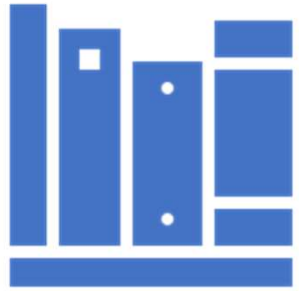


Barley Chironda RPN, MSc

IDWeek 2025 Highlights

Disclosure

I am an employee of Clorox Healthcare.

The slides and material provided do not represent Clorox Healthcare at all.

Science That Moves Prevention Forward

Translating Discovery into Practice

From Bedside to Planet — Where Science, Data, and Humanity Converge.

7,000+ Attendees • 2,300 Abstracts • 300+ Sessions

Methodology

Themes

Artificial Intelligence	Sustainability	Emerging pathogens	One Health
Diagnostic Stewardship	Surveillance	High Tech Outbreaks	Disinfection

Major infectious diseases outbreaks in 2025

Avian influenza	COVID-19	Marburg virus
Chikungunya	Ebola Virus	Mpox
Dengue	Lassa Fever	Oropouche virus
Diphtheria	Malaria	Rift Valley Fever
Cholera	Measles	Yellow Fever

Krutika Kuppalli, MD FIDSA

@KrutikaKuppalli

Preparedness & Biocontainment

Lassa Fever Case: 180 contacts, zero infections.

Multistate collaboration (Iowa–Nebraska–CDC).

Every biocontainment story starts in the middle of the night.

Early detection + coordination = success.

Takeaways – lessons for a connected world

Common Drivers

- Environmental disruption, climate variability and urbanization fuel spillover and vector expansion

Pathogen Diversity - same ecological pressures

- **Africa:** Ebola, Lassa, mpox, Rift Valley Fever
- **Americas:** Dengue, Chikungunya, Oropouche

Health System Gaps

- Fragile infrastructure and limited diagnostics delay detection and response

Climate & Mobility

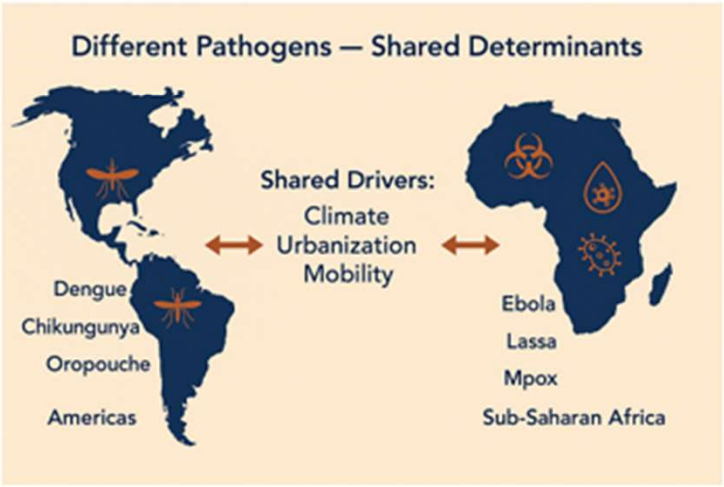
- Heat, flooding and human migration accelerate disease spread

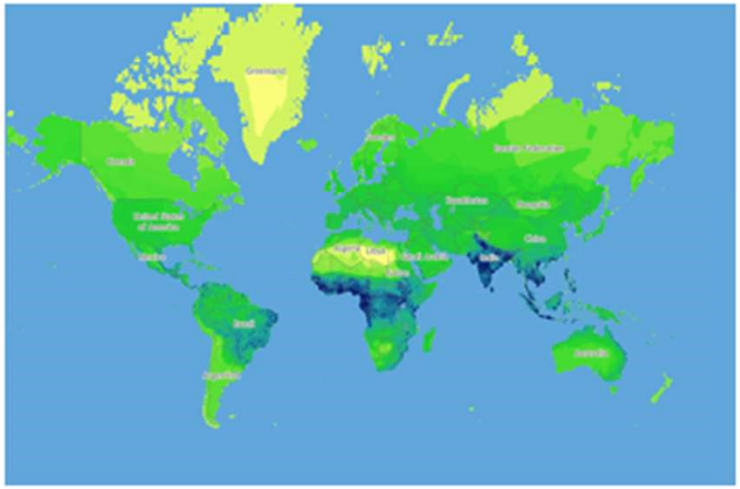
Interconnected Risks

- Local outbreaks become global threats

Progress & Promise

- Improved surveillance, genomics and regional coordination show growing capacity





