

Monitoring asthma

The diagnosing and monitoring of respiratory diseases such as asthma have taken a huge step forward with a set of novel products. By **Mark Camm**

ABOUT 400 PEOPLE die in Australia each year from asthma while the lives of many thousands more are limited by the disease. Monitoring and assessing the severity of asthma in sufferers are a major and expensive part of the health-care system.

Melbourne medical technology export company KarmelSonix believes it has developed products which will go a long way to keeping asthma patients and doctors better, more quickly and more accurately informed.

The company uses unique technology based on the detection and analysis of sound.

The company has been developing these acoustic technologies for several years utilising research in Israel under Professor Noam Gavriely, and at the Monash Institute of Medical Research.

The technology is based on sounds and their processing using unique signal processing techniques. Different sounds such as wheezes, rhonchi (or rattling sounds) and coughs are recorded using proprietary lung-sound sensors. These are designed for lung-sound detection and are significantly more sensitive at detecting the characteristics of different sounds for asthma than normal stethoscopes.

But as complex as the technologies are, their size makes them portable and simple to operate, especially the Personal WheezoMeter. This simple device measures an asthma sufferer's wheezes and gives an accurate indication of the severity of wheeze during an asthma attack, information that can be instantly relayed to a doctor or hospital.

In the home

The ease of using the equipment means that the asthma condition can be monitored in the home, far more cheaply than before. The Whofter is an ambulatory recording device that goes anywhere with the patient (including while sleeping overnight) providing detailed 24-hours a day information for those with nocturnal asthma, chronic obstructive pulmonary disease or chronic bronchitis,



*KarmelSonix Marketing Vice-President
Paul Eisen*

chronic coughs and allergies. The PulmoTrack software package with these devices provides high-level medical data.

"It turns out that chronic and sub-acute cough is a huge market with 2 per cent of visits to primary care physicians (GPs) and paediatricians in the US being for cough as the primary presenting symptom," according to a KarmelSonix US executive. "The cough counter will have significant application with the WHolter with its ability to properly track the coughing experience of people, the effect of treatments applied, particularly nocturnally, and to obtain accurate data as to when coughing occurs.

"Coughs count as one of the most frequent reasons for doctor visits. Out of 829 million doctor visits in the US, almost 30 million are people seeking help for coughs, according to the American College of Chest Physicians."

Orders starting to flow

KarmelSonix, which is listed on the ASX, is now on the verge of generating sales from all the development work it has undertaken. It has successfully navigated the often time consuming and complex path of winning approval from the US Food and Drug Administration, Australian Therapeutic Goods Administration and European EC approval.

The company has undertaken a number of capital raisings — the latest for \$4.5m — to

enable it to build its production and distribution base. Orders have begun flowing through from its new established network of distributors, with orders being won from India following the signing of a new distributor and in Sri Lanka.

The company's vice president for sales and marketing, Paul Eisen, says respiratory diseases are rife in India and it was a particularly good market for KarmelSonix to be in.

Sapco Laboratories, which will distribute KarmelSonix's products in India, says the asthma and respiratory market is huge. "Being able to introduce this new and unique technology to assist patients and doctors in the management of these conditions is significant," Sapco director Suneel Chand says.

Domestically, the company is ready to sell its WheezoMeter through chemists using Clear Sales Australia as its distributor. This will not only help KarmelSonix establish the reputation and popularity of one of its brands but provide some much-needed income as well.

But it's the export market where the company sees its primary income coming from.

"We see this as new technology going into a monster market," Mr Eisen says. "In those places where the products can be billed as a 'Medicare item' we see them doing really well."

There is also a huge market in the US for the Whofter to be integrated into sleep studies to detect nocturnal respiratory diseases. Local research showed that a significant numbers of people who had sleep studies with KarmelSonix technology attached had no sleep disorders but did have a significant nocturnal wheeze or cough. Without the KarmelSonix device, it's likely the disease would never have been diagnosed. ●

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