

# I told you I was sick

June 23, 2014

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## What's the Aussie device that gives an immediate diagnosis for HIV, STIs and many other diseases?

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The AtomoRapid makes testing for diseases simpler.

The labour intensive and eye-wateringly expensive healthcare industry is ripe for disruption and John Kelly is hoping to be one of the major figures in shaking it up.

Kelly, who has engineering and MBA qualifications and background involving stints in senior positions at healthcare companies, was inspired to rethink the blood work business model after seeing the distress his young daughter experienced while having a blood test in a GP's office back in 2010.

Leaving aside the pain factor, Kelly realised the process of diagnosing diseases through blood tests was inefficient, typically involving a trained medical professional having to get the blood, the blood being sent somewhere for laboratory testing, and the patient having to return at a later date to get the results. While rapid diagnostic blood tests – the equivalent of pee-on-a-stick pregnancy tests – did exist, they were "bits in a box" arrangements, the equivalent of carting around a camera, clock, calendar and calculator rather than a single smart phone.

Kelly founded a company, Atomo Diagnostics, and set about creating a user-friendly and accurate one-stop-shop blood test. "Aside from the capital raising, product development and recruitment headaches all start-ups face, producing a next-generation medical device involves a lot of time and money to determine commercial and regulatory pathways to market. Plus, after all that, you need to convince to people to actually purchase the product," he says.

Fortunately, Kelly received plenty of backing during a three-year-long R&D and approvals process. The federal government kicked in with a hefty Commercialisation Australia and export development grants, as well as R&D rebates. Product development experts IDE came on board to help design the test, now called the AtomoRapid™ platform. BBI Solutions, one of the 800-pound gorillas of the global diagnostics industry, agreed to help commercialise the tests.

More recently, positive publicity has resulted from the test being awarded first place in Anhill's Smart 100 Top Aussie Innovations for 2014. AtomoRapid was also recently awarded best in show, and won the In Vitro Diagnostics Category, at the Medical Design Excellence Awards in New York.

Kelly opted to initially target the developing world rather than chasing after cashed-up developed-world consumers. AtomoRapid™ tests capable of diagnosing HIV and malaria were released in Africa in late 2013 and Philip Smith, project leader for mobile services at the Desmond Tutu HIV Foundation, was one of Atomo's earliest customers.

"Our service offers testing for chronic illnesses such as TB, diabetes and HIV," Smith says. "The AtomoRapid™ HIV has made testing simpler and more accessible by combining the lancet [needle], capillary tube [storage unit] and test strip [results] into one device. Our counsellors found it was both simpler to use than traditional tests and had a much clearer test strip, making it easier to identify the



John Kelly's work could revolutionise the way serious

outcome. The device is so straightforward we're now investigating the feasibility of allowing self-testing."

diseases are diagnosed.

Pleased as his is about his creation helping improving the lives of some of the world's most disadvantaged people, Kelly is hardly oblivious to the revenue opportunities on offer in developed nations, where populations are growing older and increasingly falling prey to lifestyle diseases.

"Around 100 million HIV tests are bought each year, so that's not a market to sniff at," says Kelly. "We concentrated on HIV and malaria because that was where false negatives from other products, which were sometimes greater than 10 per cent when used in the field, were having the most serious impact.

"But the platform certainly isn't limited to those diseases. There are hundreds of millions of rapid diagnostic tests sold each year for infectious diseases, cardiac markers, allergies, coagulation and coeliac and that's a market we are now focusing on. We're hoping to see AtomoRapid™ platforms in doctors' surgeries and pharmacies across first Europe, then all the other major markets, over the coming couple of years."

After paddling furiously for the best part of a decade, Kelly looks set to surf the tsunami-sized wave reordering the way we monitor and manage our health. In much the same way we can now wear a wristband capable of recording everything from the quality and quantity of our sleep to the amount of steps we took in a day and kilojoules we burnt doing so, thanks to Atomo Diagnostics and its competitors we'll soon be able to get an affordable, accurate test from the local chemist and find out in the privacy of our homes if we've got anything from an STI to a gluten intolerance.

"Healthcare is increasingly becoming decentralised and moving out of hospital and doctor's office settings," notes Kelly. "The products that are going to succeed in the market will be ones that aren't overly reliant on clinical expertise and ones that consumers view as user friendly and reliable."

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