Krutika Kuppalli, MD FIDSA

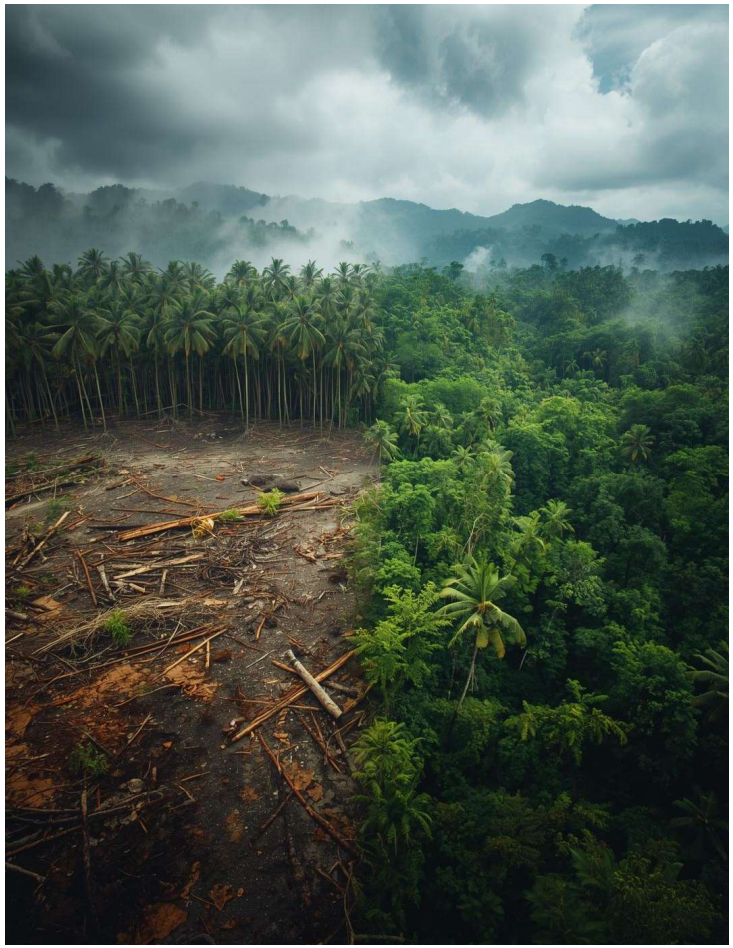
Global Health & One Health

- Outbreaks: Lassa, Dengue, Ebola, Oropouche, Mpox.
- Climate drivers: migration, urbanization, fragile systems.
- Containment anywhere = preparedness everywhere.
- RESPTC Case: Lassa contact tracing (180 people) → zero transmissions.

Global Pathogens & Climate

Outbreaks Linked to Climate

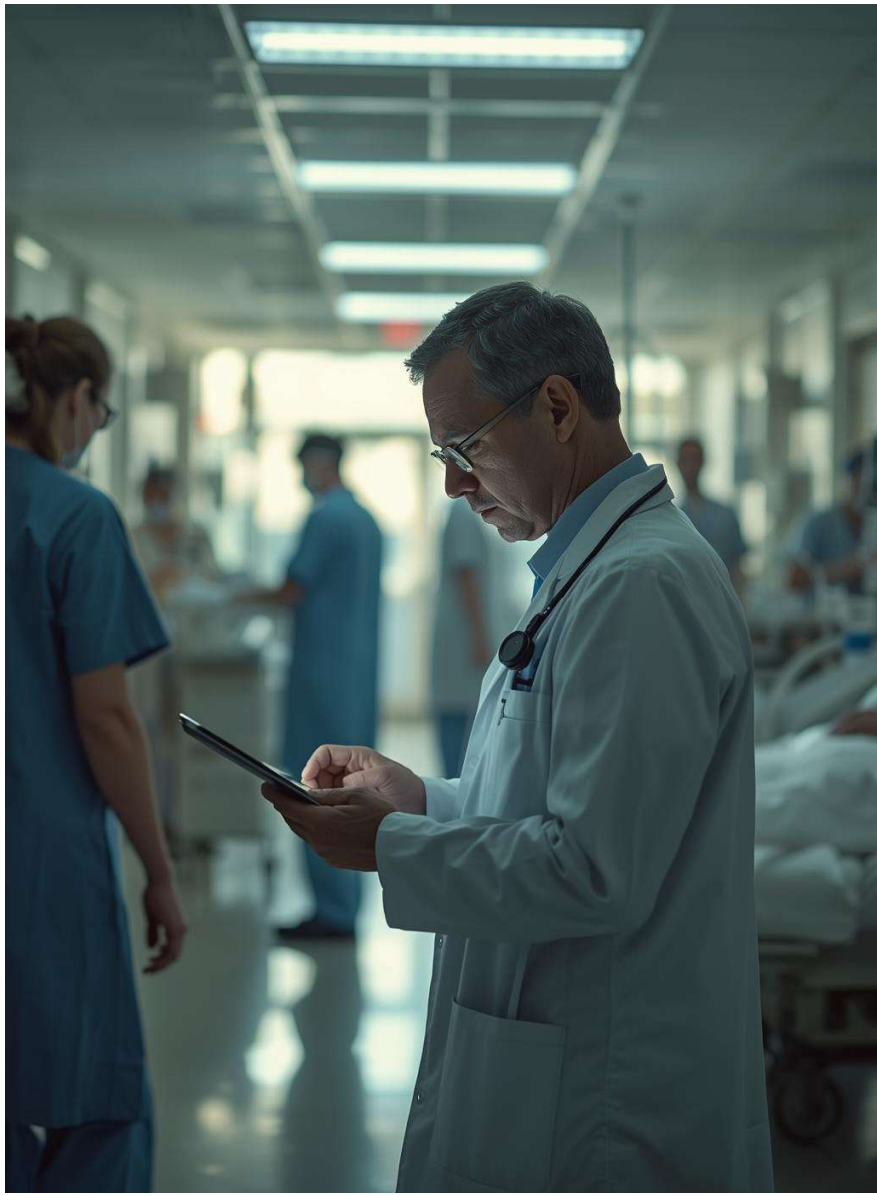
The **growing impact** of climate change on global health includes migration patterns and deforestation, which are critical drivers of infectious disease outbreaks in 2025.



