



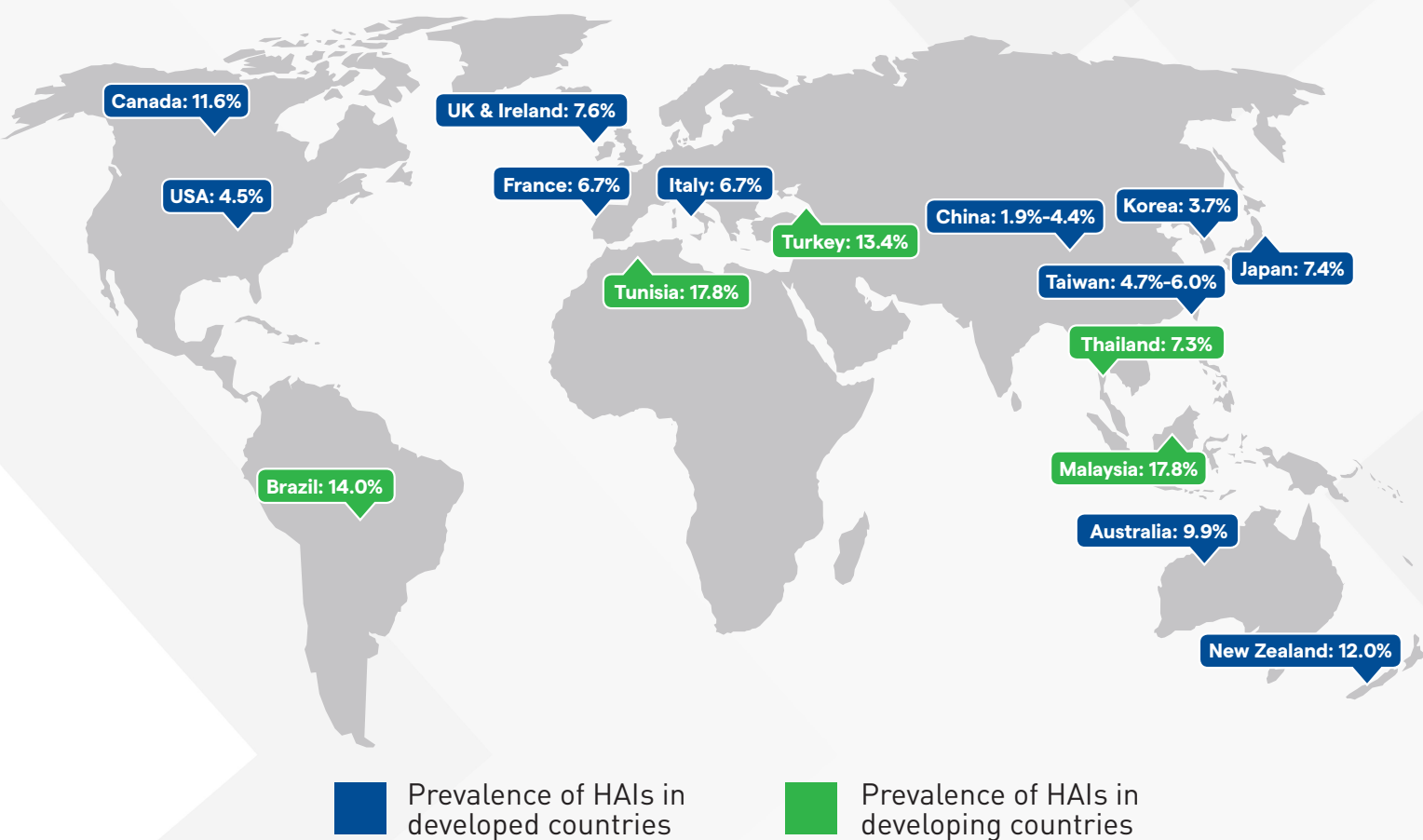
Baxter
Welch Allyn
Flexiport

**Fighting
Hospital-Associated
Infections [HAIs] with
Disposable Blood
Pressure Cuffs**

A collection of clinical data points

Worldwide Burden of HAIs

Hospital-acquired infections, or healthcare-associated infections, (HAIs) are nosocomial infections that are typically not present or incubating at the time of admission.¹



