



LEADER IN INFECTION CONTROL SOLUTIONS
2014 Half Year Update

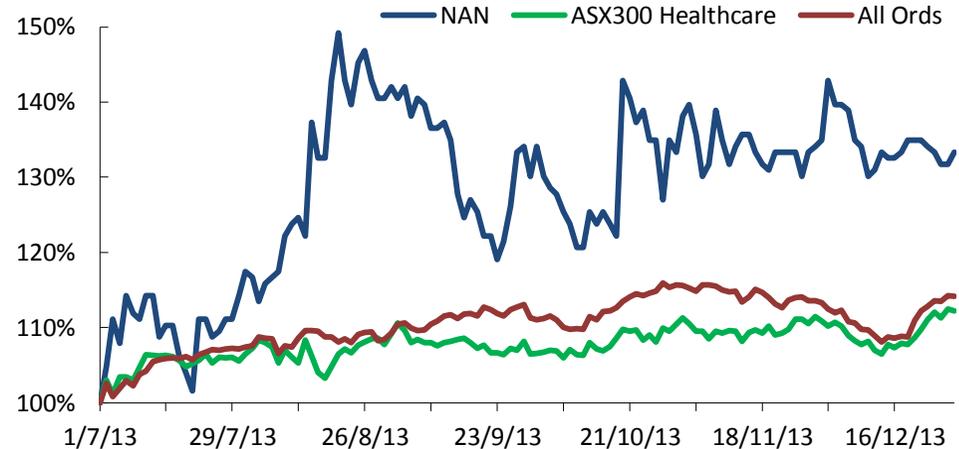
Michael Kavanagh, CEO and President
24 February 2013

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Company Overview

- We aim to improve the safety of patients, clinics and their staff
- Proprietary automated system for low temperature, high level disinfection
- First product, **trophon[®] EPR** for disinfection of ultra sound probes
- Approved for sale by: US FDA, TGA(AU), CE mark notified body (TUV Rheinland), Health Canada, Medsafe (NZ) & South Korean FDA
- 110 Staff across Australia, US, UK, Germany & France
- GE Healthcare exclusive distributor in North America
- Toshiba and GEHC - UK distributors



Key Corporate Data

Share price*	\$0.80
Shares on issue	263.1 million
Market capitalisation*	\$210 million
Cash (31 Dec 2013)	\$21.7 million
Share register breakdown	Founders and Related Parties 22.2% Institutions 33.1% Private 40.6% Corporate 4.1%

* Close of trade: 20 February 2014

Fundamentals for the business continue to strengthen

- ❑ Growing awareness of the Healthcare Acquired Infection risk associated with Imaging
- ❑ Regulation / Guidelines – Trends towards stricter controls (HLD) and Automation.
- ❑ Risk mitigation growing in importance under Accountable Healthcare models
- ❑ Clinical evidence for *trophon*[®] EPR mounting
- ❑ Growing recognition and adoption as we implement global expansion strategy
- ❑ Current toxic HLD solutions progressively being rejected by customers and regulators
- ❑ Trend towards Point of Care adoption

Imaging procedure HAIs

- ✓ Imaging procedure HAIs – a critical subset of HAIs that are not often discussed.
- ✓ 0.9 - 9% of barrier sheaths and condoms leak.¹
- ✓ A meta-analysis has shown that 12.9% of transducers are contaminated with pathogenic bacteria following routine disinfection.²
- ✓ HPV, a known papillomavirus in the emergency department
- ✓ HPV, a known cause of cervical cancer, has been found on up to 7.5% of transvaginal ultrasound transducers following routine disinfection.³
- ✓ A fatal case of hepatitis B and non-fatal case of hepatitis C have been attributed to improper ultrasound transducer disinfection.^{4,5}
- ✓ Ultrasound transducer handles are not routinely disinfected and can harbour pathogens including MRSA.⁶



The use of ultrasonography based on biopsy, dilation, and abdominal surgery leading to peritoneal fluid leak in invasive prostate cancer: the emergency ultrasonography can be very critical. Infection on the day under the cover of the probe identified as being an issue. In safety discharge, there is an early follow-up of the emergency assessment. The use of the ED by a patient of 80% per cent of patients with the ED. The use of ultrasonography (US) has been shown to be a highly sensitive and specific tool for the diagnosis of acute abdomen. The use of US in the ED is a highly sensitive and specific tool for the diagnosis of acute abdomen. The use of US in the ED is a highly sensitive and specific tool for the diagnosis of acute abdomen.