AI in Infection Prevention

Transforming data into actionable insights

Artificial Intelligence is revolutionizing infection prevention by providing **95% sensitivity in LLMs**, improving MRSA and C. diff modeling, and addressing the challenges of managing over 120 eCQMs effectively.



AI & Predictive Epidemiology

AI-enhanced surveillance models reached >90% accuracy for HAIs.

Machine learning predicts MRSA and VRE spread via staff–room contact maps.

“Training ≠ Validation”: AI models require external FDA verification.

Wastewater + EHR data now predict outbreaks days before cases appear.

Vaccines & Prevention Science

Rebuilding adult vaccine trust through transparency.

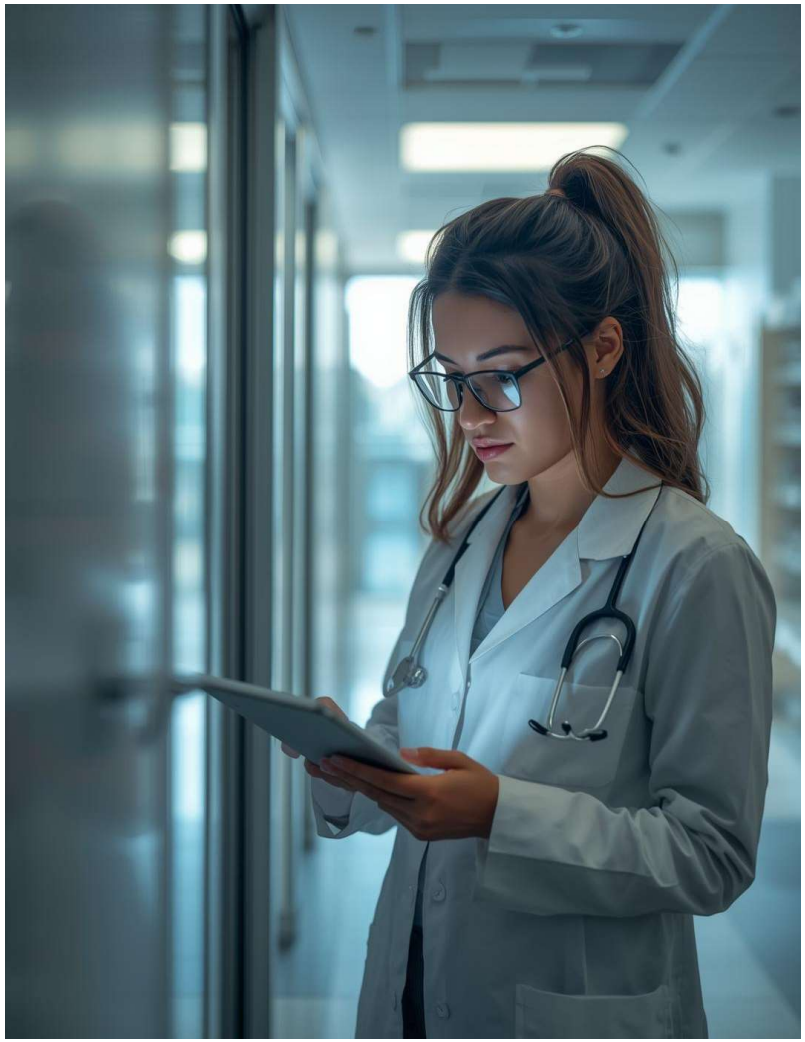
Presumptive language increases uptake.

Focus: life-course immunization.

Predictive Stewardship

Proactive AMR Management

Leveraging machine learning, predictive stewardship enhances antimicrobial resistance management by linking pharmacy data to patient outcomes, enabling prevention before issues arise and optimizing treatment strategies.



Future of Prevention: Predictive Ecosystems 2030

Data-driven, people-centered infection prevention.

Wastewater + EHR + AI = foresight.

Climate-aware, equitable, sustainable prevention networks.

Collaboration is the new sterilant.

Pitching Antimicrobial Stewardship to the C-Suite

George E. Nelson, MD
Division of Infectious Diseases
Vanderbilt University Medical Center

Frame the Proposal

- **Any similar, successful proposals to follow?**
- **What does the C-suite respond to?**
  - Peer pressure
  - Patient safety event
  - Regulations
  - Something else?
- **Respond both to request at hand as well as trajectory**
  - Will have different needs at different program stages
  - Tools @ PMID: 37735012

Slide – Description	Business Focus
1 – Introduction	Company name, logo, tagline
2 – Problem	Define issue product/service solves
3 – Solution	How product solves problem, pain points, provides value
4 – Market Opportunity	Size, growth potential, market trends/demand
5 – Business Model	Revenue model, partnerships, distribution, pricing

