



7-8-9
MAI 2017

Mise
sur
toi

Mise
sur ton
équipe

MISONS
PCI



Turning Mission Impossible Into IPC Success

Jason Tetro, Visiting Researcher, University of Guelph

39^{es} JOURNÉES SCIENTIFIQUES



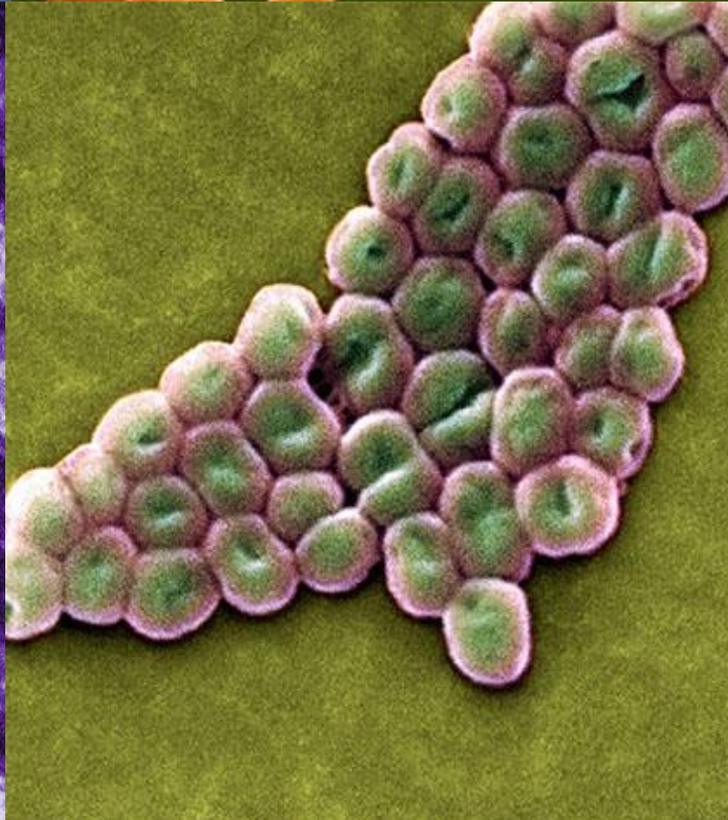