Introduction
Appropriate ultrasound transducer disinfection has been an ongoing and recent question in gastroenterology and urology. However, the routine use of probe covers followed by low-level disinfection (LDD) is usually applied before patients in some countries (eg, France).
Aim: To perform a systematic review and meta-analysis of the scientific literature in order to identify case reports of contamination following endocavity ultrasound probe use, and to estimate the infection prevalence related to the use of these probes in common daily practice.
Methods: Systematic review and meta-analysis.
Results: From the 402 potentially eligible references, 32 articles were finally included. Very few cases with an established route of contamination had been reported. Indeed, apart from occurrence of outbreaks, it is difficult to not impossible to detect viral contamination through the use of endocavity ultrasound probes. However, there was a pooled prevalence of 12.9% (95% confidence interval: 5.2-24.3) for pathogenic bacteria, and 7.0% (0.0-15.0) for frequently occurring virus (human papillomavirus, herpes simplex virus, and cytomegalovirus) for endocavity ultrasound probes, both after low-level disinfection. The pooled prevalence of infected patients after transrectal ultrasound and guided biopsy was estimated to be 3.1% (0.4-4.3).
Conclusion: There appears to be a risk of transmitting bacterial or viral infection via endocavity ultrasound transducer, and the present meta-analysis provides an estimate of this risk. Further research with sophisticated modeling is warranted to identify the risk.
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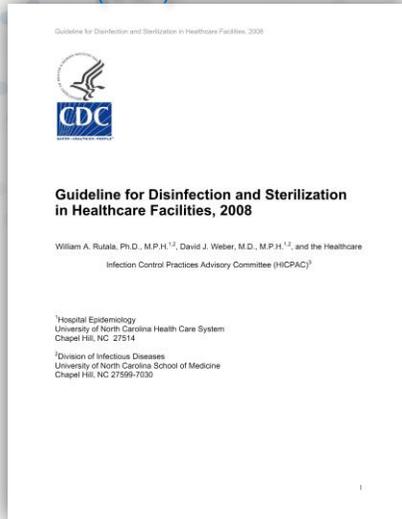
1. Vickery et al, J Inf Pub Health 2013; in press
2. Leroy, S. J Hosp Infect 2013 83(2): 99-106.
3. Ma S et al. Emerg Med J. 2013 30(6):472-5
4. Ferhi K, et al. Case Rep Urol, 2013; p. 797248.

5. Medicines and Healthcare products Regulatory Agency (UK), Medical Device Alert Ref: MDA/2012/037
6. McNally G, Ngu A, ISUOG world congress, Sydney, 2013

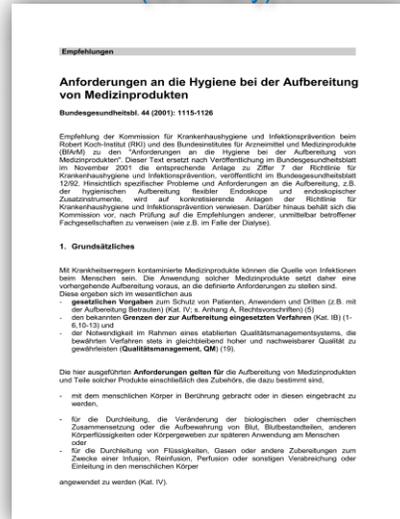
The case for automation

The following national bodies recommend automated reprocessing over manual methods:¹⁻³

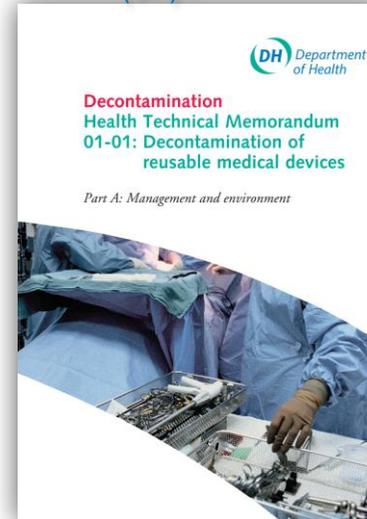
Centers for Disease Control (USA).¹



Robert Koch Institute (Germany).²



Department of Health (UK).³



- ✓ Manual disinfection is known to lead to reduced protocol compliance.⁴
- ✓ Any disinfection method must be thoroughly validated to give safe, consistent and reproducible results.^{3,5}
- ✓ Manual methods are more difficult to validate increasing compliance risk.

