



LEADER IN INFECTION CONTROL SOLUTIONS

*Improving the safety of patients, clinics, their staff
and the environment*



ANNUAL GENERAL MEETING
7 November 2014

Nanosonics Board, Secretaries and Auditor



Maurie Stang
Maurie Stang



McGregor Grant
CFO / Company Secretary



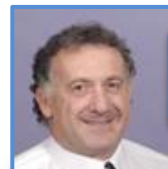
Michael Kavanagh
CEO and Executive Director



Rob Waring
Company Secretary



Richard England
Non-Executive Director



Mark Nicholaeff
Auditor, UHY Haines Norton



David Fisher
Non-Executive Director



Ron Weinberger
President Technology Development / Commercialisation



ANNUAL GENERAL MEETING

2014

Resolution 1

Election of a Director – Dr David Fisher

Resolution: That Dr David Fisher, who retires as a Director pursuant to the Company's Constitution and, being eligible, offers himself for re-election, be elected a Director.

Proxy votes received

Votes for	:	120,187,812
Against	:	24,646,228
Abstained/Excluded	:	28,114
Discretion	:	1,088,974

Resolution 2

Remuneration Report

Resolution: That the Remuneration Report for the financial year ended 30 June 2014 be adopted.

Proxy votes received

Votes for	:	115,401,669
Against	:	498,748
Abstained/Excluded	:	28,961,738
Discretion	:	1,088,974



Chairman's Address

Mr Maurie Stang

Disclaimer

This presentation is intended to provide a general outline only and is not intended to be a definitive statement on the subject matter. The information in this presentation, whether written or verbal, has been prepared without taking into account the commercial, financial or other needs of any individual or organisation. Certain information may relate to protected intellectual property rights owned by Nanosonics (the “Company”). While Nanosonics has taken due care in compiling the information, neither the Company nor its officers or advisors or any other person warrants the accuracy, reliability, completeness or timeliness of the information or guarantees the commercial or investment performance of the Company. The information does not constitute advice of any kind and should not be relied on as such. Investors must make their own independent assessment of the Company and undertake such additional enquiries as they deem necessary or appropriate for their own investment purposes. Any and all use of the information is at your own risk.

Strengthening Case for Increased Investment in Preventing HAIs



The NEW ENGLAND
JOURNAL of MEDICINE

May 2014 NEJM paper recommended increasing surveillance and prevention activities to fight HAIs



"Our nation is making progress in preventing healthcare-associated infections through three main mechanisms:

- *financial incentives to improve quality;*
- *performance measures and public reporting to improve transparency; and*
- *and the spreading and scaling of effective interventions.*

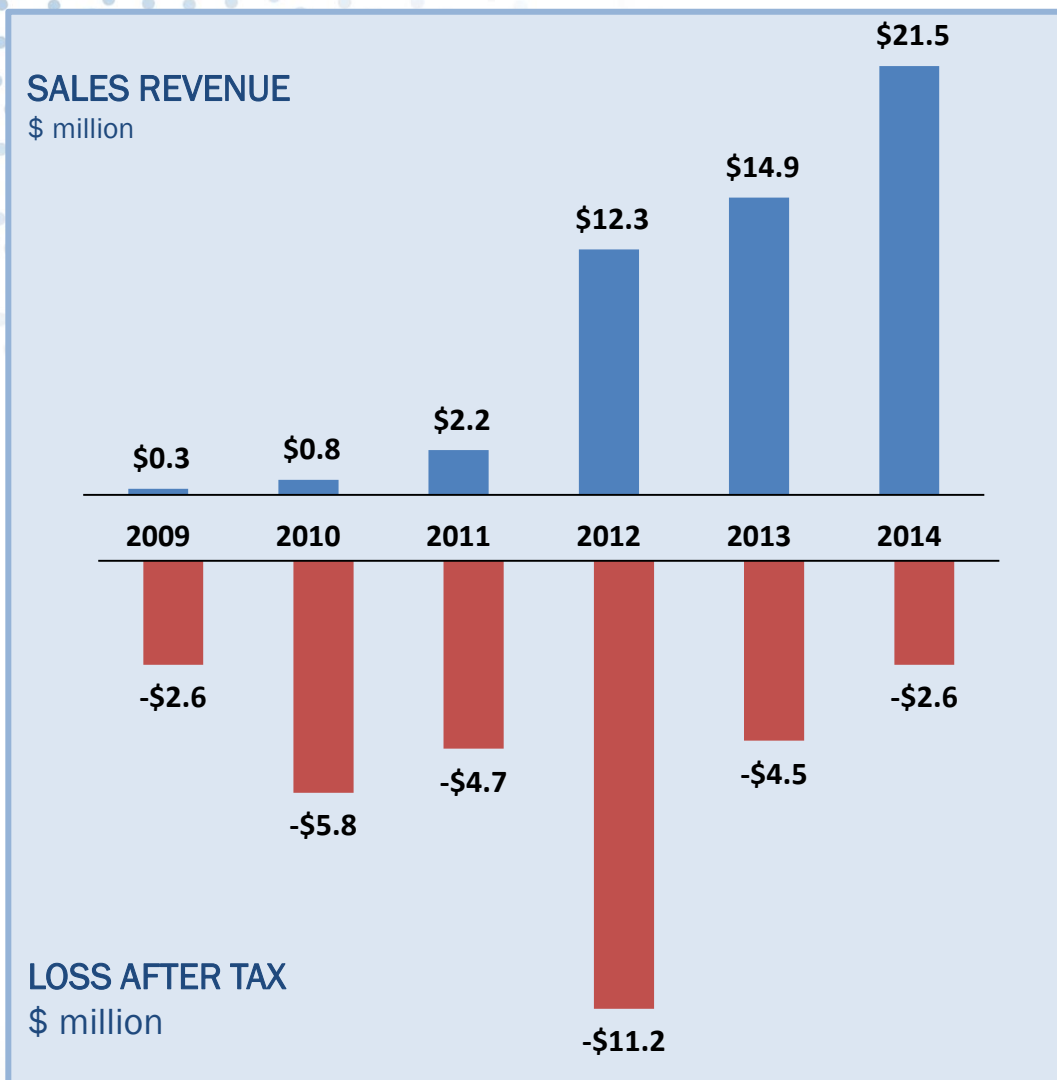
This progress represents thousands of lives saved, prevented patient harm, and the associated reduction in costs across our

1. Patrick Conway, MD, deputy administrator for innovation and quality for the Centers for Medicare & Medicaid Services (CMS), and CMS Chief Medical Officer

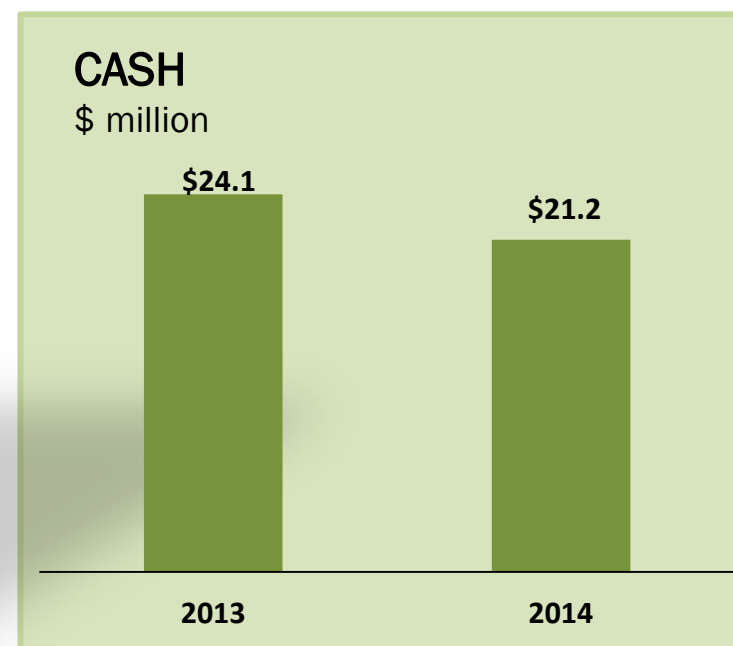
2014: A Year of Achievements



FY2014: A Year of Solid Financial Growth

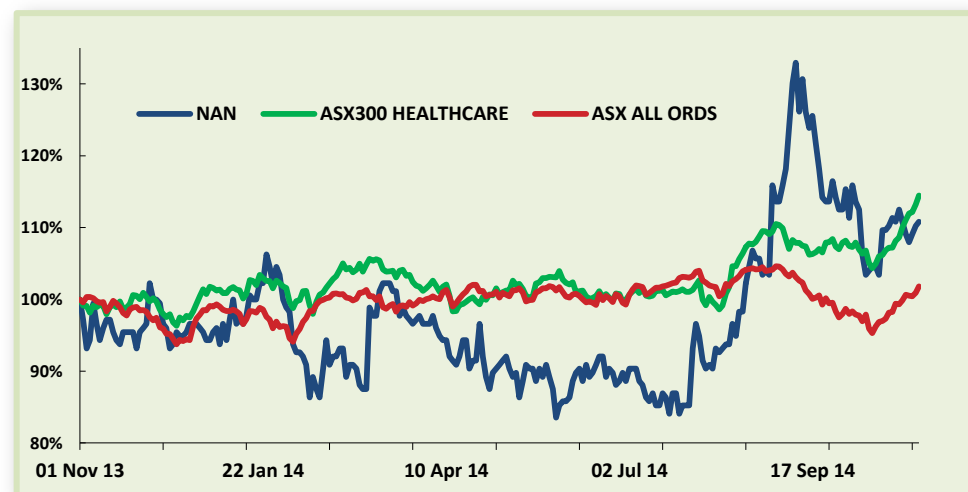


- ✓ Solid revenue growth
- ✓ Trending to profitability
- ✓ Strong cash reserves



FY14: Strong Market Capitalisation Growth

12 months (1 Nov '13 – 31 Oct '14)



	31 Oct 14	30 Jun 14	30 Jun 13
Total shares issued (million)	264.33	263.82	261.99
Share price	\$0.975	\$0.79	\$0.61
Market capitalisation (million)	\$258	\$208	\$159
Average daily volume (12 mths)	348,000	349,000	198,000

Growing Media Coverage in 2014

- 59 individual pieces of media coverage in FY14
- Top tier coverage across News Ltd and Fairfax publications
- Strong coverage in healthcare and biotech media



Financial Review on Sunday

- Story covered the rise of high tech manufacturing and Nanosonics part in sector.
- Story also appeared online.
- Story watched by 280,000 viewers.