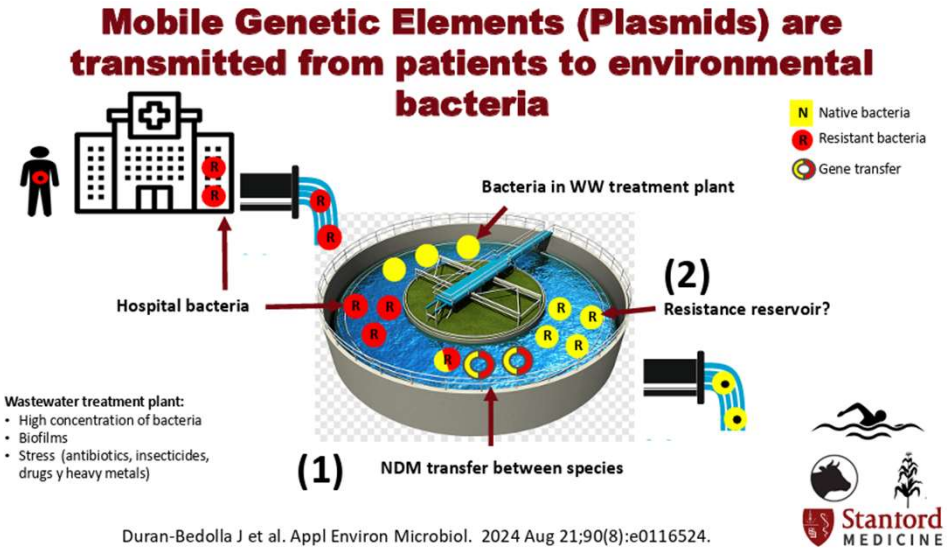
Slide – Description	Business Focus
6 – Competitive Analysis	Main competitors, SWOT, your unique advantage
7 – Go-to-Market	Marketing, sales strategy
8 – Team	Key members, achievements, expertise
9 – Results/Traction	Revenue, expenses, profit, projections, and milestones
10 – Capital	How much? For what?
Extra – Info only	Formalized prospectus, company materials, etc.

Nelson GE et al. Principles and Practice of Antimicrobial Stewardship Program Resource Allocation. Infect Dis Clin North Am. 2023 Dec;37(4):683-714 .

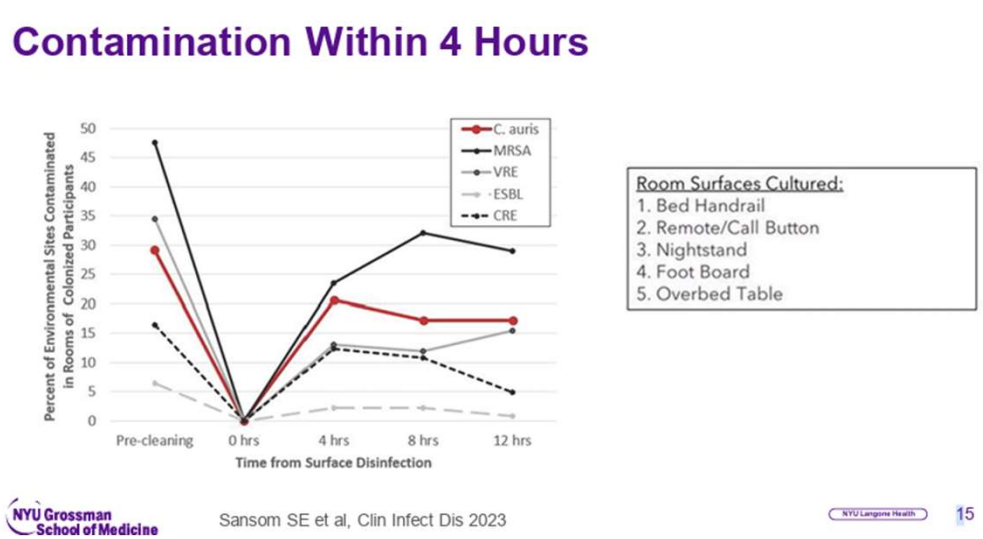
Human Factors & Leadership Culture

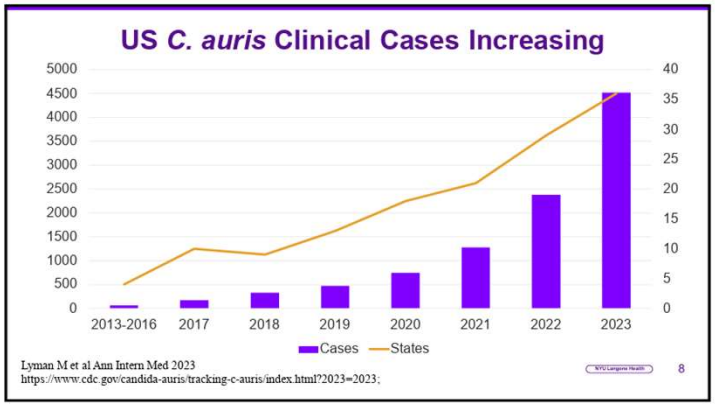
- Take 5 Hand Hygiene: positive reinforcement (premium parking wins!).
- R.I.S.E. ID: addressing burnout through high-value work.
- Project Firstline: social media boosts HAI awareness.
- Culture of prevention starts with people.

Infection Control Considerations for Resistant and Emerging Pathogens



Duran-Bedolla J et al. Appl Environ Microbiol. 2024 Aug 21;90(8):e0116524.