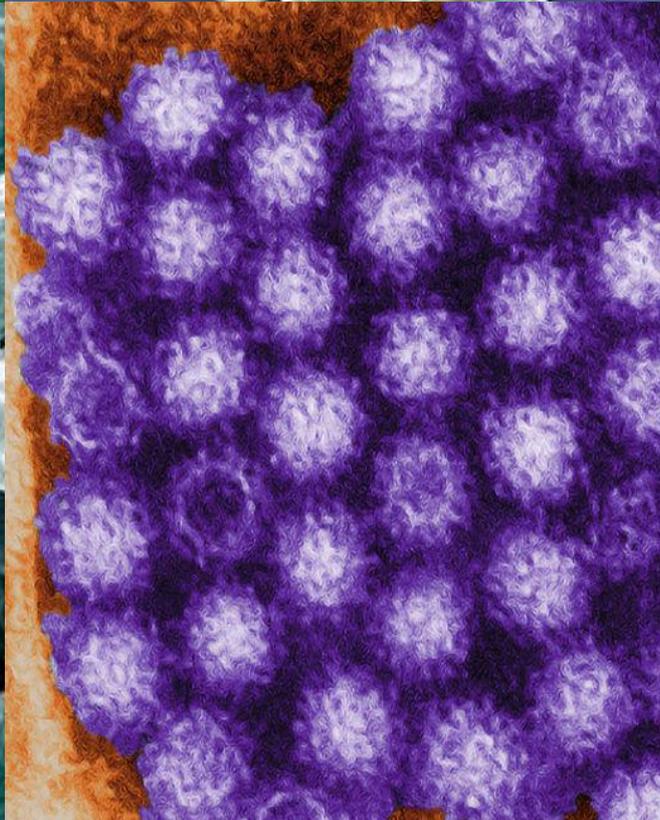
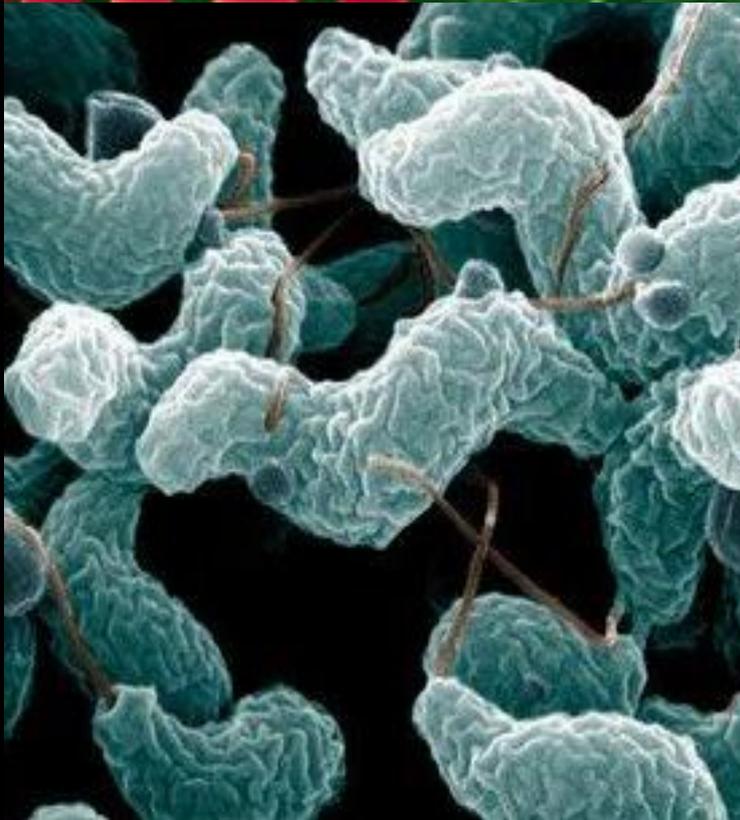
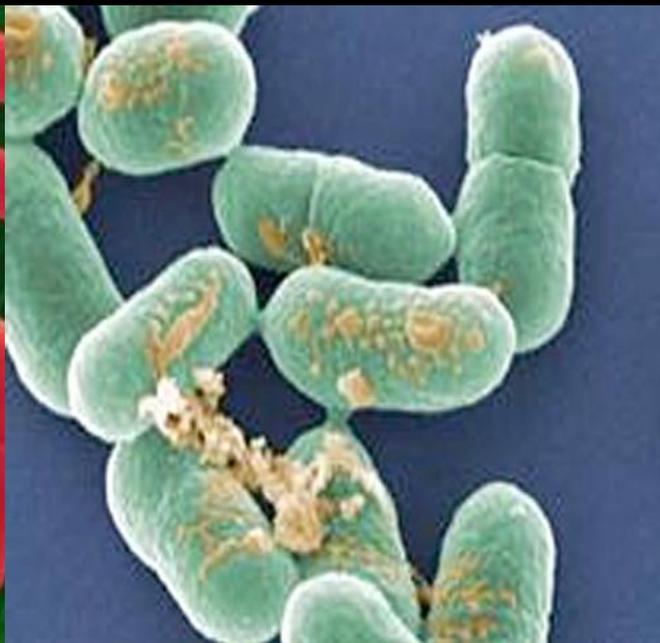
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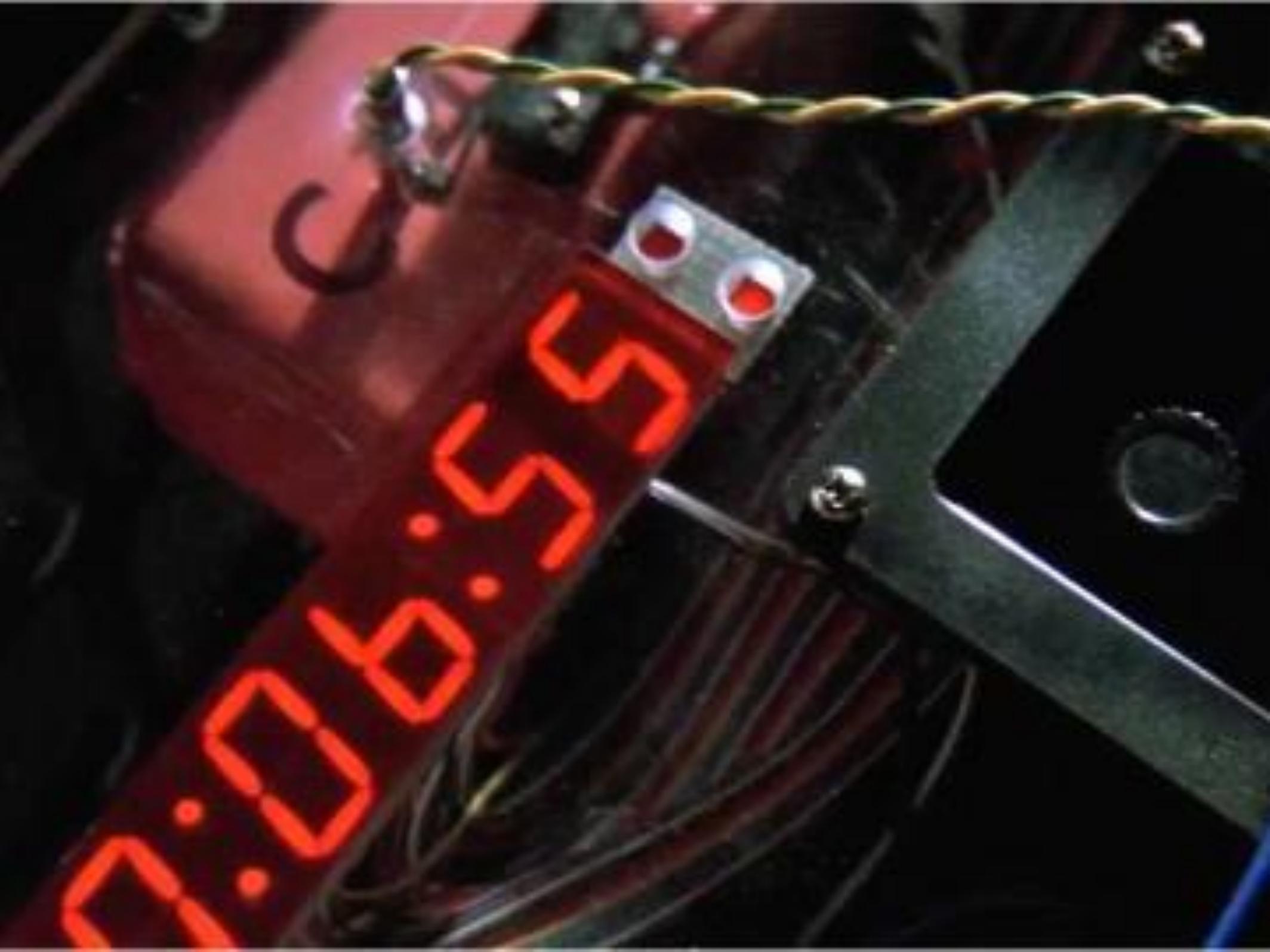
