FINANCIAL REVIEW
SUNDAY

The Australian

- Company profiled by stock watch expert Tim Boreham.
- Rated stock as long term buy.
- Story seen by possible 232,000 readers.

THE AUSTRALIAN 

Smart Investor

- Company profiled by leading small caps writer Trevor Hoey.
- Story also appeared in AFR.
- Story seen by possible 230,000 readers.

smartinvestor
Nanosonics to keep up momentum

Australian Financial Review

- Story profiled CEO Michael Kavanagh and objectives for the Company.
- Story read by a possible 60,000 people.

FINANCIAL REVIEW
Kavanagh tries for Cochlear pt II

Media Coverage Highlights

It's time to get biotechnical

Nanosonics is up 125 per cent since early May as UK orders pick up for its Trophon ultrasound probe disinfectant.

Nanosonics named healthcare industry's Company of the Year for 2013

Diagnosis positive for medical advances

Under the Radar Richard Hemming

3 biotech stocks for a healthy portfolio

Biotech comes out of the wilderness

Ultrasound probes rife with bugs: study

proactiveinvestors
AUSTRALIA

the west
The West Australian
com.au

eureka
report



Biotechs lead Uncapped 100 higher
BRENDON LAU | 31 JULY 2013

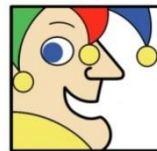
Intelligent Investor Nathan Bell

THE AUSTRALIAN

The Sun-Herald

THE AGE

Herald Sun



The Motley Fool

NEWS
MEDICAL



Biotech Daily

THE SUNDAY AGE

The Sydney Morning Herald

labonline
com.au

Life, analytical & environmental science

smartinvestor

THE BULL
COM.AU

The New Zealand Herald

medical
observer

LifeScientist



JOHN BEVERIDGE

nanoSonics

9 NEWS Finance

FINANCIAL REVIEW

The Canberra Times

FY14: Participated in More Than 40 Major Trade Shows/Conferences



FY15 Coming Conferences



Société Française de Radiologie

DGGG 2014

60. Kongress der Deutschen Gesellschaft
für Gynäkologie und Geburtshilfe
8.-11.10.2014 • München



Institute of
Decontamination
Sciences

*A Century
of Transforming Medicine*
100 RSNA 2014
100TH SCIENTIFIC ASSEMBLY AND ANNUAL MEETING

NOV
30
thru
DEC
05



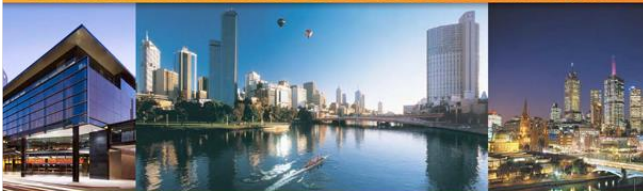
12 - 15 Nov 2014
Düsseldorf • Germany



ACIPC
Australasian College
for Infection Prevention and Control

44th Annual Scientific Meeting

AUSTRALASIAN SOCIETY FOR ULTRASOUND IN MEDICINE



17 - 19 OCTOBER 2014 • CROWN PROMENADE, MELBOURNE, VIC



British Medical Ultrasound Society

Ultrasound 2014

46th Annual Scientific Meeting

Nanosonics Board and Sub-Committees

		Audit and Risk Committee	Remuneration Committee	Nomination Committee	R&D and Innovation Committee (Est. July 2014)
	Maurie Stang Non-Executive Chairman	✓	✓	✓	✓
	Michael Kavanagh CEO and President, Managing Director				✓
	Richard England Non-Executive Director	* ✓	* ✓	* ✓	
	David Fisher Non-Executive Director	✓	✓	✓	* ✓
	Ron Weinberger President Technology Development / Commercialisation				✓

* Chairman



CEO and President Address Mr Michael Kavanagh



A Year of Transformation and Growth

Executive Team



Michael Kavanagh
CEO and President



Ron Weinberger
President
Technology
Development/
Commercialisation



McGregor Grant
CFO and Company
Secretary



Gerard Putt
Head of
Manufacturing &
Operations



Michael Potas
Head of RD&D



Vincent Wang
Head of Global
Services



Ruth Cremin
Head of Quality
and Regulatory



Kirste Courtney
Human Resources
Manager



Ron Bacskai
President and CEO
Nanosonics Inc.



**Bryn
Tudor-Owen**
Country Manager
- UK



Ralf Schmähling
Country Manager
- Germany



Julien Laronze
Country Manager
- France



Corporate Mission



We improve the safety of patients, clinics, their staff and the environment by transforming the way infection prevention practices are understood and conducted, and introducing innovative technologies that deliver improved standards of care.

Johns Hopkins Photo Credit: American Nurse Project. Does not imply endorsement

Core Corporate Objectives

We improve the safety of patients, clinics, their staff and the environment by transforming the way infection prevention practices are understood and conducted, and introducing innovative technologies that deliver improved standards of care.



Customer Experience



Product Innovation



Operational Excellence



People Engagement



Value Creation

trophon® EPR



trophon® EPR



Fast

Fast automated high level disinfection



Helps protect

Fully enclosed system limits exposure to harmful chemicals



Consistent

Quality assured consistency



Probe friendly

Probe friendly process. Compatible with more than 600 probe models



Environmentally Friendly

Harmless oxygen and water by-products. More than 70% recyclable components



Cost Efficient

Integrates into HLD process at point of care and improves workflows



Effective

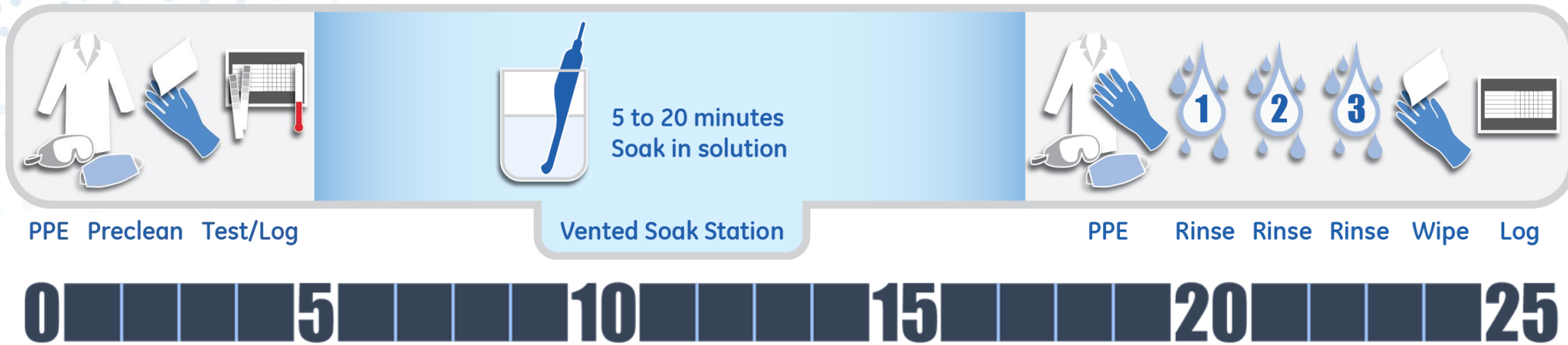
Clinically validated trophon EPR disinfects both probe shaft AND handle