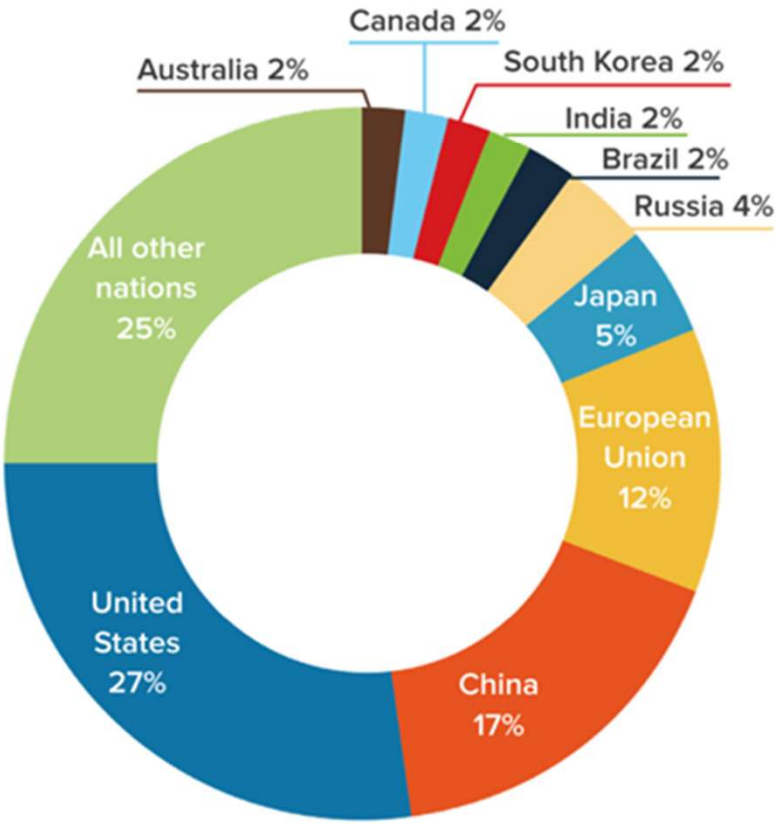
Speaker

Jorge Salinas, MD
Presenter
Stanford University

Speaker

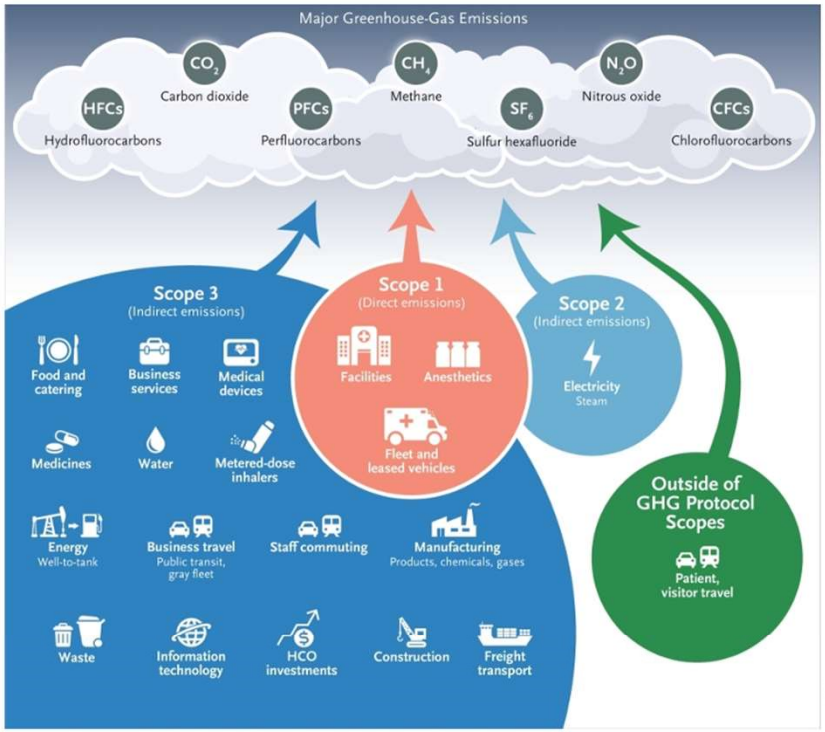
Dana Mazo, MD, MSc
Presenter
NYU Langone Health

Healthcare industry's emissions (by country)



Source: *Healthcare without Harm*

Sustainability



Singh, NEJM 2022

W	Waste
E	Energy
A	Anesthetic gasses, Agriculture/Food
C	Chemicals, Pharmaceuticals, and Medical supplies
T	Transportation

Providence

Speaker

Mahmood Bhutta, FRCS DPhil
Presenter
Brighton & Sussex Medical School (UK)

Speaker

Shira Abeles, MD
Presenter
University of California, San Diego

Speaker

Preeti Jaggi, MD
Presenter
Emory University

Sustainability

1 cataract operation in US

- Infection rate 0.21% (Zafar etal Opthalmology 2023)

93 cataract operations in India

- Infection rate 0.02-0.15% Ravindran et al. J Cataract Refract Surg 2009 Lalitha etal Ind J of Opthalmology 2017 Haripiya et al. J Cataract Rfract Surg 2019

Images Care of Barbara Erny, MD, EyeSustain.org

UC San Diego Health

IV to po conversion

Speaker

Mahmood Bhutta, FRCS DPhil
Presenter
Brighton & Sussex Medical School (UK)

Speaker

Shira Abeles, MD
Presenter
University of California, San Diego

Speaker

Preeti Jaggi, MD
Presenter
Emory University

- **Patient Safety:** Fewer IV infections & reduced discomfort
- **Efficiency Gains: 7,908 nursing hours** saved yearly
- **Environmental Impact: 35 tonnes CO_2e saved annually**
- **Cost Savings:** 38% reduction in metronidazole expenses

5 days IV metronidazole

78.9 miles in an average sized car – Glasgow to Dundee

5 days oral metronidazole

0.4 miles in an average sized car – Glasgow Central Station to George Square

CENTRE *for* SUSTAINABLE HEALTHCARE

inspire • empower • transform

Sustainability & Climate-Smart IPC

Guardians of the Green Galaxy: Plastics from hospitals found on beaches.