1. Rutala W., Weber DJ., 2008, Centers of Disease Control and Prevention
2. Recommendation of the commission for hospital hygiene and infection Prevention at the Robert Koch Institute (RKI), Federal Health Gazette Health Research – Health Protection, 2001 44:1115–1126

3. Department of Health, Estates & Facilities Division, HTM01-01 2007
4. Ofstead, C. L., et al. (2010). Gastroenterol Nurs 33(4): 304-311.
5. DGKH, DGSV and ZENTRALSTERILISATION, *Suppl. 2*, 2007 May Volume 15, International Journal

A new solution being embraced.....

The CEO of a group of radiology practices in Canada captures the issue perfectly:

“Here we are, with a new \$150K ultrasound machine and \$15K probes to go with it that we’re cleaning with 1960s glutaraldehyde soaking technology.”

Feisal Keshavjee, CEO, Radiology Consultants Associated

Any solution needs to mitigate risks to patients, staff and the environment by having the following attributes:

- ✓ Proven efficacy
- ✓ Automation
- ✓ Easy method compliance
- ✓ Process controls
- ✓ Straight-forward validation
- ✓ Cost effectiveness
- ✓ Non-toxic to patients and staff
- ✓ Avoid production of toxic waste products

trophon® EPR at the forefront of imaging related infection control

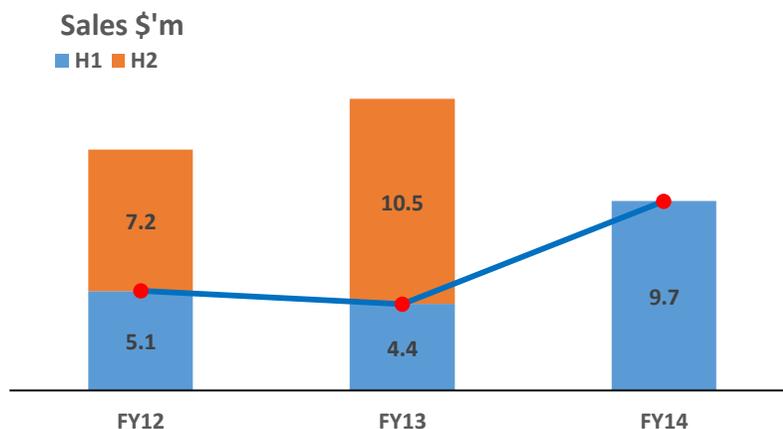


2014 H1 Financial Results

Nanosonics: Financial Results 2014 H1

	H1 F14 \$million	H1 F13 \$million	% Change
USA	7.994	3.034	↑163%
Aus/NZ*	1.094	1.213	↓ 10%
Europe +ROW	.592	.173	↑242%
Total Sales Revenue	9.68	4.42	↑119%
Operating Expenses	10.3	9.4	↑ 10%
Operating Loss	3.482	6.027	↓ 42%