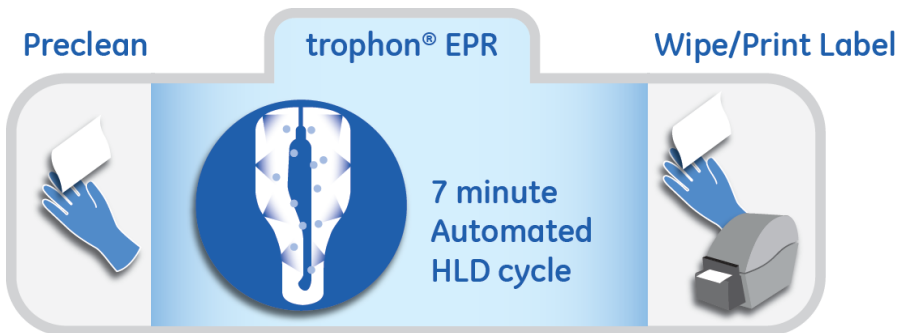
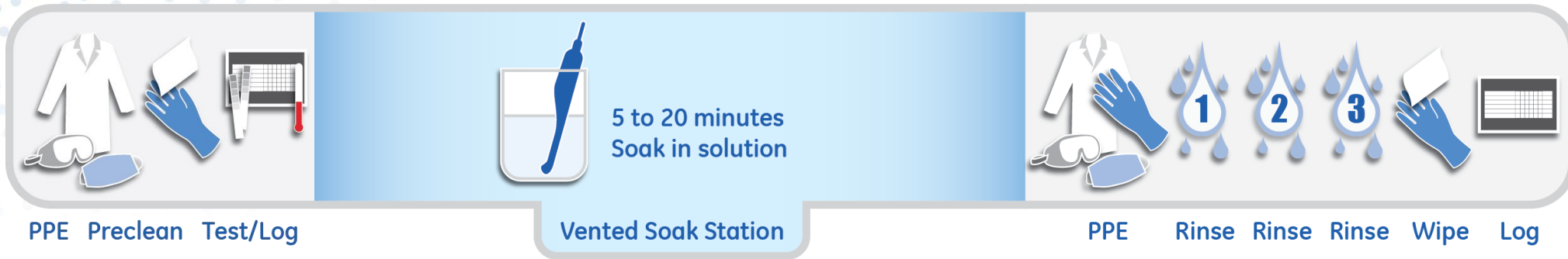
Traceability

Best practice documentation solution

Current Workflow with Soaking



Delivering Superior Performance and Workflow



“...complete and safer protection for our patients and staff ”

“The trophon EPR has been the biggest thing to hit ultrasound since colour Doppler.

“trophon was an answered prayer! It has solved so many high level disinfection (HLD) issues while offering more complete and safer protection for our patients and staff – in half the time.

*Robert De Jong Jr., RDMS, RDCS, RVT, Radiology
Technical Manager, Ultrasound, The Johns
Hopkins Hospital, Baltimore, US*

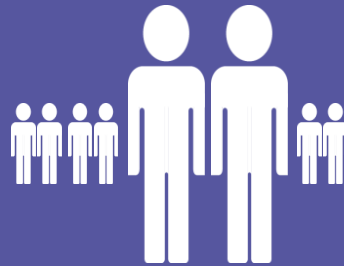


Infection Control – a Major Healthcare Issue



1 in 25

patients will acquire an infection during a hospital stay¹



1.7 Million

people are infected in U.S. hospitals every year¹, more than breast and prostate cancer combined²



HAI's cost the U.S. up to

\$147 Billion

annually in direct and indirect costs³



70%

of HAIs are preventable using existing infection prevention practices⁴

3.2 Million

people are infected in European hospitals every year⁵

Of the 1.7 million infected in the US,

98,987

die each year¹

1. Electronically accessed:
http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf
electronically accessed from the European Centre for Disease Prevention and Control, www.ecdc.eu October 15, 2014

2. 2013 National Vital Statistics, CDC. Deaths: Final Data for 2010

3. Marchetti, A et al., Economic Burden of healthcare-associated infection in US acute care hospitals, *Journal of Medical Economics* 12:1399-404, 2013.

4. Scott, RD. 2009. *Centers for Disease Control and Prevention*. Pgs. 1–13. Electronically accessed from the European Centre for Disease Prevention and Control, www.ecdc.eu October 15, 2014

Growing Awareness of Imaging Procedure HAIs



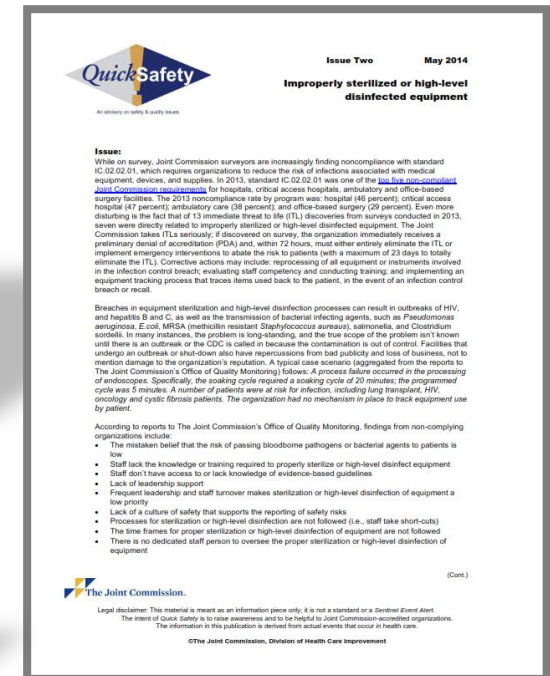
- 0.9 - 9% of barrier sheaths and condoms leak¹
- A meta-analysis has shown that 12.9% of transducers are contaminated with pathogenic bacteria following routine disinfection²
- HPV, a known cause of cervical cancer, has been found on up to 7.5% of transvaginal ultrasound transducers following routine disinfection³
- 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 MRSA⁶

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

trophon EPR Assists Compliance with Guidelines

- TJC Quick Safety 2014 identified Infection Control as one of the top five non-compliant TJC requirements¹
- In addition¹
 - Of 13 immediate threat to life (ITL) discoveries from surveys conducted in 2013, seven were directly related to improperly sterilized or high level disinfected equipment
 - Breaches in equipment sterilization and high level disinfection processes can result in outbreaks of HIV, and hepatitis B and C, as well as the transmission of bacterial infecting agents
- Customers in the US have achieved uniform high compliance and no known rejections from TJC to date



1.The Joint Commission Quick Safety May 2014
The Joint Commission (TJC) accredits more than 20,000 health care organizations and programs in the US

trophon EPR Positioned to Meet Stricter Reprocessing Controls



Guidelines for Cleaning and Preparing External- and Internal-Use Ultrasound Probes Between Patients

Approved 4/2/2014

The purpose of this document is to provide guidance regarding the cleaning and preparation of external and internal ultrasound probes. Some manufacturers use the term "transducers" or "imaging arrays."

Medical instruments fall into different categories with respect to their potential for pathogen transmission. The most critical instruments are those that are intended to penetrate skin or mucous membranes. These require sterilization. Less critical instruments (often called "semicritical" instruments) that simply come into contact with mucous membranes, such as fiber-optic endoscopes, require high-level disinfection rather than sterilization. "Noncritical" devices come into contact with intact skin but not mucous membranes.

External probes that only come into contact with clean, intact skin are considered noncritical devices and require cleaning after every use as described below.

All **internal probes** should be covered with a single-use barrier. If condoms are used as barriers, they should be nonlubricated and nonmedicated. Although internal ultrasound probes are routinely protected by single-use disposable probe covers, leakage rates of 0.9% to 2% for condoms and 8% to 81% for commercial probe covers have been observed in recent studies (Rutala and Weber, 2011). These probes are therefore classified as semicritical devices.

Note: Practitioners should be aware that condoms have been shown to be less prone to leakage than commercial probe covers and have a 6-fold enhanced acceptable quality level (AQL) when compared to standard examination gloves. They have an AQL equal to that of surgical gloves. Users should be aware of latex sensitivity issues and have non-latex-containing barriers available.

For maximum safety, one should therefore perform **high-level disinfection** of the probe between each use and use a probe cover or condom as an aid to keep the probe clean. For the purpose of this document, "internal probes" refer to all vaginal, rectal, and transesophageal probes, as well as intraoperative probes and all probes that are in contact with bodily fluids/blood or have a remote chance to be in contact with dry/cracked skin and body fluids, including blood.

Definitions

All cleaning, disinfection, and sterilization represent a statistical reduction in the number of microbes present on a surface rather than their complete elimination. Meticulous cleaning of the instrument is the key to an initial reduction of the microbial/organic load by at least 99%. This cleaning is followed by a disinfecting procedure to ensure a high degree of protection from infectious disease transmission, even if a disposable barrier covers the instrument during use.

According to the Centers for Disease Control and Prevention (CDC) "Guideline for Disinfection and Sterilization in Healthcare Facilities" (2008):

"Cleaning is the removal of visible soil (eg, organic and inorganic material) from objects and surfaces and normally is accomplished manually or mechanically using water with detergents or enzymatic products. Thorough cleaning is essential before high-level disinfection and sterilization because inorganic and organic material that remains on the surfaces of instruments interfere with the effectiveness of these processes."

"Disinfection describes a process that eliminates many or all pathogenic microorganisms, except bacterial spores."

Low-Level Disinfection—Destruction of most bacteria, some viruses, and some fungi. Low-level disinfection will not necessarily inactivate *Mycobacterium tuberculosis* or bacterial spores.

