



With the Loss of 90,000 Lives and 2.2 Million People Sick, at a Cost Of at least \$45 Billion Annually, due to the Spread of Infectious Diseases in Hospitals, Infonaut, Inc. is Solving a Global Problem With their Disease Surveillance and State of the Art Real-Time Location System (RTLS) Technology

Healthcare
Disease Surveillance
Infection Prevention and Control
(Privately Held)

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Niall Wallace
Co-Founder and CEO

BIO:

Niall Wallace is co-founder and CEO of Infonaut Inc. Infonaut is a privately held Canadian company born out of Ontario's SARS crisis, and dedicated to evidence-based solutions that address population health, infectious disease surveillance and containing outbreaks.

Niall has used his background in provincial data-warehousing solutions to develop deep expertise in innovative, web-based visualization platforms that use the power of ultra-accurate location technology and location-based business intelligence systems. Infonaut's product, **Hospital Watch Live (HWL)**, harnesses this expertise

to provide a patient safety solution that helps save lives and money through superior infection control and disease surveillance. HWL also effectively addresses strategic hospital priorities such as operational efficiency, quality of care and reducing healthcare costs.

Niall is a recognized healthcare and innovation thought-leader in Canada and participates in following federal and provincial boards and advisory groups:

- Healthcare Information Technology Association of Canada (ITAC) (National): Federal Board Member – Federal Health Innovation Advisory Council
- ITAC: Ontario Board Member
- Polytechnics Canada (representing Canada's 9 largest colleges) - National Strategy Group
- George Brown College - Innovation Advisory Board

Company Profile:

Infonaut is a privately held Health Technology company based in Toronto with expertise in disease surveillance, infection prevention and control, using state of the art real-time location system (RTLS) technology.

Born out of Toronto's SARS crisis, Infonaut has received recognition and acknowledgement from international leaders in hospital infection control, global technology vendors, trade journals, mass-market publications and leading market analysis firms for their unique platform and patented ap-

proach to Infection Prevention and Control.

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

CEOCFO: Mr. Wallace, what was the vision when you started Infonaut and where are you today?

Mr. Wallace: We had a vision of building a company to provide platforms and services that allow Public Health to better understand what was going on in cases of emergency like SARS. My partner and I witnessed a major gap in the information available, as well as how everyone tried to cope during the SARS crisis. The response within government went from using whiteboards in a war-room to starting to use some tools that allows them to better understand what was going on to create situational awareness.

Coming out of SARS were a number of expert recommendations – with many of them focused on better surveillance. Since 2006, Infonaut has been involved in developing infectious disease surveillance solutions for Public Health to better understand and deal with issues and outbreaks. And we got very good at it. In 2010, we made the decision to focus our software on the hospitals market.

We realized that we had a unique ability and approach, and we wanted want to apply all the knowledge and lessons that the company has learned to address the 4th leading cause of death in North America, hospital acquired infections.

CEOFO: What have you developed that you are presenting to hospitals?

Mr. Wallace: We have developed a solution for controlling and stopping infectious diseases in hospitals. Quite simply, we are helping to solve the mystery of how infections move around a healthcare facility by tracking, in real-time, all the infection control best practices as well as the potential vectors and risks of transmission. We can better track and understand infectious diseases, which enable us to provide the tools and information to break the chain of infection in hospitals.

Infonaut does four things. We automate a lot of the infection control surveillance and practices within a hospital, including hand hygiene compliance, which are currently manual driven and very labor intensive. We provide an intelligent map, so that the hospital can see and understand what is happening. We provide the tools to help them better understand, control and stop an outbreak. Then based on that information we are gathering, we work with staff on change management and education that will prevent the future spread of infection.

CEOFO: How have hospitals in the past been trying to deal with tracking?

Mr. Wallace: There are universally accepted techniques and methods of surveillance for understanding the history of location and the transmission of diseases – this makes up the science of epidemiology. These are very common to infection control but are currently very manual and intensive processes.

For example, when an infection happens at a hospital, staff will go around with the clip board and do interviews with patients, to find out where they were to build up a contract trace to try and locate the source. Hospitals also perform manual hand hygiene audits, where, essentially, your boss is looking over your shoulder to make sure you are washing your hands properly. Unfortunately, these best practices are not always followed. Everybody knows mostly what to do, but they do not always do it.

People on the front lines of healthcare work in an incredibly complex busy environment and they do not always get feedback to link cause and effect. By providing them with new evidence, staff can improve infection control by participating in our approach.

CEOFO: How does your solution work?

Mr. Wallace: There are three components to what we do; hardware, software and services. The hardware is used to track people, staff and assets moving through a facility by using existing RFID or Real-Time Location Systems (RTLS) that are already built into hospitals. With our software, we take all that information and combine it with information we pull from hospital systems – Discharge, Labs, Pharmacy and Surgery systems. This gives us a lot of additional information that we process and share with the frontlines to control an infectious disease outbreak. Services include com-

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prehensively understanding this new information and integrating it into a changed management program, so the hospital increasingly adopts a culture of safety and becomes as safe as possible for patients and staff.

CEOFO: Where are you in deploying and commercializing your system?