**KEEP
CALM
AND CALL**

**INFECTION, PREVENTION
& CONTROL**



A close-up photograph of two human hands, palms facing each other, with text written on them in black marker. The background is solid black. The text on the left palm reads "YOU'RE IN ALONE." and the text on the right palm reads "NOT THIS.".

"YOU'RE
IN
ALONE."

NOT
THIS.



Standings 2014-2015

25 New Jersey	82	32	36	14	78	27	181	216	-35
26 Carolina	82	30	41	11	71	25	188	226	-38
27 Toronto	82	30	44	8	68	25	211	262	-51
28 Edmonton	82	24	44	14	62	19	198	283	-85
29 Arizona	82	24	50	8	56	19	170	272	-102
30 Buffalo	82	23	51	8	54	15	161	274	-113





WELCOME TO TORONTO, MIKE.



The End Result...

27		Columbus	82	34	40	8	76	28	219	252	-33
28		Vancouver	82	31	38	13	75	26	191	243	-52
29		Edmonton	82	31	43	8	70	27	203	245	-42
30		Toronto	82	29	42	11	69	23	198	246	-48



What happened?

Rush decisions

Expected outcomes were beyond capabilities

Money was thrown out but value lost

GMs/coaches do not play for 60 minutes on the ice

The Cup was the goal, not a winning season

But there's an 82 game season before that



Leafs make playoffs for first time since 2013 with 5-3 win over Penguins





**MISSION
POSSIBLE**

YOU NEED 4Es

EDUCATION

ENGAGEMENT

EXECUTION

EVALUATION



Education

The foundation for all missions

Without knowledge, there can be no change

Using literature to develop plans of action

Vast amount of information available

Not only scientific...

Economic

Behavioural

Perception



**“There are known knowns.
These are things we know
that we know.**

**There are known unknowns.
That is to say, there are
things that we know we don't
know.**

**But there are also unknown
unknowns. There are things
we don't know we don't
know.”**

Donald Rumsfeld



Donald Rumsfeld Effect

May seem amusing at first glance

Silly phrase from a untrustworthy man

Effective means to raise concern

If we don't know...what do we do?

Opens the door to uninvited ideas

Can change the landscape

Get people to think outside the norm

Can get out of hand if not handled correctly

You might understand but...



THE PUBLIC MAY NOT...



DUSTIN HOFFMAN

RENE RUSSO

MORGAN FREEMAN

OUTBREAK



DON'T TALK TO ANYONE.
DON'T TOUCH ANYONE.



GWYNETH PALTROW
CONTAGION

DUSTIN HOFFMAN

RENE RUSSO

MORGAN FREEMAN

OUTBREAK

DON'T TALK TO ANYONE.
DON'T TOUCH ANYONE.