New American Institute of Ultrasound in Medicine (AIUM) guidelines released in May reinforce importance of high level disinfection



trophon EPR Positioned to Meet Stricter Reprocessing Controls

WHTM 01-06

Welsh Health Technical Memorandum

Decontamination of flexible endoscopes

Part C: Operational management
(Including guidance on non-channelled endoscopes and ultrasound probes)

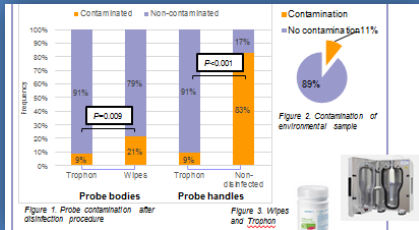


GIG
CYMRU
NHS
WALLES
Partneriaeth
Cydwysaethol
Gomeraethau Ynadu Arbenigol
Shared Services
Partnership
Specialist Solutions Services

New NHS Wales Guidelines position automated, validated decontamination systems as the optimal solution for ultrasound probe decontamination



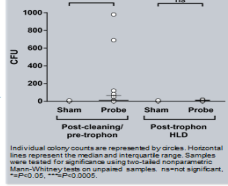
New Studies Continue to Demonstrate Superior Clinical Efficacy of trophon EPR



European study showed trophon EPR to be significantly more effective than manual quaternary ammonium compound wipe disinfection.

Surface transducers

- Surface probes still show substantial contamination following cleaning.
- Following disinfection with trophon EPR, contamination is reduced to background (sham) levels.
- One pre-trophon isolate - *Staphylococcus aureus* can occasionally cause fatal bacteremia.
- Guidelines only recommend cleaning.
- Cleaning alone does not appear to be sufficient to reduce transmission risk, especially relevant for patient colonization.



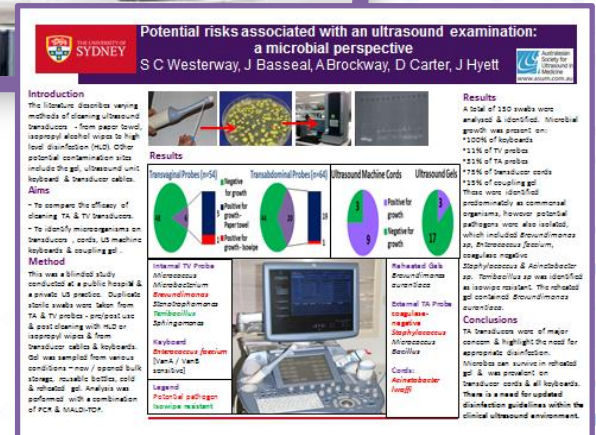
Study at The John Hopkins Hospital in the US showed need for disinfection of intracavity and surface probes (heads and handles)



Independent efficacy testing against a range of microorganisms underway at leading laboratory in US. Includes adenovirus, rotavirus, HIV, human hepatitis B (surrogate), norovirus (surrogate), *Chlamydia trachomatis* and *Neisseria gonorrhea*. So far showing efficacy against all these organisms

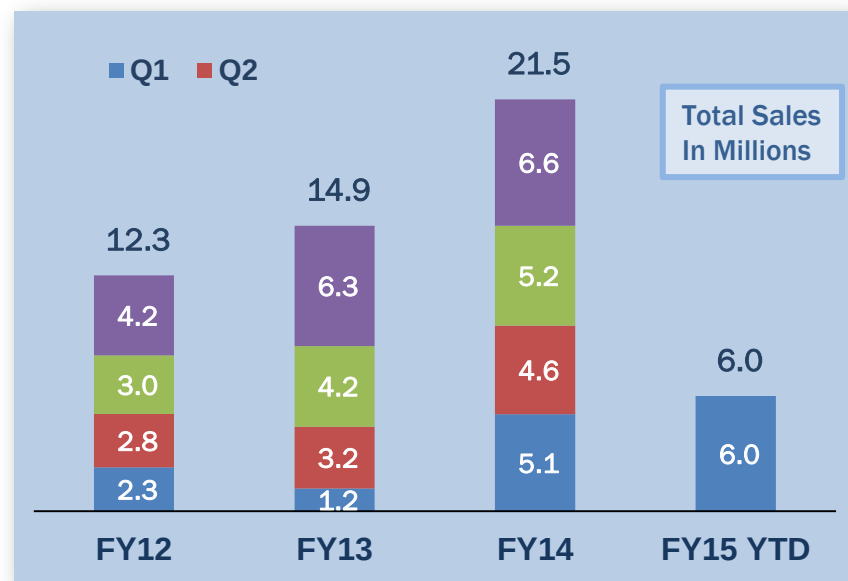
Evidence Emerging for Need to Decontaminate Surface Probes

- The recent John Hopkins study showed bacterial contamination on both intracavity and surface probes (heads and handles) prior to disinfection
 - In all cases, disinfection in the trophon EPR produced a statistically significant reduction in contaminants
 - Study showed there is a need to review the requirements for high level disinfection to reduce transmission risks with surface probes
 - Study presented at ISUOG World Congress in September 2014 showed surface probe contamination was a major concern and highlighted need for appropriate disinfection
- 



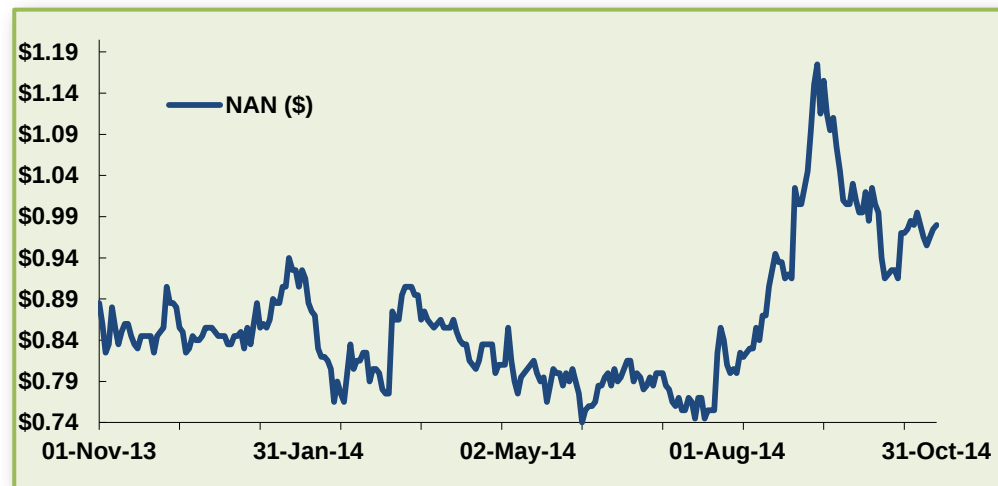
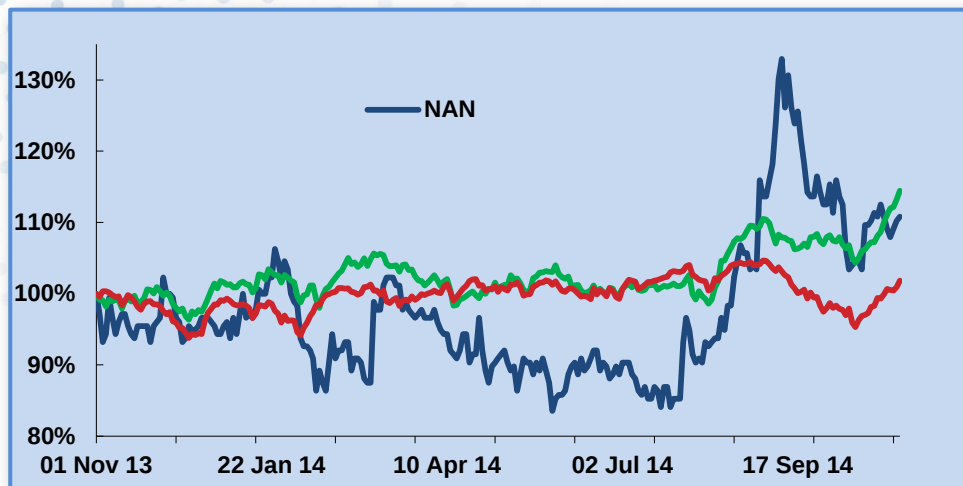
2014: Sales Revenue up 44%

\$ million	H1	H2	FY14	FY13
Operating revenue	9.7	11.8	21.5	14.9
Gross Profit	6.0	7.9	13.9	8.5
%	62%	67%	65%	57%
Other Income	0.8	2.6	3.4	1.5
Operating expenses	(10.3)	(9.8)	(20.1)	(16.4)
EBIT	(3.5)	0.7	(2.8)	(6.4)
Interest (net)	0.1	0.1	0.2	0.7
Pre-tax loss / profit	(3.4)	0.8	(2.6)	(5.7)
Net loss / profit	(3.5)	0.9	(2.6)	(5.8)
Cash Balance			21.2	24.1



Strong Market Capitalisation Growth

12 months (1 Nov '13 – 31 Oct '14)



	31 Oct 14	30 Jun 14	30 Jun 13
Total shares issued (million)	264.33	263.82	261.99
Share price	\$0.975	\$0.79	\$0.61
Market capitalisation (million)	\$258	\$208	\$159
Average daily volume (12 mths)	348,000	349,000	198,000

Growing Media Coverage in 2014

- 59 individual pieces of media coverage in FY14
- Top tier coverage across News Ltd and Fairfax publications
- Strong coverage in healthcare and biotech media



Financial Review on Sunday

- Story covered the rise of high tech manufacturing and Nanosonics part in sector.
- Story also appeared online.
- Story watched by 280,000 viewers.

FINANCIAL REVIEW
SUNDAY

The Australian

- Company profiled by stock watch expert Tim Boreham.
- Rated stock as long term buy.
- Story seen by possible 232,000 readers.