Mr. Wallace: We have been in live hospital setting for two years of trials. We also have a simulated practice center – a simulated 50 bed hospital - at a college in downtown Toronto, where we have been set up for over two years, perfecting all the location accuracy and software itself. In addition, we have just been installed in Canada's top academic teaching hospital, the University Health Network – specifically in the Toronto General Hospital, across their multi-organ transplant program, which has a very high risk patient population.

CEOFO: How does the cost factor in?

Mr. Wallace: Focusing on the US, we work with hospitals to understand the cost of an infection, which includes not only the direct treatment but also the opportunity costs and soft costs related to patient safety. An important development has been the move in the US from pay-for-volume, to pay-for-performance. Increasingly hospitals are not being reimbursed for what are termed 'hospital mistakes'.

There is the opportunity cost lost for somebody taking up the bed and somebody in the community that is not able to use that resource and pay for that resource. Litigation and risk activity is certainly huge. Environmental cleaning and response is an enormous expense.

Then you have brand and reputation. If the hospital is focused on a quality and safety agenda as part of your brand strategy there is a large impact when outbreaks are shutting down parts of a hospital.

US hospitals that have recently experienced an outbreak, costs are usually between \$3,000 and \$7,500 per bed per month. The CDC (Center for Disease Control) has reported that it may be costly to the US health system up to \$45 billion a year. However, we actually think that is just the tip of the iceberg, as it only includes direct costs.

We have a managed service model where the hospital is not required to pay anything upfront – they enter into a contract on a "per bed / per month" model. A typical installation is about \$25,000 per month.

CEOFO: Are hospitals actively looking for a solution to the problem of infection or is it a backburner issue?

Mr. Wallace: You have touched on two issues that we are addressing. First of all, I believe that they are very actively looking for solutions. Leading hospitals realize that quality and safety are a huge part of their agenda and they are looking very closely at the cost of things like infections that impact our quality and safety agenda. They have adopted solutions in the past that have been developed for

hand hygiene measurement, or lab system reporting. These are the current leading-edge solutions that are available to hospitals.

Secondly, is that we are introducing very disruptive technology. Nobody has used this type of approach before. We have developed a killer app for Real-Time Locating Systems. We are the only company that offers a clinical outcome solution based on this technology. RTLS is currently being used for asset management and maybe a little bit of understanding flow, but nobody has offered a clinical solution based on this technology. We are first to market with this and when you are introducing a very disruptive new technology to address a problem that is, up till now, the current best practice involved a lot of manual based solutions.

Given that we are introducing something new to the market, we have to educate the market on what can be done. I am finding there is great interest and traction amongst industry leaders that have made a commitment to safety and quality.

CEOCFO: How do you address the Big Brother problem?

Mr. Wallace: Our first commitment is to privacy and an ethical approach, which is a major competitive advantage for us. Before we even coded a single line of code, we adopted the principles of Privacy by Design (PbD). PbD is a privacy philosophy that started in Canada, but has been adopted globally and is now being written into US privacy legislation. The Kerry McCain legislation actually refers to it by name in the drafts that have gone forward.

PbD is philosophy that addresses privacy upfront and develops a win-win situation by making things totally transparent, by making sure the only collect the information you need to, and approaching privacy as an advantage rather than a disadvantage.

Realizing that we are developing a clinical solution that could be considered “big brother-ish”, we knew that privacy was going to be very important from the outset. An example of how we have implemented at the Toronto General Hospital has been by allowing staff participation to be completely voluntary. This goes against normal management edicts of “we are going to force you to change your behavior better”. The individual staff tracking is anonymous. We do not actually collect the names of the staff. We know that individual clinical staff or environmental workers are on a certain shift, but we report the aggregated information back only. Therefore, it tracks group behaviors and not individual behaviors.

Additionally, much like a radiologist would wear a radiation badge, we are asking staff to see this as an occupational safety device; the only time that we would identify an individual is when they have come in direct exposure to something like TB or another infectious disease. Then that tag number is given back to a trusted member of the staff or union; in the case of Toronto General Hospital, it is the director of Infection Prevention Control. That information is then used to protect staff as much as it is to protect patients. We are about occupational safety as much as we are about patient safety in the hospitals because during SARS the biggest impact was to the clinical frontline. If staff does

not feel comfortable with how this information is being used to protect them and patients, then no one is going to force them to participate. So far, our commitment to privacy and ethics has resulted in 100% adoption rate.

CEOCFO: Why should investors pay attention to Infonaut?

Mr. Wallace: We are uniquely solving a global problem that, in the United States alone, costs 90,000 lives, makes 2.2M people sick, with at least \$45B lost annually.

Infonaut is a Canadian company that went through an experience that nobody else in the world has experienced. SARS almost broke our healthcare system and the costs were enormous, in lives and dollars. It was an experience that we do not ever want to go through again.

Bottom line is there is no known method to comprehensively identify and stop infection transmission. Until now.

CEOCFO: Final thoughts, what should people remember most about Infonaut?

Mr. Wallace: We are uniquely addressing a global problem – but I want to emphasize our approach to privacy and our commitment to the Privacy by Design Philosophy. I have been made an ambassador of Privacy by Design by Dr. Ann Cavoukian, Ph.D., Information and Privacy Commissioner for Ontario. Having her office's recognition, and delivering a surveillance solution for hospitals represents a massive step forward in protecting patients, while protecting staff - doing it the right way.



INFONAUT

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