Can Sustainability Sustain ID?: expand stewardship to time & waste.

One Health = environmental + clinical stewardship.

Emerging Infectious Diseases

ICHE 2024; 45:1373+

Highly pathogenic avian influenza: considerations for healthcare settings

Lauren Epstein MD, MS[1,2] and Shira Doron MD, MS[3]

Table 2. Highly Pathogenic Avian Influenza (HPAI) summary: key considerations for healthcare facilities

HPAI epidemiologic landscape	**E.g., virologic surveillance, outpt ILI, hospitalizations**
• CDC uses a variety of data sources to track influenza activity and severity, determine what strains of the virus are circulating, and detect the emergence of human cases of HPAI or other strains new to humans. Healthcare facilities can access this information, including data specific to their geographic region, on FluView and FluView Interactive. • Healthcare facilities should use the publicly available information to establish systems to monitor national, regional, and local influenza rates.	
Respiratory Hygiene, Screening and Testing	**Standard precautions; balance added screening with current activity**
• Healthcare facilities should make use of messaging and/or signage educating patients and visitors regarding basic strategies to minimize transmission of respiratory viruses. • To date, subtyping of influenza A to confirm HPAI is performed exclusively through state and regional public health laboratories or CDC, which may impede turnaround time. • At this time, it is not resource-efficient to universally screen every patient with respiratory symptoms about a relevant exposure. • Positive influenza A specimens obtained from patients with compatible animal or animal product exposure should be subtyped.	
HPAI Transmission and Approaches to Isolation	**Containment strategy**
• Given the potential for genetic mutation conferring enhanced human-to-human transmission, it is reasonable to aim for containment of HPAI as opposed to mitigation in healthcare settings. • Healthcare facilities should clearly communicate goals and rationale for containment vs. mitigation strategies with healthcare personnel, patients, and visitors, and also prepare for strategies to evolve as more information becomes available and the epidemiology is better understood.	
Prevention	**Prepare for rapid scale up**
• Clinicians should counsel patients about how to avoid HPAI exposure in the community. • Exposed individuals should receive prophylaxis with oseltamivir. • Early preparation for influenza vaccination sites will minimize the time required to vaccinate people if it becomes necessary.	
Communication	**Learn from COVID-19 experience**
• Healthcare epidemiologists and infection preventionists, who serve as trusted sources of information, should play a prominent role in the healthcare facility's response to HPAI. • The rationale for specific policies and procedures should be clearly conveyed, along with changes that are anticipated as more information becomes available and the outbreak evolves. • Effective communication should carefully balance the need to inform the public while minimizing the risk of causing alarm or panic.	

Special Pathogens

National Special Pathogen System: The Tiered System of Care

NSPS

Level 1 — **Level 1 facilities, or Regional Emerging Special Pathogen Treatment Centers (RESPTCs),** are regional resources hubs which provide highly specialized care. *Level 1s care for patients for their duration of illness.*

Level 2 — **Level 2 facilities, or Special Pathogen Treatment Centers (SPTCs)**, have the capacity to deliver specialized care to clusters of patients and serve as primary patient care delivery centers. *Level 2s can care for patients for their duration of illness.*

Level 3 — **Level 3 facilities, or Assessment Centers**, are widely accessible care delivery facilities, able to conduct limited basic laboratory testing, stabilize patients, and coordinate rapid patient transfer. *Level 3s can care for patients for 12-36 hours.*

Level 4 — **Level 4 facilities, or All Other Healthcare Facilities**, can identify, isolate, inform, & initiate stabilizing medical care; protect staff; and arrange timely patient transport to minimize impact to normal facility operations.

Additional partners, such as EMS and public health, are essential for the coordination of the System

Speaker

Angela Hewlett, MD;MS
Presenter
University of Nebraska Medical Center

NETEC
NATIONAL EMERGING SPECIAL PATHOGENS TRAINING AND EDUCATION CENTER

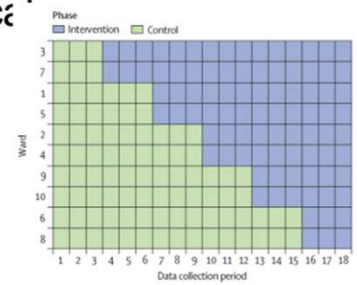
Level 1 Facilities: Regional Emerging Special Pathogen Treatment Centers (RESPTCs)

Lancet ID 2024; 24:1347+

Investigating the effect of enhanced cleaning and disinfection of shared medical equipment on health-care-associated infections in Australia (CLEEN): a stepped-wedge, cluster randomised, controlled trial