THE AUSTRALIAN 

Smart Investor

- Company profiled by leading small caps writer Trevor Hoey.
- Story also appeared in AFR.
- Story seen by possible 230,000 readers.

smartinvestor
Nanosonics to keep up momentum

Australian Financial Review

- Story profiled CEO Michael Kavanagh and objectives for the Company.
- Story read by a possible 60,000 people.

FINANCIAL REVIEW
Kavanagh tries for Cochlear pt II

Media Coverage Highlights

It's time to get biotechnical

Nanosonics is up 125 per cent since early May as UK orders pick up for its Trophon ultrasound probe disinfector.

Nanosonics named healthcare industry's Company of the Year for 2013

Diagnosis positive for medical advances

Under the Radar Richard Hemming

3 biotech stocks for a healthy portfolio

Ultrasound probes rife with bugs: study

Biotech comes out of the wilderness

proactiveinvestors
AUSTRALIA

 **thewest.com.au** The West Australian

eureka
report



Biotechs lead Uncapped 100 higher

BRENDON LAU | 31 JULY 2013

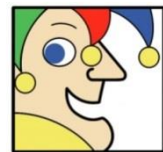
Intelligent Investor Nathan Bell

THE AUSTRALIAN 

The Sun-Herald

THE AGE

Herald Sun



The Motley Fool

NEWS
MEDICAL



Biotech Daily

THE SUNDAY AGE

The Sydney Morning Herald

labonline
.com.au

Life, analytical & environmental science

smartinvestor

B **THE BULL**
.COM.AU

The New Zealand Herald

medical observer

LifeScientist



JOHN BEVERIDGE

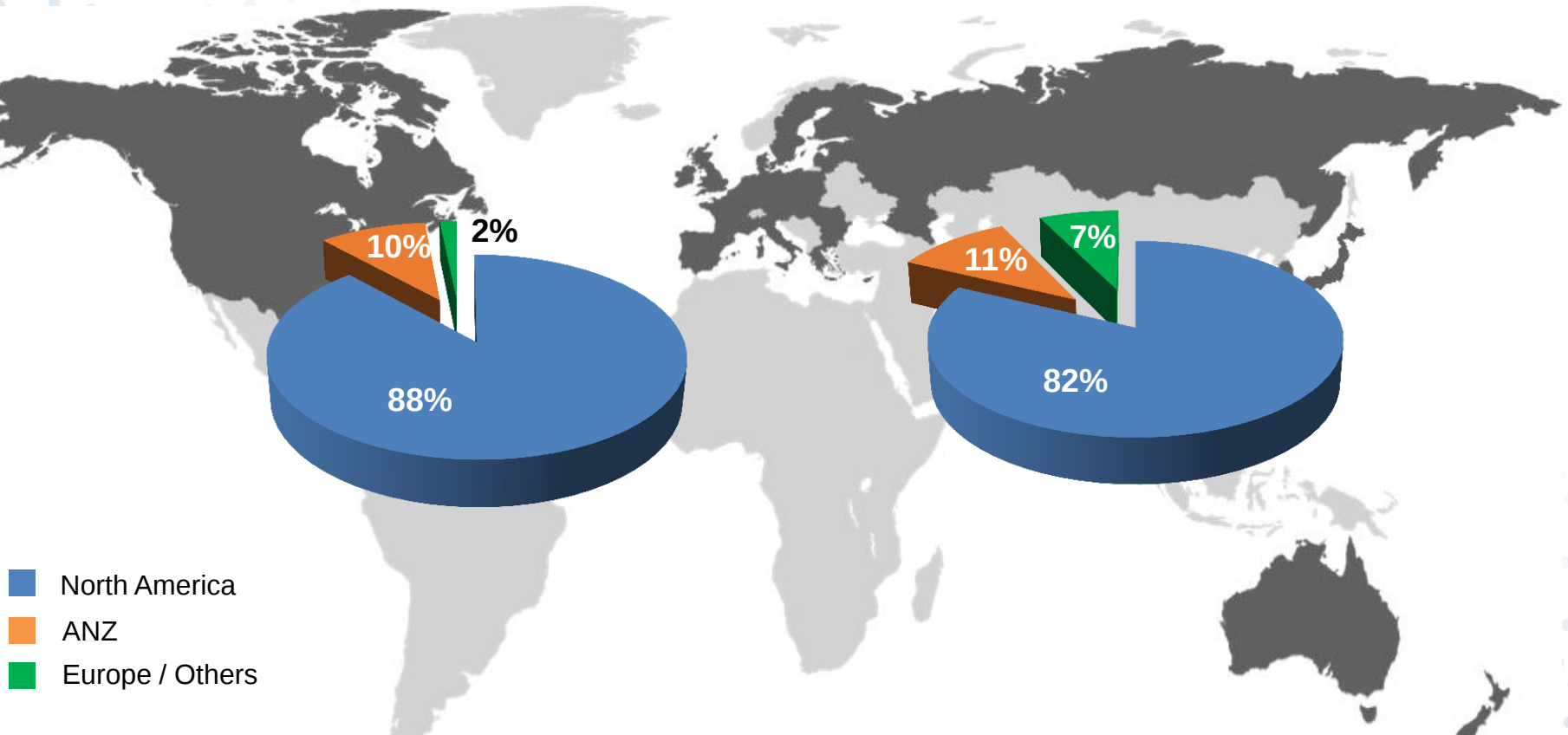
9 NEWS Finance

FINANCIAL REVIEW **The Canberra Times**

2014 Sales – All Regions Contributing

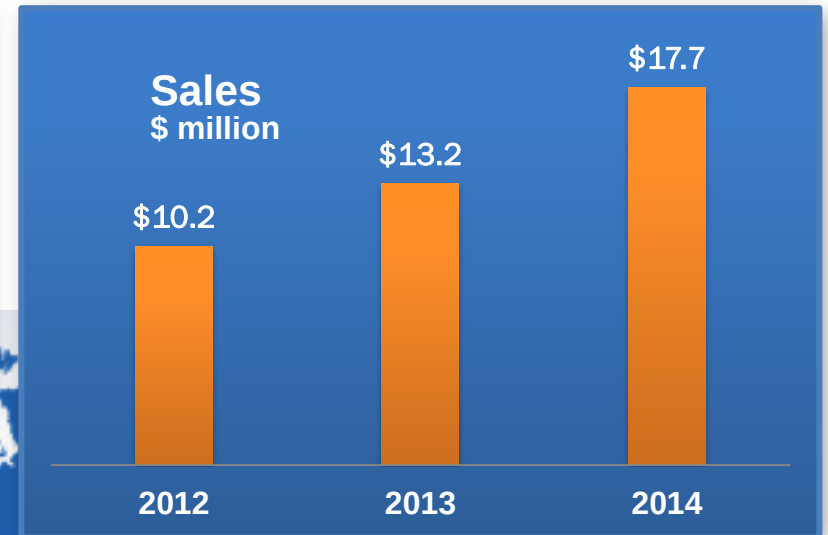
FY13

FY14

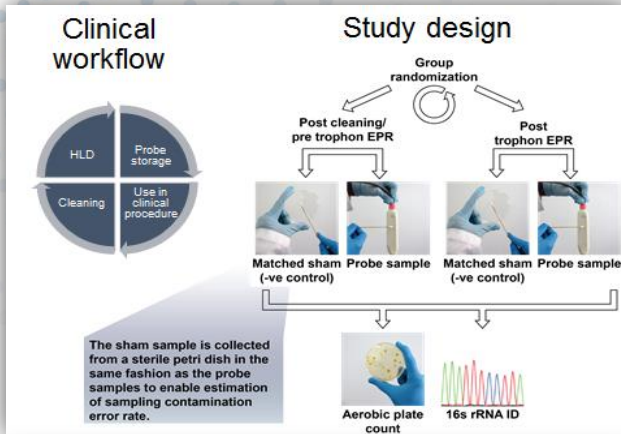


Strong Sales Growth in North America

- ✓ FY14 sales of \$17.7 million up 34% on FY13
- ✓ Trophon now represented in 42 of the top 50 hospitals and in over 1750 sites

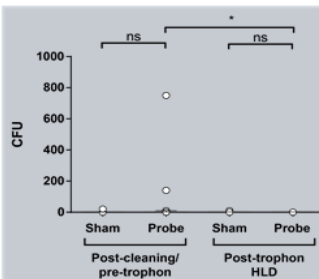


Johns Hopkins Study



Intracavity transducer heads

- Intracavity transducer heads still show contamination despite coverage with a sheath and contamination is still present following cleaning.
- After disinfection with trophon EPR, contamination is reduced to background (sham) levels.
- One pre-trophon isolate - a *Streptococcus* sp is a potential pathogen.