FEARBOLA

GWYNETH PALTROW
CONTAGION

18-10-19
STAR
SKP



ospital *Microbiome*





MCR-1



MCR-1



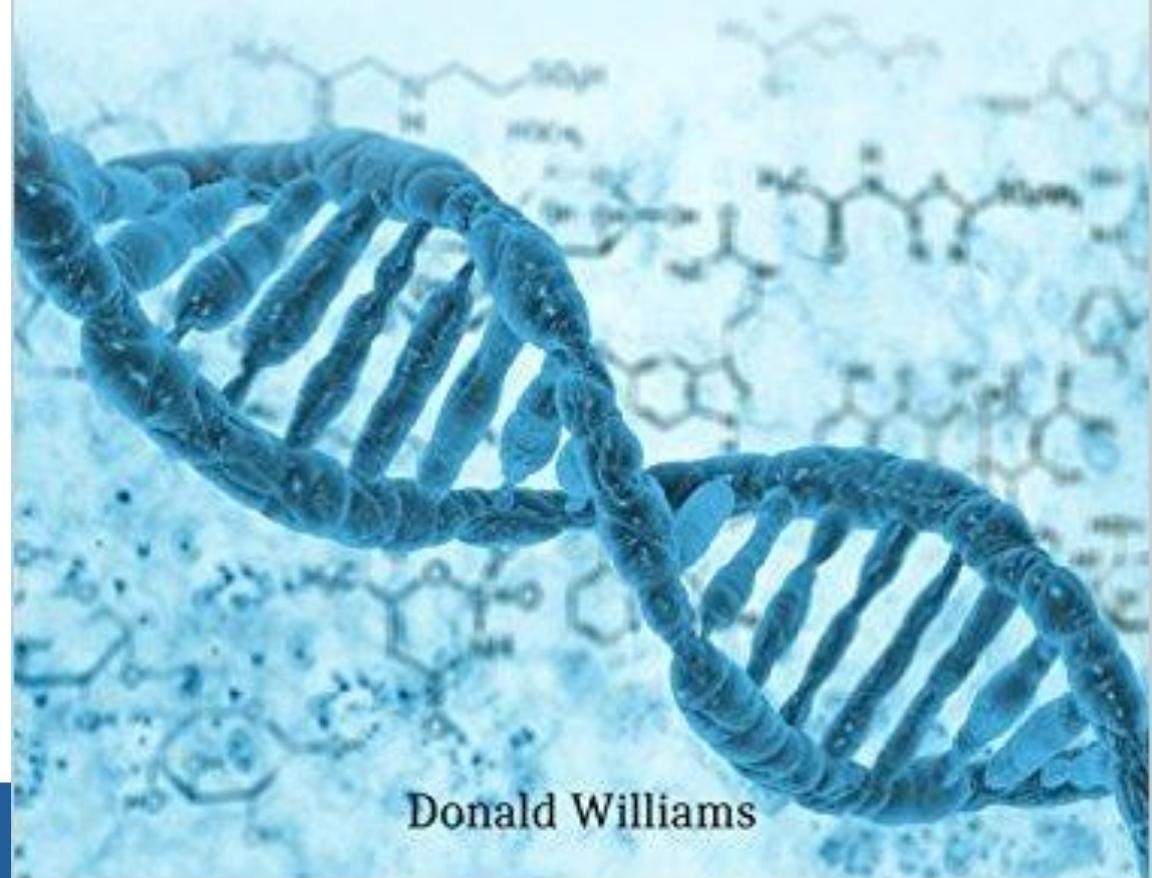
MCR-1



MCR-1 Gene

FIGHTING ANTIBIOTIC

What You Can Do to Combat
Antibiotic Resistant Infections



Perspective...

Plasmid-mediated colistin resistance

Been around since the 1980s

Only discovered last year

Potential tipping point for a post-antibiotic era

Resists antibiotic of last resort



Reality...

Last resort

It's the last antibiotic we would choose because of side effects
Missed in most of the media headlines

Mcr-1 is not an indicator of pan-resistance

Many are still susceptible to regular antibiotics
No sign of any compound resistance with carbapenamase
Some strains have lactamases as well

Discovery does add nail to coffin of antibiotics

But this is by no means the end
Just have to add one more gene to surveillance



The 24/7 News Stream...



THIS IS THE PERFECT TIME

TO PANIC!!!

When Panic Attacks...

Evidence is the best defense

Will support good practice

But understanding the evidence is far more important

Panic can hinder this need

Can lead to trust in lieu of scrutiny

May also lead to unnecessary requests

How many have asked for tests to kill:

H1N1 pandemic flu – any influenza

SARS coronavirus – any coronavirus

HPV - poliovirus

Ebola & Zika – enveloped viruses



The Disinfection Dilemma

Guidelines for kill

Standard tests in place

Does a product meets the criteria?

The results can then be used to promote a product

Who can resist a 99.99% reduction

We are always looking for that <0.01 p value as well

It's the benchmark of statistical significance

But how exactly did these results come to be?

What were the methods

Are they relevant?



Which Test Is Right For You?

Suspension Test

Good for soaking

Carrier Test

Realistic for surface disinfection

Contact time is important!

Wipe Test

Known as ASTM E2967

Also, the Wiperator Test

Need to match methods

If not, the data can lead to choose an inappropriate method

New ASTM Standard Tests for Decontamination Abilities of Disinfectant Towelettes



A new ASTM International standard details the procedures for testing pre-wetted towelettes with a mechanized device called "the wiperator."

Manufacturers would use the standard (soon to be available as E2967, Test Method for Assessing the Ability of Pre-Wetted Towelettes to Remove and Transfer Bacterial Contamination on Hard, Non-Porous Environmental Surfaces Using the Wiperator) to test towelettes for their ability to decontaminate surfaces laden with pathogens.