High Prevalence

- On any given day, about one in 31 hospital patients has at least one healthcare associated infection.²
- Across Southeast Asia, the pooled prevalence of overall HAIs was 9.0%, while the pooled incidence density was 20 cases per 1000 intensive care unit-days.³
- An estimated 200,000 HAIs occur annually in Australia, of which 50% are preventable.⁴

High Mortality

- Mortality in patients with HAIs in Southeast Asian countries ranged from 7% to 46%.³
- The risk of acquiring HAI is significantly higher in intensive care units, with approximately 30% of patients affected by at least one episode of HAI with substantial associated morbidity and mortality.⁵

High Cost

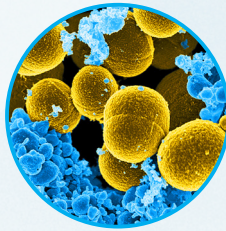
- Two million hospital bed days are lost to HAI annually in Australia, with an estimated value of more than AUD\$1 billion.⁴
- In China, median estimates of total treatment cost and medication cost were ¥24,881.37 and ¥9,438.46 higher for an inpatient with HAI compared with an inpatient without infection.⁶
- HAIs lengthen the duration of hospitalisation by 5 to 21 days.^{3,6}

Common microorganisms contributing to HAIs

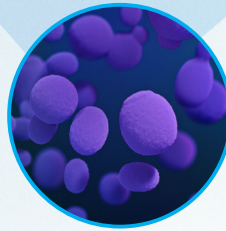
Several commonly used equipment and objects in intensive care units carry bacteria which, in most cases, show the same antibiotic susceptibility profiles of those isolated from patients.⁷



E. coli



Staph. aureus



Candida spp



Klebsiella spp.



Ps. aeruginosa



Blood Pressure Cuffs



Stethoscopes



Clinicians and researchers should be aware of the risk of cross contamination of pathogens from inanimate surfaces, [and] adopt appropriate infection control measures.⁷

MRSA – methicillin resistant *Staphylococcus aureus*

31.4%

of blood pressure cuffs at a Japanese hospital were contaminated with MRSA⁸

Contamination of Blood Pressure Cuffs by MRSA using the Swab and Gauze Wiping Methods ⁸		
Detection Method	MRSA contamination rate (%) [*]	Mean \pm SD (range) of MRSA contamination level (cfu/cuff) [†]
Swab Wiping	17.2 (10/58)	1.9 \pm 8.8 (0-65)
Gauze Wiping	31.4 (11/35)	1,702.6 \pm 9,996.1 (0-58,320)

cfu, colony forming units; SD, standard deviation

^{*}no. of samples contaminated/no. of samples examined

[†]number of cfu per cuff, measured on the inside of the cuff

Methods for reducing contamination risks of blood pressure cuffs include:⁸

- Using single patient, multi-use disposable blood pressure cuffs
- Wiping blood pressure cuffs with alcohol between uses
- Washing cuffs at regular intervals (weekly or monthly)



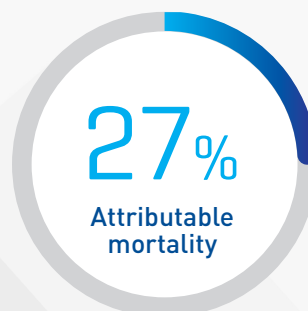
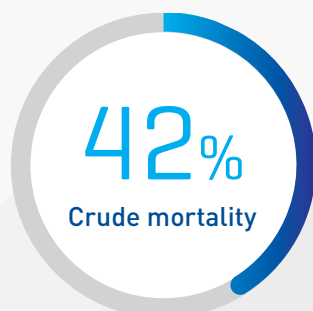
Candida auris – an emerging HAI

The devastating impact of invasive infections caused by multi-drug resistant yeasts such as *C. auris* should not be underestimated for both for individual patients, and for medical services in hospitals where these micro-organisms are endemic.⁹



C. auris colonisation of patients has been reported to occur in up to 80% of critically ill patients after one week of intensive care.⁹

Overall mortality rates associated with *Candida* species⁹



Bacterial Colonisation on Blood Pressure Cuffs

One study showed significant levels of bacterial colonisation in the blood pressure cuffs. The most highly contaminated cuffs were observed in Casualty, Medicine, OBGYN, Surgery and Medical Intensive Care Units.¹⁰