- Guidelines are justified: cleaning and use of probe covers alone do not sufficiently reduce transmission risk. HLD is required

- Confirmed trophon EPR efficacy & Guidelines are justified: cleaning and use of probe covers alone do not sufficiently reduce transmission risk. HLD is required

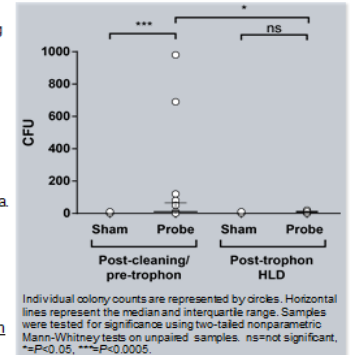
- SURFACE TRANSDUCER EVIDENCE – “Cleaning alone does not appear to be sufficient to reduce transmission risk”

- Handles may present a transmission risk if they are not properly disinfected

- AIUM abstract submitted

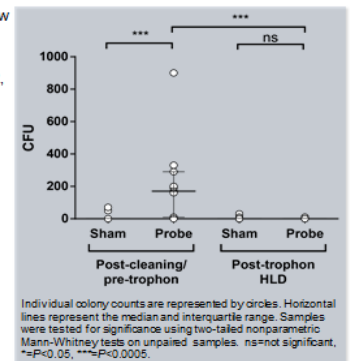
Surface transducers

- Surface probes still show substantial contamination following cleaning.
- Following disinfection with trophon EPR, contamination is reduced to background (sham) levels.
- One pre-trophon isolate - *Dermbacter hominis* can occasionally cause fatal bacteremia.
- Guidelines only recommend cleaning.
- Cleaning alone does not appear to be sufficient to reduce transmission risk, especially relevant for patient colonization.



Intracavity transducer handles

- Intracavity transducer handles show a large amount of contamination.
- After disinfection with trophon EPR, contamination is reduced to background (sham) levels.
- One pre-trophon isolate - *Corynebacterium aurimucosum* has been associated with spontaneous abortion
- Other isolates were of low pathogenicity (predominantly coagulase negative staphylococci)
- Handles may present a transmission risk if they are not properly disinfected.



Strategic Partnership established with the Association for Professionals in Infection Control and Epidemiology (APIC)



Provides consistent visibility through out the year

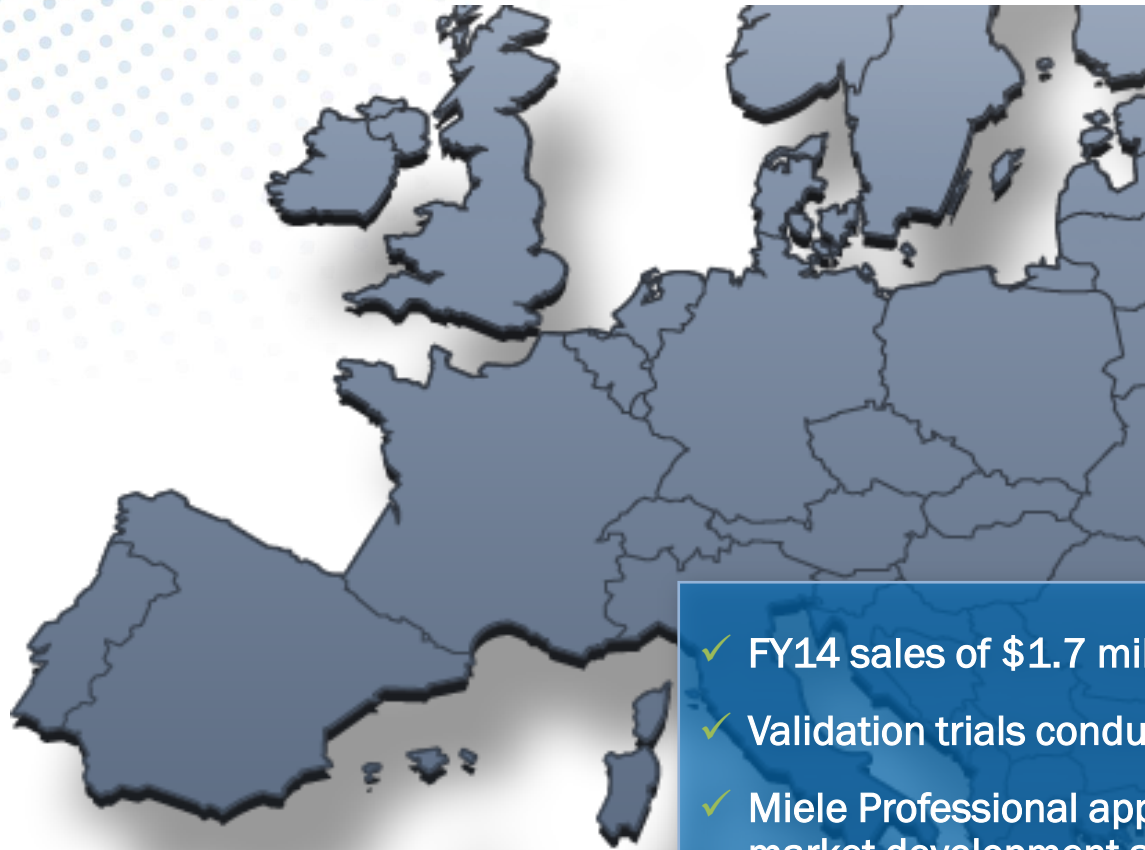
40% growth in APIC membership in last 5 years

More than 15,000 APIC members

Nanosonics US Service and Repair Facility Established



European Highlights



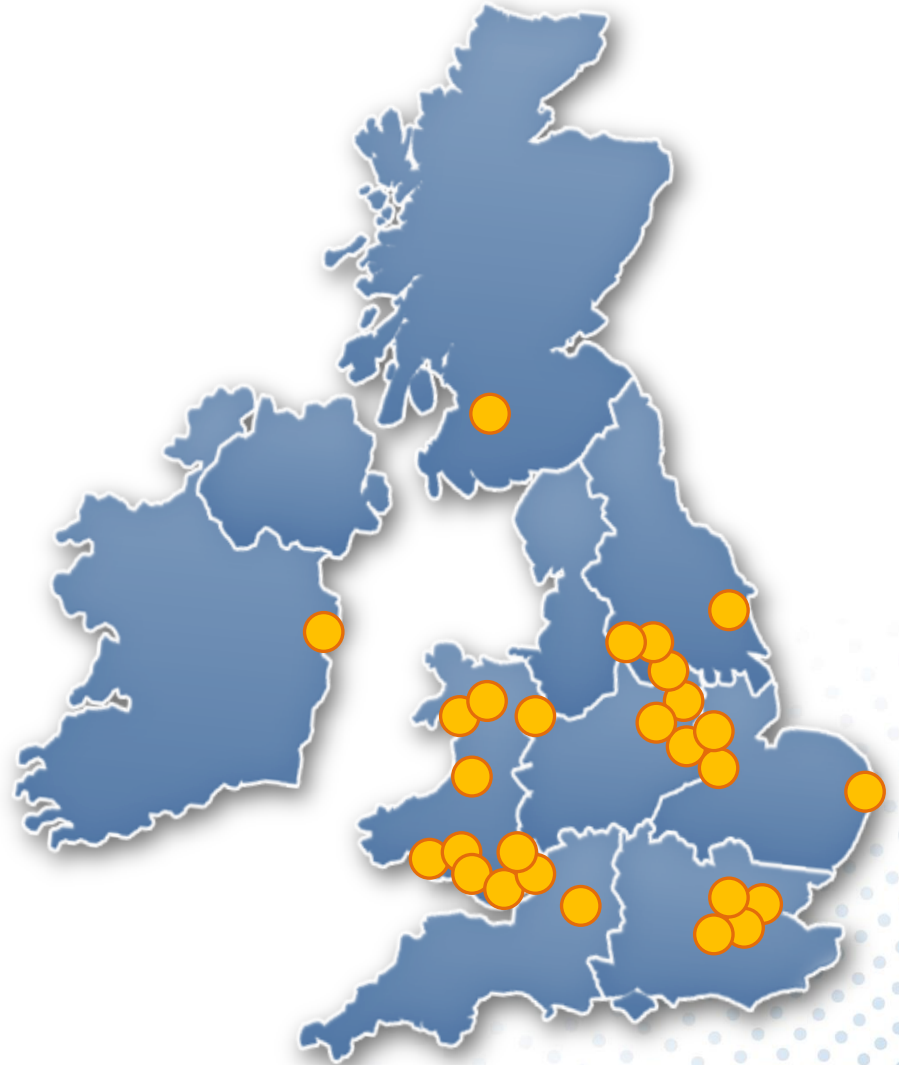
- ✓ FY14 sales of \$1.7 million, greater than five fold increase in FY13
- ✓ Validation trials conducted in UK demonstrating efficacy of trophon.
- ✓ Miele Professional appointed as German distributor in March and market development activities underway
- ✓ UK primary driver of sales in the period with adoption of trophon in a number of key hospitals

European Market Expanding



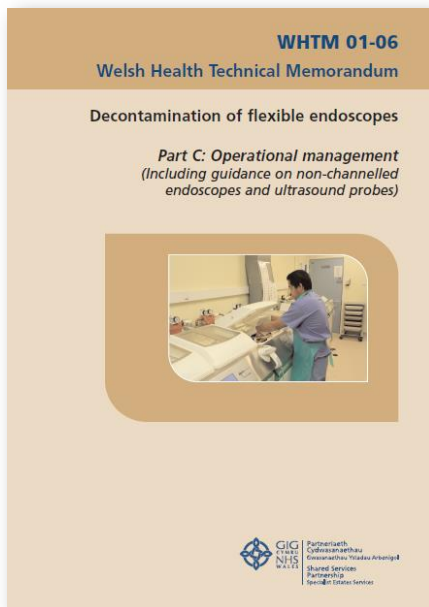
Strong Growth in the UK ... and Ireland

Trophon EPR
now present in
27 hospital
sites throughout
UK and Ireland



New Ultrasound Probe Guidance Published in Wales

- ✓ An automated, validated system positioned as optimal solution
- ✓ The decontamination of transvaginal and transrectal probes should take place in the location they are being used, ie, point of care
- ✓ For quality assurance/traceability purposes, a document system must be in place to ensure contamination/decontamination status of each individual probe