**TRIAD**^{TM/NC}
III**6**

Disinfectant Cleaner

Bactericidal • Fungicidal • Mildewstatic • Deodorizing • *Virucidal

ACTIVE INGREDIENT:n-Alkyl (50% C₁₄, 40% C₁₂, 10% C₁₆)

dimethyl benzyl ammonium chlorides.....3.90%

OTHER INGREDIENTS: 96.10%**TOTAL:**..... 100.00%

KEEP OUT OF REACH OF CHILDREN
DANGER

See side panel for additional precautionary statements.

FIRST AID

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

**IN CASE OF EMERGENCY, CALL A POISON CONTROL CENTER OR
DOCTOR FOR TREATMENT ADVICE.**

1-800-851-7145

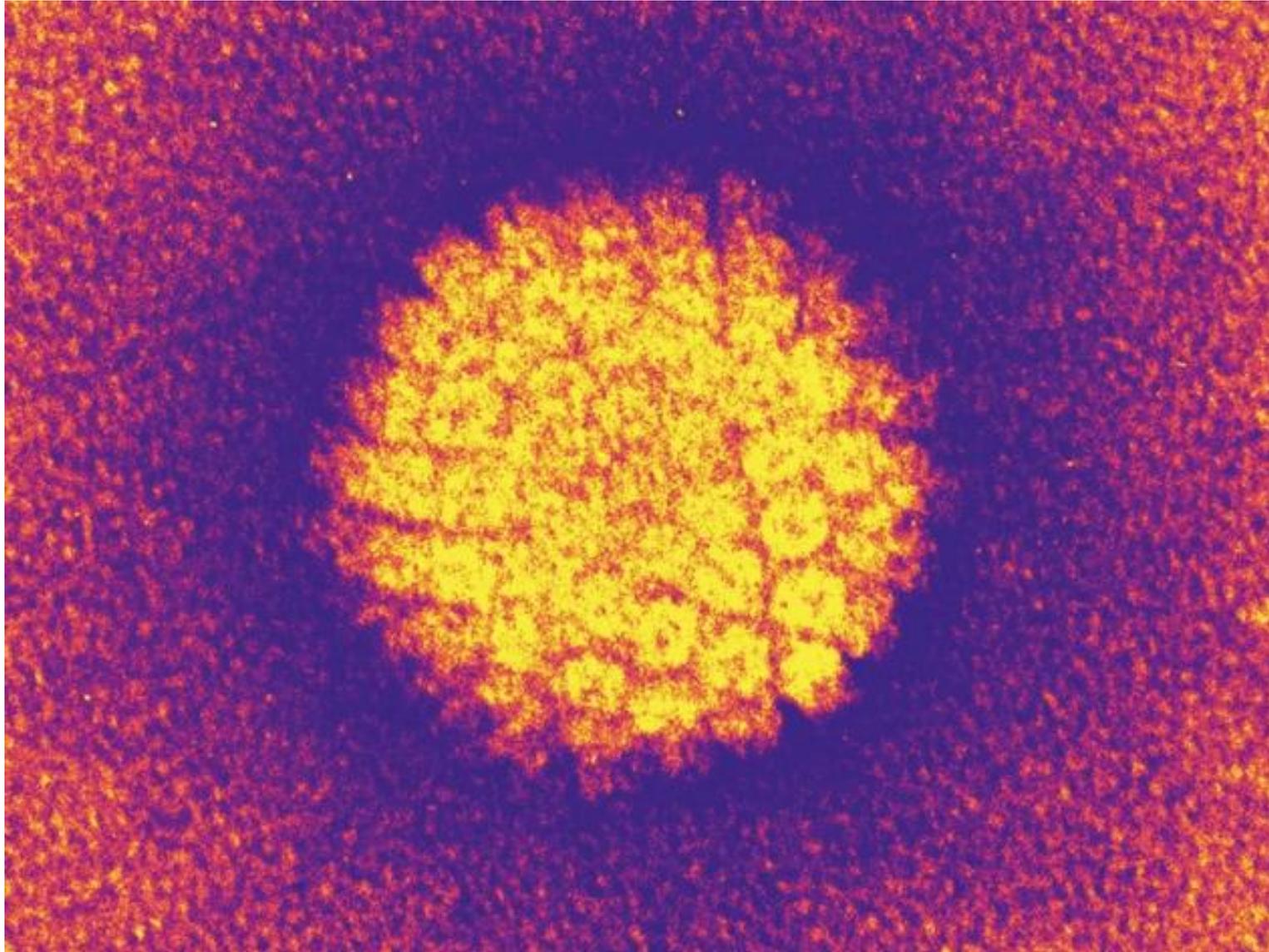
Have the product container or label with you when calling a
Poison Control Center or doctor or going in for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Net Contents: 3.78 L / 1 U.S. Gal.

3164385

The Pursuit of Papillomiacides



What's The Problem?

High Risk HPV Contamination of Endocavity Vaginal Ultrasound Probes: An Underestimated Route of Nosocomial Infection?