Katrina Browne, Nicole M White, Philip L Russo, Allen C Cheng, Andrew J Stewardson, Georgia Matterson, Peta E Tehan, Kirsty Graham, Maham Amin, Maria Northcote, Martin Kiernan, Jennie King, David Brain, Brett G Mitchell

- Focus on cleaning of shared medical equipment
- Stepped-wedge cluster RCT (10 wards, 1 hospital)
- Control: no requirement for cleaning staff to clean shared medical equipment
- Intervention: Cleaning bundle (added 3hr/d for dedicated medica[illegible] equipment cleaning by 21 dedicated staff, education, audit, feedback)
- Outcome: HAIs



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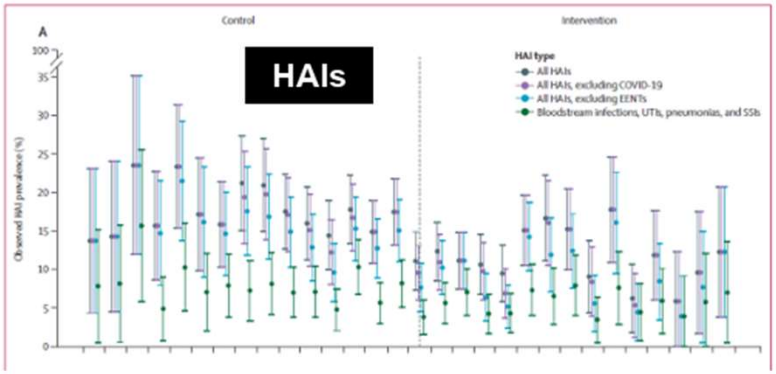

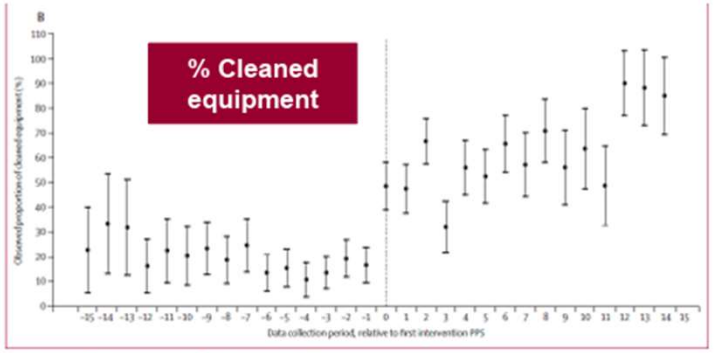

Figure 3: **Summary of outcomes relative to the first intervention PPS**
HAI prevalence (A) and proportion of cleaned equipment (B) in the control phase and intervention phase by HAI subtype. Each data collection period represents a 2-week period. EENT=ear, eye, nose, and throat infection. HAI=health-care-associated infection. PPS=point prevalence survey. SSI=surgical site infection. UTI=urinary tract infection.

	HAI point prevalence in the control phase, % (95% CI)	HAI point prevalence in the intervention phase, % (95% CI)	Absolute difference, percentage points (95% CI)	Relative difference, percentage points (95% CI)	OR (95% CI)	p value for OR
All HAIs	14·9% (10·4 to 19·4)	9·8% (6·1 to 14·1)	−5·2 (−8·2 to −2·3)	−34·5 (−50·3 to −17·5)	0·62 (0·45 to 0·80)	0·0006
Bloodstream infections, pneumonias, UTIs, and SSIs	6·3% (3·3 to 9·6)	4·0% (1·9 to 6·8)	−2·3 (−4·3 to −0·7)	−36·2 (−56·1 to −12·8)	0·62 (0·42 to 0·86)	0·013
All HAIs, excluding COVID-19	14·4% (10·2 to 19·0)	9·0% (5·7 to 13·4)	−5·3 (−8·1 to −2·7)	−37·2 (−51·3 to −19·5)	0·59 (0·45 to 0·77)	0·0002
All HAIs, excluding EENTs	13·0% (8·6 to 17·4)	8·3% (4·9 to 12·0)	−4·8 (−7·6 to −2·1)	−36·7 (−51·7 to −17·4)	0·60 (0·45 to 0·81)	0·0008

Model-based bootstrap results, showing predicted outcomes by study phase and absolute and relative differences in prevalence (intervention – control), after accounting for clustering and secular time trends. EENT=ear, eye, nose, throat, and mouth infection. HAI=health-care-associated infection. OR=odds ratio. SSI=surgical site infection. UTI=urinary tract infection.

Table 3: **Estimated changes in HAI point prevalence attributable to the intervention**

Follow Study

JAMA Network Open

JAMA Netw Open 2025; 8:e258565

Original Investigation | Infectious Diseases

Economic Evaluation of Enhanced Cleaning and Disinfection of Shared Medical Equipment

David Brain, PhD; Nirmali Sivapragasam, MPP; Katrina Browne, PhD; Nicole M. White, PhD; Philip L. Russo, PhD; Allen C. Cheng, PhD; Andrew J. Stewardson, PhD; Georgia Matterson, BBiotech; Peta E. Tehan, PhD; Kirsty Graham, BNurs; Maham Amin, MHlthLdr; Martin Kiernan, MClinRes; Jennie King, PhD; Brett G. Mitchell, PhD

Table 2. Cost-Effectiveness Analysis for 1000 Patients

Group	Total costs, $AUD[a]	Total HAIs	Change in costs, $AUD	HAIs avoided	ICER
Usual care	2 155 310	130	NA	NA	NA
Intervention	1 513 000	100	−642 010	30	Dominant[b]

Abbreviations: ICER, incremental cost-effectiveness ratio; NA, not applicable.