An example of technology designed to provide validated decontamination process of TVUS/TVR probes



Barts Health



NHS Trust

Major trophon EPR Order Secured at Top London Hospital

Momentum Building in Germany



Aufbereitung in der Praxis - 3/2014



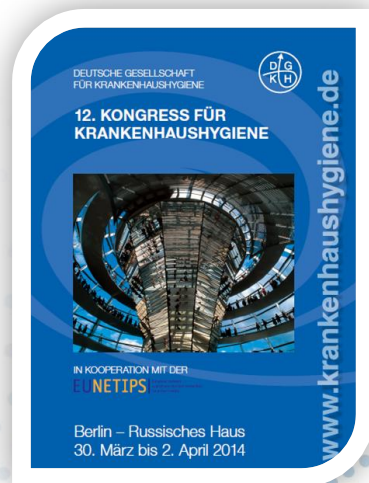
- ✓ Miele distribution partnership signed
- ✓ Congress of German society of hospital hygiene (DGKH, April 2014)
- ✓ Publications – Heeg/Gauer, VAH negative virucidal efficacy of wipes, first 1yr customer experience
- ✓ M&K Award winner 2014
- ✓ Scientific presentations at expert meetings and number of conferences attended
- ✓ University of Münster study
- ✓ Miele European expansion

Automatische, validierte, nicht-toxische High-level-Desinfektion (HLD) von Ultraschallsonden

Ein neuer Ansatz zur Minimierung des Infektionsrisikos

K. Heeg, C. Gauer

Ultraschallsonden sind wichtige Instrumente in der Diagnostik und Therapie. Aufgrund ihrer hohen Frequenz und der damit verbundenen Wärmeentwicklung sind sie besonders anfällig für Infektionen. Eine automatische, validierte, nicht-toxische High-level-Desinfektion (HLD) von Ultraschallsonden ist daher von großer Bedeutung. Ein neuer Ansatz zur Minimierung des Infektionsrisikos ist die Verwendung von Ultraschallsonden mit integrierter HLD-Funktion. Diese Sonden können automatisch und ohne manuelle Intervention desinfiziert werden. Dies reduziert das Infektionsrisiko und spart Zeit und Kosten. Die HLD-Funktion ist in der Praxis leicht zu integrieren und kann in bestehende Desinfektionsprozesse eingebunden werden. Die HLD-Funktion ist eine wichtige Ergänzung zur manuellen Desinfektion und kann das Infektionsrisiko signifikant reduzieren.



Zentralsterilisation 1/14

Market development in France progressing well



- trophon EPR now on a number of Public and Private Hospital Tenders (UGAP, AGEPS, HELPEVIA & CACIC)
- Presented at a number of Key Conferences and Educational Events
- KOL program development
- Local clinical trial plans under development

Continued Growth in Australia and NZ

trophon EPR
now present in
520
sites across
Australia & NZ



Japan Regulatory Approval Granted



Active R&D Program



- Manufacturing Engineering
- Sustaining Engineering
- Next Generation trophon
- New Products

- Number of granted/accepted patents has doubled since April 2013 – from 47 to 95

Active R&D



Chemistries



Accessories



trophon EPR



Future
products

Identifying New Markets

ORIGINAL ARTICLE

Mobile phone technology and hospitalized patients: a cross-sectional study of bacterial colonization, and patient or healthcare worker behaviours

R. R. Brady^a, A. C. Hunt^a, A. V. Vasanathan^a, M. A. Rodrigues^a, C. Graham^a, C. Rae^a, P. Kallma^a, H. M. A. P. Gilo^a

^a Department of Surgery, Western General Hospital, 2 Departments of Laboratory Medicine, Medical Microbiology and Infectious Disease, 3 Epidemiology and Statistics, WGS, WGS, University of Edinburgh Western General Hospital, Edinburgh, UK

Abstract

Healthcare workers' mobile phones provide a reservoir of bacteria known to cause nosocomial infections. Restrictions on the utilization of mobile phones within hospitals have been relaxed; however, utilization of and the risk of cross-contamination are currently unknown. Here, we examine demographics and characteristics by hospital and phone surface microbial contamination. One hundred and two out of 145 (70.3%) questionnaires detailing their opinions and utilization of mobile phones, also provided their mobile phones for comparative bacteriological swabs from their nasal cavities. 92.4% of patients support utilization of mobile phones. 24.5% of patients stated that mobile phones were vital to their inpatient stay. Patients in younger age categories possess a mobile phone both inside and outside hospital ($p < 0.01$) but there was no gender association. E. coli, S. aureus, mobile phone swabs were positive for microbial contamination. Twelve (11.8%) phones grew bacteria. 11.8% of patients' mobile phones were positive for microbial contamination. Seven (6.9%) phones and 32 (21.4%) nasal swabs demonstrated *Staphylococcus aureus* colonization. Phones were associated with concomitant nasal colonization. Patient utilization of mobile phones was popular and common; however, we recommend that patients are educated by clear guidelines and advice regarding phone use, power charging safety, regular cleaning of phones and hand hygiene, and advised not to share phones with other inpatients in order to prevent transmission of bacteria.

Keywords: Bacteria, contamination, infection control, mobile phones, patients

Original Submission: 9 October 2010. **Revised Submission:** 6 February 2011. **Accepted:** 7 February 2011. **Editor:** D. Raut. **Article published online:** 15 February 2011. **Clin Microb Infect** 2011; **17**: E30–E35. **doi:10.1111/j.1469-0699.2011.02493.x**

Corresponding author: R. R. Brady, Department of Surgery, Western General Hospital, Crewe Rd, Edinburgh, Scotland EH4 2XU, UK. E-mail: richard.brady@westerngeneral.com

Introduction

A number of studies have consistently reported that 5–21% of healthcare workers' mobile phones provide a reservoir of bacteria known to cause nosocomial infections [1–7]. Despite this knowledge, there exists a paucity of advice provided to either healthcare workers (HCWs) or inpatients on the use of decontamination of mobile phones in hospitals.

Previously, concerns regarding mobile phone electromagnetic interference (EMI) with the function of medical equipment led to UK National Health Service (NHS) restrictions on their utilization in the clinical arena [8]. Further concerns regarding patient confidentiality, data storage, privacy and noise disruption have also been raised (reviewed in Ref. [2]). However, since January 2009, restrictions on the use of mobile phones by medical staff and patients have been removed in the UK [9]. This was principally due to the absence of supportive evidence to demonstrate risks [10,11], advances in handset technology, the reality that many HCWs and patients were using the devices irrespective of restrictions and patient safety psychological advances in avoiding isolation from contacts [12,13].

doi:10.1111/j.1469-0699.2011.02493.x

ORIGINAL ARTICLE

Contamination of blood pressure cuffs by methicillin-resistant *Staphylococcus aureus* and preventive measures

M. Matsuo^a, S. Oie^b, H. Furukawa^c

^a Department of Surgery, Western General Hospital, 2 Departments of Laboratory Medicine, Medical Microbiology and Infectious Disease, 3 Epidemiology and Statistics, WGS, WGS, University of Edinburgh Western General Hospital, Edinburgh, UK

Received: 20 September 2012/Accepted: 22 April 2013/Published online: 3 May 2013
© The Author(s) 2013. This article is published with open access at Springerlink.com

Abstract

Background: Although blood pressure cuffs are commonly used and shared in medical facilities, their routine disinfection is performed infrequently. **Aim:** We investigated the contamination of blood pressure cuffs by methicillin-resistant *Staphylococcus aureus* (MRSA). **Methods:** The MRSA level on the inner side (the surface in contact with patients' skin) of blood pressure cuffs used in the ward and outpatient clinics of a university hospital (733 beds) was determined using the gauze and swab wiping methods. **Results:** Using the gauze wiping method ($n = 35$), the MRSA contamination rate was 31.4%, and the MRSA contamination level was 1.702 ± 0.996 (0.5–5.2) colony-forming units (cfu)/cuff. No MRSA was detected on blood pressure cuffs after washing ($n = 30$) or wiping with 80% ethanol ($n = 18$). **Conclusions:** Blood pressure cuffs are frequently contaminated by MRSA.

Keywords: Blood pressure cuff · Contamination · Methicillin-resistant *Staphylococcus aureus* · MRSA

Introduction

Although blood pressure cuffs are commonly used and shared in medical facilities, their routine disinfection is performed infrequently. There have been a few studies of

blood pressure cuff contamination. A qualitative survey of blood pressure cuffs in the ward and outpatient clinics of a university hospital (733 beds) was determined using the gauze and swab wiping methods. The MRSA level on the inner side (the surface in contact with patients' skin) of blood pressure cuffs used in the ward and outpatient clinics of a university hospital (733 beds) was determined using the gauze and swab wiping methods. The MRSA level on the inner side (the surface in contact with patients' skin) of blood pressure cuffs used in the ward and outpatient clinics of a university hospital (733 beds) was determined using the gauze and swab wiping methods.

Materials

Quantification

The MRSA

level

was

determined

using

the

gauze

and

swab

wiping

methods.