Jean-sebastien Casalegno , Karine Le Bail Carval, Daniel Eibach, Marie-Laure Valdeyron, Gery Lamblin, Hervé Jacquemoud, Georges Mellier, Bruno Lina, Pascal Gaucherand, Patrice Mathevet, Yahia Mekki 

Persistence of Microbial Contamination on Transvaginal Ultrasound Probes despite Low-Level Disinfection Procedure

Fatima M'Zali^{1*}, Carole Bounizra¹, Sandrine Leroy², Yahia Mekki³, Claudine Quentin-Noury¹, Michael Kann¹

Transvaginal ultrasound probe contamination by the human papillomavirus in the emergency department

Shuk Ting Christine Ma,¹ A C Yeung,² Paul Kay Sheung Chan,² Colin A Graham¹



Is This A Reason To Worry?

Human Papilloma Virus – The New Challenge For Infection Prevention

PREVENTING HPV TRANSMISSION IN THE HEALTHCARE SETTING

Appropriate reprocessing of ultrasound probes between patients is critical to reduce the risk of human papilloma virus (HPV) transmission. Recent research shows disinfectants commonly used on ultrasound probes do not kill natural, infectious high-risk HPV.¹

Given the prevalence of HPV, the potential for HPV transmission in the healthcare setting, and the virus's links to cancer, these latest research developments are a major concern.

The trophon EPR is the first high level disinfection system proven to kill natural, infectious, high-risk HPV in laboratory testing, using the manufacturer's FDA-cleared conditions.² For more information visit www.hpvdisinfection.com.

COMMONLY USED DISINFECTANTS DO NOT KILL HIGH-RISK HPV

Due to the difficulties of producing natural, infectious HPV for research, disinfectant efficacy testing against HPV has not previously been possible. This changed recently when the world's first method to produce sufficient infectious HPV for research was developed, and the first HPV disinfectant efficacy study was published in 2014.¹

The results showed that two disinfectants commonly used for high level disinfection (HLD) in medical and healthcare facilities, glutaraldehyde and *ortho*-phthalaldehyde (OPA), do not kill natural, infectious, high-risk HPV16 – even after 24 hours of contact time.¹



Probably Not...

HPV Biology

Non-enveloped DNA virus similar to poliovirus

HPV was tested in 2014

Myers et al. J Antimicrob Chemother. 2014 Jun;69(6):1546-50

Not surprisingly resisted certain antimicrobials

A panic situation?

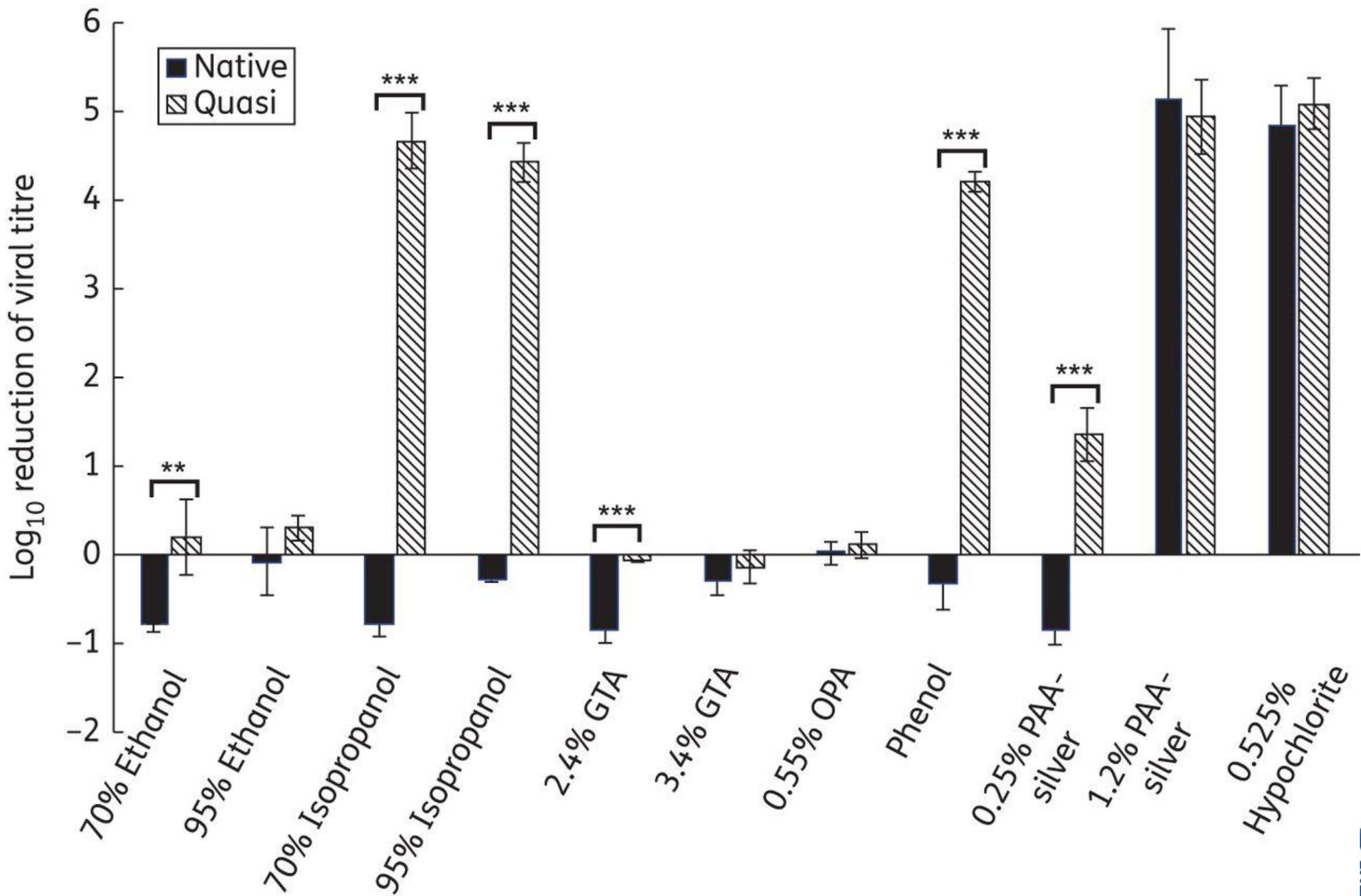
The failing disinfectants also fail against poliovirus

