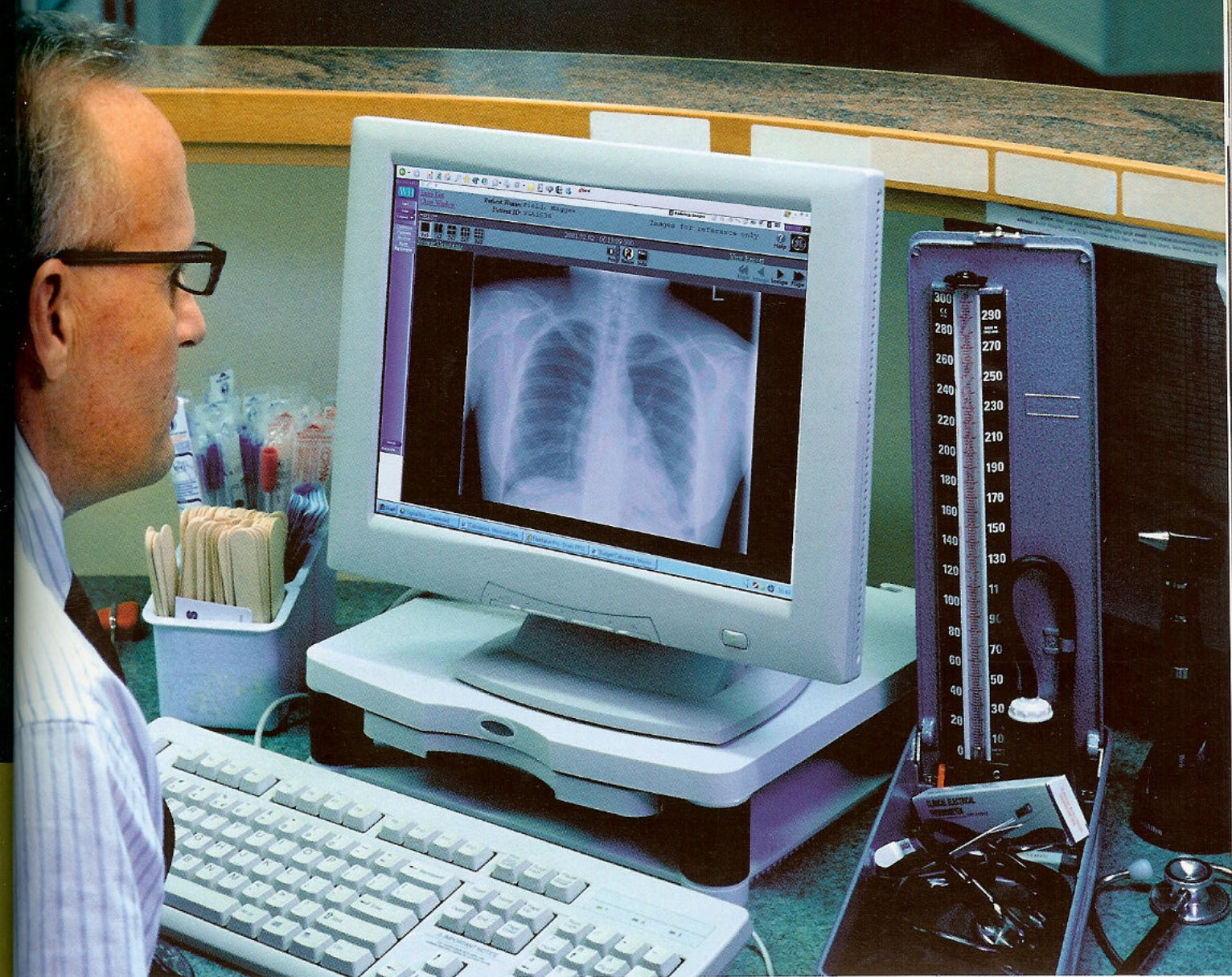


# health intelligence

BY frances martin



Smart technologies are providing relief for strained healthcare systems worldwide.

**from** intensive care units to general practitioner surgeries, rest homes and mental health facilities, New Zealand healthcare software can be found across North America, Asia, Europe and Australia.

**at** one of Britain's largest acute teaching hospitals, Auckland-based Orion Health is working to overcome a major problem facing hospitals around the world: how to get a multitude of standalone computer systems — containing key patient information — talking to each other.

This isn't your standard IT networking project — it has important implications for how the hospital provides care to its patients. University Hospitals of Leicester NHS Trust has selected Orion to build a new document tracking solution to improve access to patient notes across its three teaching hospitals and 12 community facilities. The new system will enable clinicians to use PDAs to electronically "check out" patient case notes from the library units, all with the swipe of a barcode.

"Traditionally case note requests at our hospitals have been handled via telephone, fax or email, a process that is labour-intensive," says Izhar Kler, University Hospitals of Leicester Project Manager. "The new system we are building in co-operation with Orion Health will reduce the time spent requesting, tracking and chasing case notes, and will help improve the quality of our audit and reporting."

That will result in better quality care for patients, and minimise the chance of treatment errors (and subsequent litigation) caused by miscommunication. Solutions like Orion's also aim to alleviate the cost burden incurred by legacy systems that are straining under the load of growing — and aging — populations.

Hospitals, doctors and community health centres around the globe are now using New Zealand-developed health management systems to improve treatment for patients and management of health resources. From intensive care units to general practitioner surgeries, rest homes and mental health facilities, New Zealand healthcare software can be found across North America, Asia, Europe and Australia.

## STRONG FOUNDATIONS

How does a small South Pacific country bring cutting-edge health solutions to highly developed markets around the world? It's natural, really: New Zealand's first class health system, innovative health policies, and high uptake of medical technology have proven fertile ground for smart healthcare solutions.