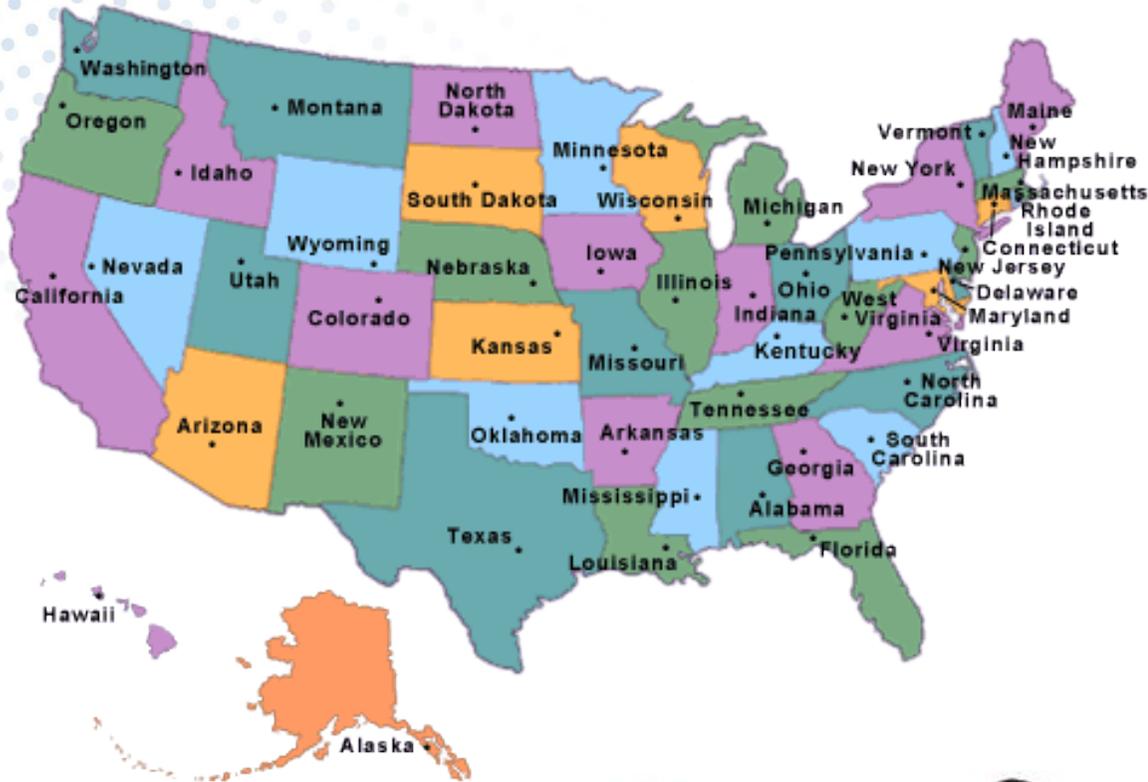
* Due to order timing



Cash Balance at Dec 31
\$21.65 million

Regional Update

North America



Ron Bacskai
President & CEO, Nanosonics Inc.



