International.

That's a long way to come for a product that, Dr Ting told *Time* magazine in 2007, had initially failed to win funding from the Economic Development Board — he ended up selling three of his four medical clinics.

Yesterday, at the official launch of the A-Pulse Casp Software, Senior

Minister of State (Trade and Industry) S Iswaran had high hopes for the “revolutionary changes” these made-in-Singapore innovations could make to how blood pressure is monitored and managed worldwide. It was heartening to see Singapore starting to reap the fruit of significant investments in the biomedical sector, he added.

But would the price of Dr Ting's inventions — about \$6,000 per set — deter take-up by doctors here? Cuff-based blood pressure monitors only cost about \$150 to \$300.

Dr Ng Siau Peng of Frontier Healthcare, who has been using the B Pro since 2006, said: “Doctors are not familiar with the device, and they're not taught to use it, so they may be taken aback ... Cost won't be such a barrier if they find it useful.”

The B Pro and the software, however, are a steal compared to similar devices that generate pulse waveforms — which cost \$20,000 to \$60,000.

Bigger dreams are ahead for Dr Ting — a home blood pressure monitor that displays one's Casp is awaiting US FDA approval. He hopes to launch it here later this year.