Type of bacteria isolated (34/50)	Before decontamination		After
	Number	Frequency (%)	Number
MRSA	10	20	0
CNS	12	24	0
Klebsiella Pneumoniae (non-ESBL)	5(>300cfu/25cm ²)	10	5 (10cfu/plate)
Klebsiella Pneumoniae (ESBL producer)	7(>300cfu/25cm ²)	14	7 (8-10cfu/plate)
TOTAL	34	68	

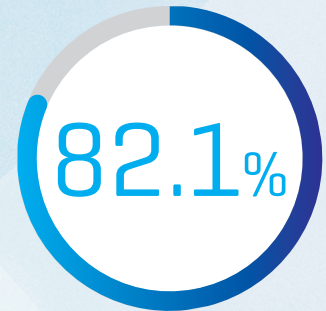
CNS, coagulase-negative staphylococci; EBSL, extended spectrum beta-lactamase

Disinfection is by far the most common and cost-effective method to reduce the risk of contamination.¹⁰

However, these steps do not completely eliminate the risks. *Klebsiella pneumonia* was still present on blood pressure cuffs after being disinfected with 70% isopropyl alcohol.¹⁰



The high rate of blood pressure cuff contamination [82.1%] is not unexpected, as no other piece of hospital equipment was used more frequently without adequate disinfection.¹¹



Bacterial Isolates	Thermometers (N=58)	Blood pressure cuffs (N=28)
	No. (%) of Isolates	No. (%) of Isolates
<i>Staphylococcus aureus</i>	31 (86.1)	17 (73.9)
<i>Escherichia coli</i>	-	2 (8.7)
<i>Pseudomonas aeruginosa</i>	3 (8.3)	1 (4.4)
<i>Enterococcus</i>	2(5.6)	3 (13.0)
TOTAL	36 (62.1)	23 (82.1)



Guidelines for Prevention and Control of Infection

Recommendation: “Use patient-dedicated equipment or single-use non-critical patient-care equipment . . .”¹²

Disposable blood pressure cuffs were one recommended example of single-use equipment

Every year in Australia, around 165,000 HAIs are reported in acute healthcare facilities.¹²

- HAIs represent the most common complication affecting patients in hospital ¹²
- HAIs can occur in any healthcare facility or office, and affect staff as well as patients ¹²



There is clear evidence that certain infectious agents are transmitted by direct or indirect contact during patient care... Indirect transmission involves transfer of an infectious agent through a contaminated intermediate object or person...¹²

Standardising to a Single-Patient-Use Model



Enhancing Patient Safety:

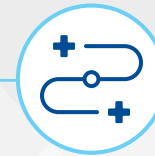
A workflow where each patient gets a new disposable blood pressure cuff is a simple way to reduce contamination risks that lead to HAIs.

One study showed bacteria that could lead to HAIs were still present after reprocessing and reusing blood pressure cuffs.¹³



Improve Your Bottom line:

Other cuff standardisation methods typically involve a confusing array of cuff configurations, Y-tubes, clamps and connectors. This translates into large inventory levels. Welch Allyn FlexiPort Blood Pressure Cuff standardisation reduces excess inventory costs by enabling virtually any device to work with FlexiPort Blood Pressure Cuffs.



Streamline Workflow:

Welch Allyn FlexiPort Blood Pressure Cuffs not only streamline workflows by making it easier for caregivers to find and change the right cuff, but simplify the cuff inventory, thereby reducing part items by up to 90%.



Welch Allyn Flexiport Disposable Cuffs

The FlexiPort Soft and Vinyl, Trimline Soft and Vinyl and Neonatal Soft and Vinyl disposable cuffs can be dedicated to a single patient to reduce the risk of cross-contamination.

Welch Allyn FlexiPort Blood Pressure Cuffs

The secret to true cuff standardisation is our single-point FlexiPort connection.

The FlexiPort connection enables Welch Allyn FlexiPort Blood Pressure Cuffs to be used with virtually any blood pressure monitoring device, thus eliminating the hassles that come with traditional cuff tubes and connectors.

Key Takeaways



HAIs represent one of the most frequent and challenging complications of healthcare delivery worldwide¹⁴



Blood pressure cuffs are one of the most frequently used pieces of healthcare equipment, and these are often not disinfected between patients⁹



Guideline-recommended methods for reducing cross-contamination include the use of disposable blood pressure cuffs¹²

**Welch Allyn FlexiPort
Blood Pressure
Cuffs are specifically
designed to improve
patient care, by
helping control
infection spread within
healthcare facilities.**



References:

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