Keith Koby
Vice President Sales



John Corbett
Program Manager



Lisa Davis
Business Development
Manager



Donna Fiorentino
Northeast Regional
Sales Manager



Kevin Markham
Southeast Regional
Sales Manager



Norm Rich
Western Regional
Sales Manager



Tom O'Neill
North Central Regional
Sales Manager



Ray Beams
South Central Regional
Sales Manager

GE investment builds and gaining traction



GE Healthcare



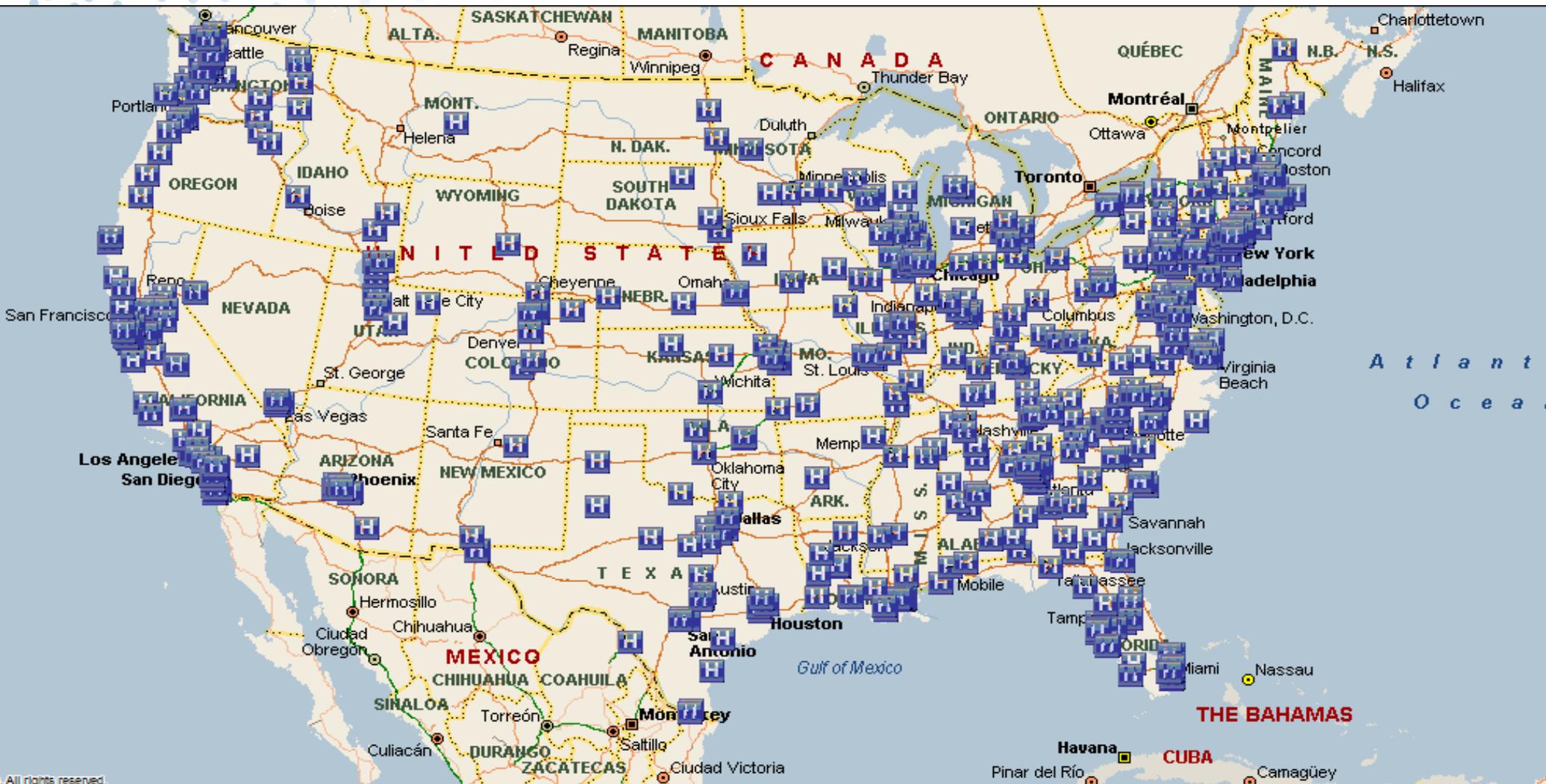
GE VENTURES

- Non-dilutive investment for *trophon*[®] EPR sales and increased marketing activities continues
- GE funded dedicated *trophon*[®] EPR sales team supporting the full North American ultrasound sales force in place
- Strategic Marketing investment continues

38 of the top 50 Hospitals as of Jan 2014



1286 USA locations as of Jan 2014



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United Kingdom



- Number of key hospitals adopting trophon EPR
- Health Boards reviews nearing completion
- Awareness activities progressing

Medicines & Healthcare products Regulatory Agency



Government agency with responsibilities for standards of safety, quality & performance

Medical Device Alert Ref: MDA/2012/037 Issued: 28 June 2012

Device	Problem	Action
<ul style="list-style-type: none"> Reusable transoesophageal, echocardiography, transvaginal and transrectal ultrasound probes (transducers). All models. All manufacturers 	<ul style="list-style-type: none"> The MHRA is aware of an incident where the death of a patient from hepatitis B infection may have been associated with a failure to appropriately decontaminate a transoesophageal echocardiography probe between each patient use. The MHRA is issuing this alert to advise users to appropriately decontaminate all types of reusable ultrasound probes 	<ul style="list-style-type: none"> Review, and if necessary update, local procedures for all ultrasound probes that are used within body cavities to ensure that they are decontaminated appropriately between each patient use, in accordance with the manufacturer's instructions. Ensure that staff who decontaminate medical devices are appropriately trained and fully aware of their responsibilities.

Medical Device Alert Ref: MDA/2013/019 Issued: 27 March 2013

Device	Problem	Action
<ul style="list-style-type: none"> Detergent and disinfection wipes used on reusable medical devices with plastic surfaces All manufacturers 	<ul style="list-style-type: none"> Detergent and disinfection wipes can damage plastic surfaces of medical devices if they are not compatible with the surface material. Damaged surfaces may compromise the ability to decontaminate medical devices adequately and / or may interfere with device function 	<ul style="list-style-type: none"> Ensure detergent and disinfectant wipes are compatible with the device. Always follow the device manufacturer's decontamination instructions. Look for signs of damage to the medical device and follow local reporting procedures as appropriate. If the manufacturer's decontamination instructions are inadequate, report this fact to the MHRA and the manufacturer.