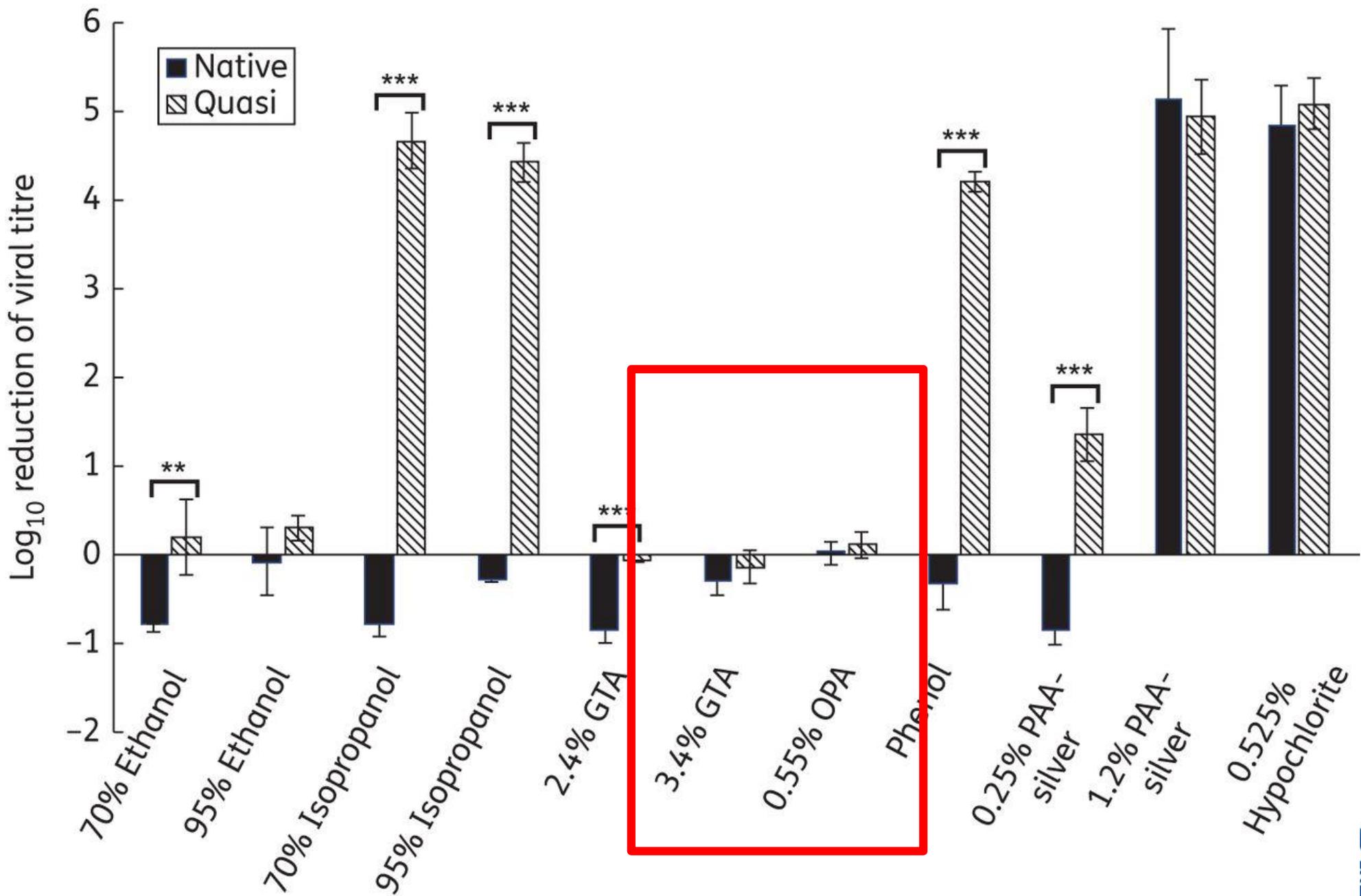
Disinfectants known to kill polio...not included