The

MRSA

level

was

determined

using

the

gauze

and

swab

wiping

methods.

The

MRSA

level

was

determined

using

Contents lists available at ScienceDirect
American Journal of Infection Control
journal homepage: www.ajicjournal.org

Practice forum
iPads, droids, and bugs: Infection prevention for mobile handheld devices at the point of care
Mary Lou Manning PhD, CRNP, CIC^{a,*}, James Davis MSN, CCRN, CIC^b, Erin Sparrow Meng^c,
Kaylene M. Ballard MS, MT (ASCP)^d

^a Human patient education, Jefferson School of Nursing, Philadelphia, PA
^b Patient Safety and Risk Management, JCI, Boston, Plymouth Meeting, PA
^c Health Device Group, JCI, Boston, Plymouth Meeting, PA

© 2013 by the Association for Professionals in Infection Control and Epidemiology, Inc. Published by Elsevier Inc. All rights reserved.

Tablet personal computers are becoming commonplace in homes, schools, and health care facilities. The Apple iPad (Apple Corp., Cupertino, CA), debuted in 2010, is one of several wireless media tablets and represents about 70% of the nearly 100 million tablets worldwide. The device, and others like it, provide a light, portable delivery and visualization medium for stored and online documents, images, and video, as well as a point of care or bedside application software serving a variety of purposes.^{1–3} As technology in this area has evolved, there has also been a sustained growth in the number and diversity of health care-related applications making the tablet a powerful clinical tool.⁴ Numerous electronic equipment, such as cell phones, personal digital assistants (PDAs), and, most recently, wireless media tablets (as in this article now referred to as mobile handheld devices [MHDs]) tend to creep quietly into health care facilities with little notice or attention paid to appropriate use or effective cleaning and disinfection. Infection preventionists (IPs) and hospital epidemiologists must be aware of the expanding use of MHDs by health care professionals as they provide care both directly to and in close proximity to hospitalized patients, thereby potentially creating an ideal vehicle for the transmission of nosocomial pathogens.⁵ Health care providers practicing at the point of acute care have been swift to adopt wireless media technology to improve the practice and delivery of clinical care. In addition to a sophisticated communication device, iPads are being used by intensive care unit

physicians during bedside rounds to engage fellow clinicians, students, and patients in viewing laboratory and imaging results (e.g., radiographs); by surgeons in the operating room to view patient data; and to take, store, and transmit photographic images; by bedside nurses to access pharmaceutical inventories and verify health care literature and to conduct patient and family education; and by health professions faculty and students as an instructional tool to facilitate learning and clinical performance.^{1–3} Ottawa Hospital in Canada recently developed a native iPad version of the electronic health record software and put 3000 iPads directly in the hands of frontline workers revitalizing bedside patient rounds and direct care activities.⁶ The hospital's mobile strategy includes expanding the use of the iPad to more clinicians and working with vendors to add speech recognition. Most recently, the editor of *MedicalApps.com* suggests that the new iPad Mini, because of its lighter weight and functionality, is the electronic "clipboard" for which physicians in the clinical setting have been waiting.⁷ It is imperative that infection prevention and control programs be actively engaged in providing health care workers (HCWs) guidance and education in how to mitigate the risk of bacterial contamination of their MHDs. Programs also have an important role in working together with health care providers to establish and implement organizational MHD policies and procedures. We know of no published wireless tablet contamination studies, guidelines, or protocols. Therefore, the aim of this article is to apply what is known about the contamination of other nonmedical mobile communication devices (e.g., cell phones, PDAs) and to suggest an "offender" or a package of common sense interventions that, when used together, could result in better outcomes (e.g., less bacterial cross-contamination) than when implemented individually.

* Address correspondence to Mary Lou Manning, PhD, CRNP, CIC, Thomas Jefferson University, Jefferson School of Nursing, Philadelphia, PA 19107. E-mail address: maryloumanning@jefferson.edu (M. Manning).
Conflict of interest: None to report.

Journal of Hospital Infection 83 (2013) 266–275
Available online at www.sciencedirect.com
Journal of Hospital Infection
journal homepage: www.elsevierhealth.com/journal/jhin

Review

Laryngoscope blades and handles as sources of cross-infection: an integrative review

A.C. Negri de Sousa^{a,*}, C.E. Levy^b, M.I.P. Freitas^c

^a Operating Theatre, Woman's Hospital Prof. Dr. Aristides Pimenta, Cuiabá, University of Campinas (Unicamp), Campinas, SP, Brazil
^b Clinical Pathology Department, Faculty of Medical Sciences (FCM), University of Campinas (Unicamp), SP, Brazil
^c Faculty of Nursing, University of Campinas (Unicamp), SP, Brazil

ARTICLE INFO

SUMMARY

The lack of standardization of efficient procedures to clean and disinfect laryngoscope blades and handles, which may be important sources of infection during their clinical use, has been reported previously, revealing contamination with blood, body fluids and microorganisms. This paper aimed to evaluate the evidence available in the literature regarding the risk of laryngoscope blades and handles as a source of patient contamination. An integrative review of the literature was performed using databases such as Medline, LILACS, SciELO, Cochrane Library, SCOPUS and PubMed, and keywords in Medical Subject Headings (MeSH). The sample comprised 20 articles published between 1994 and 2012. The studies demonstrated risk of cross-infection and no consensus in current guidelines regarding cleaning and disinfection of laryngoscope blades and handles.

Contamination of Stethoscopes and Physicians' Hands After a Physical Examination

Yves Longin, MD, Alexis Schneider, MD, Clément Tschopp, MD, Geuzelle Renai, MS, Angèle Gayet-Ageron, MD, PhD, Jacques Schrenzel, MD, and Didier Pittet, MD, MS

Abstract

Objectives: To compare the contamination level of physicians' hands and stethoscopes and to explore the risk of cross-transmission of microorganisms through the use of stethoscopes. **Patients and Methods:** We conducted a structured prospective study between January 1, 2009, and May 31, 2009, involving 83 inpatients at a Swiss university teaching hospital. After a standardized physical examination, 4 repetitions of the physicians' gloved or ungloved dominant hand and 2 sections of the stethoscopes were pressed onto selective and nonselective media. 489 surfaces were sampled. Total aerobic colony counts (ACCs) and total methicillin-resistant *Staphylococcus aureus* (MRSA) colony-forming units (CFU) counts were assessed. **Results:** Median total ACCs (interquartile range) for fingertips, thenar eminence, hypotenar eminence, hand dorsum, stethoscope diaphragm, and tube were 467, 31, 34, 8, 89, and 18, respectively. The contamination level of the diaphragm was lower than the contamination level of the fingertips ($P < 0.01$) but higher than the contamination level of the thenar eminence ($P = 0.04$). The MRSA contamination level of the diaphragm was higher than the MRSA contamination level of the thenar eminence ($P < 0.001$). The correlation analysis for both total ACCs and MRSA CFU counts revealed that the contamination level of the diaphragm was associated with the contamination level of the fingertips (Spearman's rank correlation coefficient, $\rho = 0.80$, $P < 0.01$) and $\rho = 0.76$, $P < 0.01$, respectively). Similarly, the contamination level of the stethoscope tube increased with the increase in the contamination level of the fingertips for both total ACCs and MRSA CFU counts ($\rho = 0.56$, $P < 0.01$ and $\rho = 0.59$, $P < 0.01$, respectively). **Conclusion:** These results suggest that the contamination level of the stethoscope is substantial after a single physical examination and comparable to the contamination of parts of the physicians' dominant hand.

The patient-to-patient transmission of microorganisms is a major threat to hospitalized patients and causes significant morbidity and mortality. The present evidence indicates that health care workers' hands are the main route of cross-contamination.^{1–3} Small medical equipment, such as stethoscopes, may also contribute to the dissemination of microorganisms, but the evidence supporting this hypothesis is less robust and their role in microorganism propagation is poorly understood. Similar to any piece of medical equipment, stethoscopes have the theoretical capacity to be vectors of pathogens through a multipoint process. First, stethoscopes must acquire microorganisms after contact with a source patient. Second, these organisms must then survive on the object for at least several minutes and be transferred to the skin of a second patient during subsequent use. Numerous factors may affect the risk of transmission at each of these steps,^{4–7} and assessing transmission is better achieved by studying 1 step at a time. Many factors must be considered when conducting such studies. For example, as no piece of nonmedical equipment used on patients' hands is meant to be sterile, most objects in the health care environment will yield microorganisms when sampled. However, the clinical significance of detecting low levels of contamination is uncertain. One way to solve this difficulty and better understand the relative contribution of stethoscopes in the transmission of microorganisms is to place their levels of contamination into perspective with those of a universally recognized vector of contamination, that is, the physicians' own hands. If the number of bacteria recovered from stethoscopes is much lower

Business Outlook – Positioned for Continued Growth

- **Market fundamentals continue to strengthen**
 - Increasing awareness of imaging related healthcare acquired infections
 - Supporting Guidelines for automated HLD solutions
 - Excellent clinical data and customer value propositions
- **Continuing to Expand within existing markets**
 - Growth demonstrated in the US, Europe, Australia and NZ with opportunity to expand facilities and sites within facilities
- **Continuing to Expand Regional Operations**
 - Entering five new European Markets
 - Entering Korea
 - Approval received and preparations underway for Japanese launch
- **Investment in R&D**
 - Opportunities for expansion of portfolio under investigation and development



Thank You