Health Boards review nearing completion



News

Ultrasound Probe Decontamination - National Survey Launched

4th October 2012

In August HFS launched a national survey of current decontamination practice of reusable transrectal (TRU), transvaginal (TVU) and transoesophageal echocardiography (TOE) ultrasound probes/transducers.



GIG
CYMRU
NHS
WALES

Bwrdd Iechyd
Hywel Dda
Health Board

Full review of TV and TR reprocessing services in order to establish clear National Recommendations underway

Growing Market Awareness



Queen Elizabeth Hospital Birmingham NHS Foundation Trust

PROBE DECONTAMINATION: A MULTIDISCIPLINARY APPROACH



A ONE-DAY COURSE – TUESDAY 17TH JUNE 2014

Queen Elizabeth Hospital Birmingham 
Part of University Hospitals Birmingham
NHS Foundation Trust

To be held at the
Keele Hall, Keele University
Keele, Staffordshire ST5 5BG
Cost: £80.00 including lunch and tea/coffee

Faculty:
Ann Allen - Clinical Lead Sonographer - King's Mill Hospital, Sutton in Ashfield
Tina Bradley - Laboratory Manager - Hospital Infection Research Laboratory
Queen Elizabeth Hospital, Birmingham
Dr Paul Dubbins - Consultant Radiologist - Derriford Hospital, Plymouth
Dr Kim Jacobson - Consultant Medical Microbiologist - North Bristol NHS Trust
Dr Peter Jenks - Consultant Medical Microbiologist - Derriford Hospital, Plymouth

Putting you first
Toshiba Medical Systems UK

About the course

This programme has been designed to equip delegates with the knowledge to understand risks and provide information on protecting patients and staff from infection and to enable staff to identify responsibilities in relation to decontamination.

- 9.30 Registration and refreshments
- 9.50 Welcome
- 10.00 Infection – risk assessment for intracavity probes by Paul Dubbins
- 10.40 What are the day to day issues with probe decontamination? By Ann Allen
- 11.10 Tea/Coffee
- 11.40 How can these risks be minimised? The basics of infection control.
By Peter Jenks
- 12.20 What is decontamination? By Tina Bradley
- 13.00 Lunch
- 14.00 Quality - traceability, documentation, training, audit. Why is it important?
By Kim Jacobson.
- 14.40 Panel discussion
- 15.10 Depart

Whittington Hospital

In light of the serious cost pressures facing UK NHS Trust Hospitals there is a recognition of the potential issues which may result from inappropriate U/S probe care

Trophon approved by Whittington Hospital

4. Cost Pressures

- 4.1. It has been agreed by the Executive Committee that only cost pressures which are absolutely unavoidable will be agreed, in these instances Executive team approval and Chief Executive sign off is required. In 2013/14 unavoidable cost pressures which total £191k have been approved, the equivalent value for 2014/15 being a saving of £359k. This is further illustrated in the following figure:

FIGURE 10: Unavoidable Cost Pressures Approved in 2013/14

Division / Service	Description	2013/14 Cost Pressure £000's	2014/15 Cost Pressure £000's
Corporate - E&F	Purchase of Trophon Decontamination Units		

10 trophon EPR units delivered January 2014!

Germany



- Clinical studies continue – nearing completion
- Awareness strategies continue
- Units in a number of key luminary sites

New Published evidence supporting trophon® EPR

6 | ORIGINAL ARTICLE

Central Service 1/2014

Automatic, validated, non-toxic high-level disinfection (HLD) of ultrasound transducers

A novel approach to minimize the risk of infectious disease transmission

P. Heeg*, J Gauer



The present study has shown Trophon® EPR is the only software-controlled, automated, one touch, validated device currently available in Germany proven to provide HLD within 7 min time per disinfection cycle and therefore suitable to be used for routine HLD disinfection of medical devices Category A such as ultrasound transducers in daily clinical practice. The new device fulfils all requirements for HLD as requested by the German Law for Infection Prevention and the Law on Medical Devices (MPG) (2, 3) in combination with the Medical Device Operator Ordinance (MPBetrVO) (4) and based on the medical device risk assessment and in compliance with the Joint Guideline of the Commission for Hospital Hygiene and Prevention of Infection (KRINKO) at the Robert Koch Institute (RKI) and the Federal Institute for Drugs and Medical Products (BfArM) (2, 3).