[a] Total costs refer to staff time, education, training, material development, consumables and/or equipment, treatment, medications, and patient length of stay. In usual care, the costs were related to length of stay.

[b] Due to the intervention's reduction in costs and HAIs, usual care is said to be dominated by the intervention.

Table 3. Cost-Effectiveness Results From Scenario Analysis for 1000 Patients

	Mean (95% CI)				
Group	Total costs, $AUD	Total HAIs	Change in costs, $AUD	HAIs avoided	ICER
Scenario 1					
Usual care	2 149 214 (2 008 458 to 2 289 971)	129.43 (129.02 to 129.84)	NA	NA	NA
Intervention	1 512 080 (1 417 140 to 1 607 019)	103.70 (103.33 to 104.08)	−637 135 (−690 439 to −583 830)	25.73 (25.17 to 26.28)	Dominant[a]
Scenario 2					
Usual care	2 149 214 (2 008 287 to 2 290 142)	129.43 (129.02 to 129.84)	NA	NA	NA
Intervention	1 689 408 (1 582 688 to 1 796 128)	116.45 (116.06 to 116.85)	−459 806 (−504 442 to −415 170)	12.98 (12.41 to 13.54)	Dominant[a]

Abbreviations: HAI, health care-associated infections; ICER, incremental cost-effectiveness ratio; NA, not applicable.

[a] Due to the intervention's reduction in costs and HAIs, usual care is said to be dominated by the intervention.

Biodegradable wipes ($$)

Halved intervention's effectiveness estimate

Ambulatory Infection Prevention

ICHE 2024; 45:1230+

CDC consultations related to ophthalmic practices and settings, January 2016–December 2023

Kevin B. Spicer MD, PhD, MPH, Joseph F. Perz DrPH and Kiran M. Perkins MD, MPH

- Reviewed queries to CDC DHQP related to Ophtho procedures/settings from 2016-2023 (26 consultations [81% outpatient])

Category(ies) of Investigation

- 73% Postsurgical adverse events
- 19% Toxic Anterior Segment Syndrome (TASS)
- 42% Following routine care (eye exam)
- 31% Suspected medication contamination
- 31% Device reprocessing
- 31% Ineffective environmental cleaning
- 12% Mishandled medications (reuse of sharps)
- 12% Contaminated donor tissue (corneas)

Outbreaks

ASHE 2025;
5:e161+

The risk of contaminated ultrasound gels in the intensive care unit: lessons from an outbreak of *Burkholderia cenocepacia*

Beevifatimah Ahamed Sha BSN[1], Paul Anantharajah Tambyah MBBS[2], Li Shi Poh BSN[1], Sarathamani Rethenam BSN[1], Lilibeth Silagan Alenton BSN[1], Poh Ling Chee BSN[1], Yong Yuan Sun BSN[1], Yong Peng Sii BSN[1], Zherong Gabriel Yan MBBS[3], Lasantha Ratnayake MBBS[4], Michelle Ang PhD[5], Gerald Chua MBBS[6] and Surinder Kaur Pada MBBS[7]

Alert: Use Only Sterile Ultrasound Gel for Percutaneous Procedures

For Everyone
MAY 13, 2025

Safety alert

1. Use only single-use ultrasound gel products labeled as "sterile" for ultrasonography in preparation for or during percutaneous procedures (e.g., placement of central and peripheral intravenous lines, amniocentesis, paracentesis, tissue biopsy, and surgical procedures).

2. Healthcare providers who perform ultrasounds and/or ultrasound-associated procedures should be trained in the appropriate use of ultrasound gel products.

3. An ultrasound gel product label's claim of "bacteriostatic" or "preservative" without a specific indication of sterility should be considered non-sterile for clinical purposes.

Influential Lectures & Thought Leadership

César Arias: AMR at the bedside.

Sallie Permar: maternal–child vaccine innovation.

Helen Talbot: adult immunization renewal.

Judith Feinberg: advocacy as medicine.

Anthony Harris: mentorship as compass.

Michael Osterholm: The pandemic clock is ticking.

Themes

Artificial Intelligence	Sustainability	Emerging pathogens	One Health
Diagnostic Stewardship	Surveillance	High Tech Outbreaks	Disinfection

Resources

PROJECT FIRSTLINE
CDC's National Training Collaborative for Healthcare Infection Prevention & Control

CDC TRAIN

NWSS
NATIONAL ™ WASTEWATER SURVEILLANCE SYSTEM

NETEC
NATIONAL EMERGING SPECIAL PATHOGENS TRAINING AND EDUCATION CENTER

LEARNINGCE
SHEA
Online Education Center

PRACTICE Greenhealth®

Practical takeaways for 2026

INTEGRATION

INTELLIGENCE

IMPACT

Source: Closing Plenary Summary

Upcoming Conferences

Spring 2026

SHEA Spring 2026
April 7-10, 2026
Chicago, IL

Fall 2026

IDWeek 2026
October 21–24, 2026
Washington, DC