At the very core of this advantage is the early adoption of unique patient identifiers: New Zealand was one of the first countries to adopt them, enabling the development of electronic record management systems.

Virtually all New Zealand GPs now keep electronic patient records, compared with only about 12 percent in the United States.

The health technology sector's ability to develop leading products partly reflects the New Zealand environment they operate in, says New Zealand Trade and Enterprise's health IT sector manager, George Arnold. The relatively small size of New Zealand's health system meant large international players didn't have solutions of the right scale, Arnold says. "This created an opportunity for the local industry to come up with its own products."

Limited health budgets also required the local industry to be creative in crafting cost-effective solutions. "Isolation, scale and the policy lead combined to develop a domestic industry that has now been able to expand offshore," Arnold says.

Auckland-based MedTech Global, which develops health information solutions for the primary health care sector, has been able to leverage a long track record in its domestic market when taking products to the world, says executive chairman Vino Ramayah. About three quarters of New Zealand's GPs use an e-record management system produced by MedTech. "It gives customers in the US and Asia a lot of confidence to know we already have 16,000 users in Australasia," he says.

## WORKING TOGETHER

That's not to say this development happens in a remote vacuum. Quite the opposite: Through close collaboration with multinational IT players, New Zealand's leading health technology companies have been able to tailor their products to the needs of their target markets.

Megan Tobin-Jones, marketing manager for Orion Health, says that much of the company's early business was won through contact with bigger IT players. The company has active partnerships with leading technology and medical companies such as Oracle, LogicaCMG, Sierra Systems, Sun Microsystems, Philips Medical Systems, Hewlett-Packard and IBM.

In one strategic project, Orion is working with Intel and Oracle to deliver a mobile patient information system at Hospital Universitario Son Dureta, in Palma de Mallorca, Spain. The system includes technology able to read a patient's wristband, then deliver the patient's medical information to doctors and nurses using a mobile device provided by Intel.

Microsoft's collaboration with seven New Zealand software companies to create a demonstration electronic records management system

is another example of the collaborative approach. Designed to work seamlessly across the spectrum of patient care, the "collaborative health showcase," unveiled at a healthcare IT trade fair in San Diego in 2006, closed the information loop between hospitals, community and primary care. The project highlighted how "off the shelf" and "plug and play" products could work together to provide a comprehensive and cost-efficient e-record system.

Two of the companies involved have since become global partners with Microsoft, including Healthphone — a New Zealand company with global headquarters in Seattle and a development facility in Auckland.

Healthphone's flagship product, Concordia, is a complete electronic health record and patient management system that's particularly targeted at the community care sector. The product is accessible using a laptop or PDA, meaning patient data is available to community, home care and long-term care providers wherever their jobs take them. One customer to adopt the product recently is Closing the Gap Healthcare Group, a Canadian community healthcare provider.

"This community care management solution will assist us to optimise direct patient care time, increase patient safety through one-time recording of clinical notes at the point of care, and improve patient outcomes by facilitating sharing of healthcare information across the continuum of care," says Connie Clerici, CEO and president of Closing the Gap.

As well as working as a lead solution provider to Microsoft, Healthphone has signed up several major telecommunications companies who will sell and host Healthphone products through their data centres.

## CREATIVE DEVICES

Cost and patient concerns are also main drivers for product development in the area of specialised medical equipment. Health technology companies are harnessing traditional New Zealand strengths in engineering and niche manufacturing to deliver innovative devices.

Fisher & Paykel Healthcare has applied its design expertise to humidification products used to treat respiratory conditions, products to treat obstructive sleep apnea, and a range of warmers, resuscitators and respiratory care devices for neonatal care. Its products are seen in medical facilities in 110 countries — including the Imperial College of Science, Technology and Medicine in London.

"It is clear to us that Fisher & Paykel Healthcare is one of the world

leaders in the field of respiratory humidification technology," says Dr. M. M. Chowdhury at the college's Department of Paediatrics. "They are well cited in the medical literature as having supported the advancement of humidification clinical scientific research on countless occasions, without which we could not advance clinical care."

Chowdhury says there's growing evidence that humidification of oxygen and other therapeutic gases may affect how well babies and children breathe during respiratory illness. "This may, in turn, affect the duration and costs of in-patient hospital stays."

Also in the neonatal care niche, BrainZ Instruments' neonatal brain monitor is distributed worldwide by GE Healthcare, which last year expanded its exclusive rights to sell the product to an extra 35 territories, in addition to the initial US and UK markets. The BrainZ solution can be used in hospitals to monitor full-term babies who have experienced oxygen deprivation at birth, and are at risk of seizures and resulting brain injuries.

Aranz Medical's innovative wound scanning device has made global inroads, as well. The SilhouetteMobile scanner uses a custom camera and software that enable health professionals to capture and analyse information about a wound at the point of care. It has just received clearance from the US Food and Drug Administration to be marketed in the United States.

"In our practice we have found measurements made by SilhouetteMobile to be repeatable, and the portability of the product makes it ideal for use in a wound clinic or home health setting," says Dr Michael Moore, president and medical director of the Wound Institute and Research Center in Dunmore, Pennsylvania.

Meanwhile, R&D in the medical devices arena continues to yield advancements in cost and convenience. Dunedin-based Lifevent Medical has developed an innovative Continuous Positive Airway Pressure device (used to treat acute respiratory failure) that is inexpensive and portable enough to be used inside and outside of hospitals. And Nexus6 has developed an asthma inhaler that enables data about medication use to be sent via the Internet to clinicians and researchers. □

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For contact information about the companies mentioned in this article, see the resource directory on page 65. For more about New Zealand's health IT capability, visit the Health IT Cluster website at [www.healthit.org.nz](http://www.healthit.org.nz).

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