trophon[®] *EPR* a Finalist for M&K Award 2014



Management & Krankenhaus (M&K)

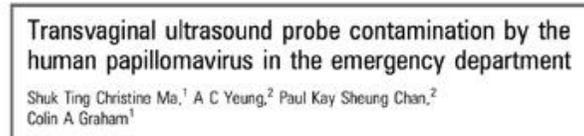
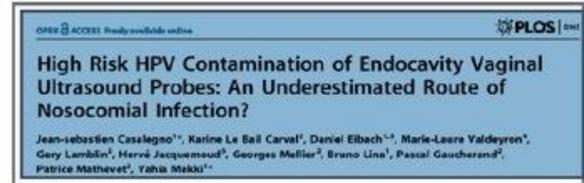
- the leading newspaper for decisionmakers in German health care market
- *trophon*[®] *EPR* a finalist in Hygiene Sector



M&K
— Management & —
Krankenhaus
AWARD
2014

WINNER

France – Awareness of risk continues to grow

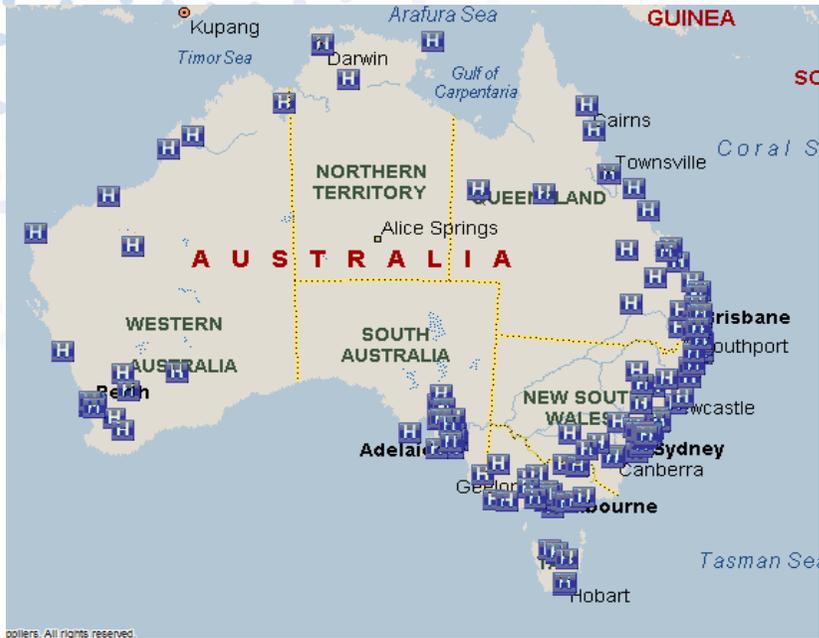


Poor infection control practices in France may cause up to **30,000 people** to develop an infection from intracavity ultrasound procedures.

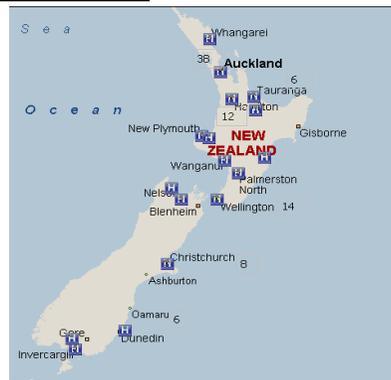
Of the four million yearly intracavity examinations the following transmissions could occur:¹

- ❑ 63 HIV cases
- ❑ 1,624 hepatitis B cases
- ❑ 239 hepatitis C cases
- ❑ 14,840 HPV cases
- ❑ 14,920 herpes cases.

Major share in Australian/NZ Market



- Over 452 sites in Australia with trophon EPR
- Australia's largest medical imaging clinic network, I-MED, expanding adoption nationally
- Adopted in 17 sites in NZ



Summary

- ❑ Fundamentals for the Business continue to strengthen
- ❑ Momentum continuing to build in North America
- ❑ Europe gaining traction
- ❑ First have revenue up 119% on PCP and net loss reduced by 42%
- ❑ Strong balance sheet with \$21.65 million
- ❑ Accelerating sales growth expected