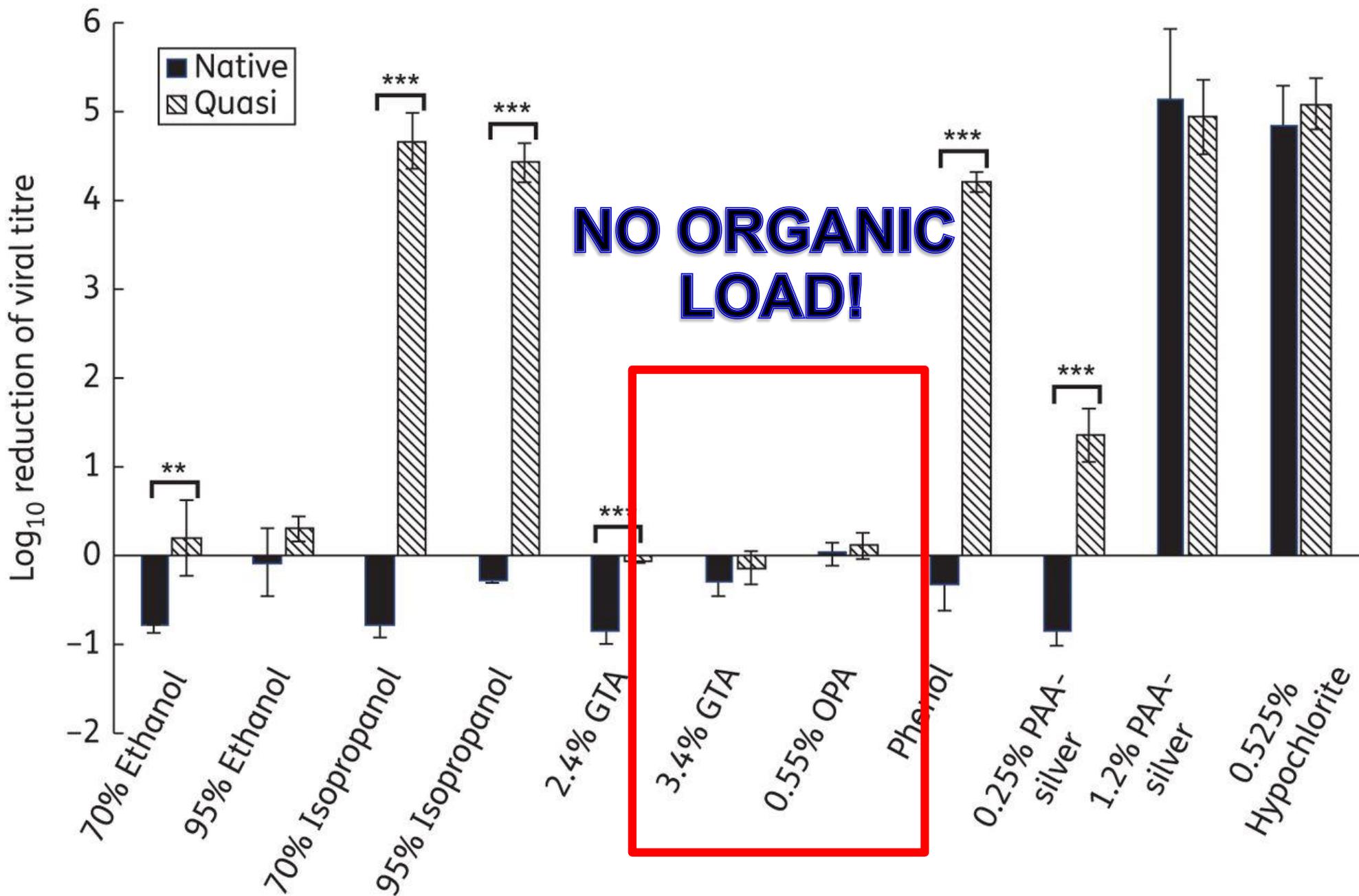
No Assumed Risk

Evidence shows us the path









Engagement

After education in place, time to reach out

Form alliances

Develop plans of action with other groups

Brainstorm possible trials & feasibility markers

Be Honest and Realistic

Don't go overboard when pitching ideas



The Grade 8 Principle











OUTWIT OUTPLAY

SURVIVOR

OUTLAST

TM









Isolation Precautions for Visitors



Be Universal

Remember to consider all possible stakeholders

Groups may be missed in the process

Could lead to unnecessary troubles

Behaviour is critical in this case

Need to figure out how people will react

Resistance? Acceptance? All out war?

Have to be ready to mediate these issues

If not, go back to education



Execution

Execution may seem like the best stage

It quite possibly can be the worst

Rehearse, rehearse, rehearse!

Go through all the motions

Determine pitfalls and hurdles quickly

Can save significant troubles

Always have the experts on hand...

May be more than one person





SPY COMMAND STATION





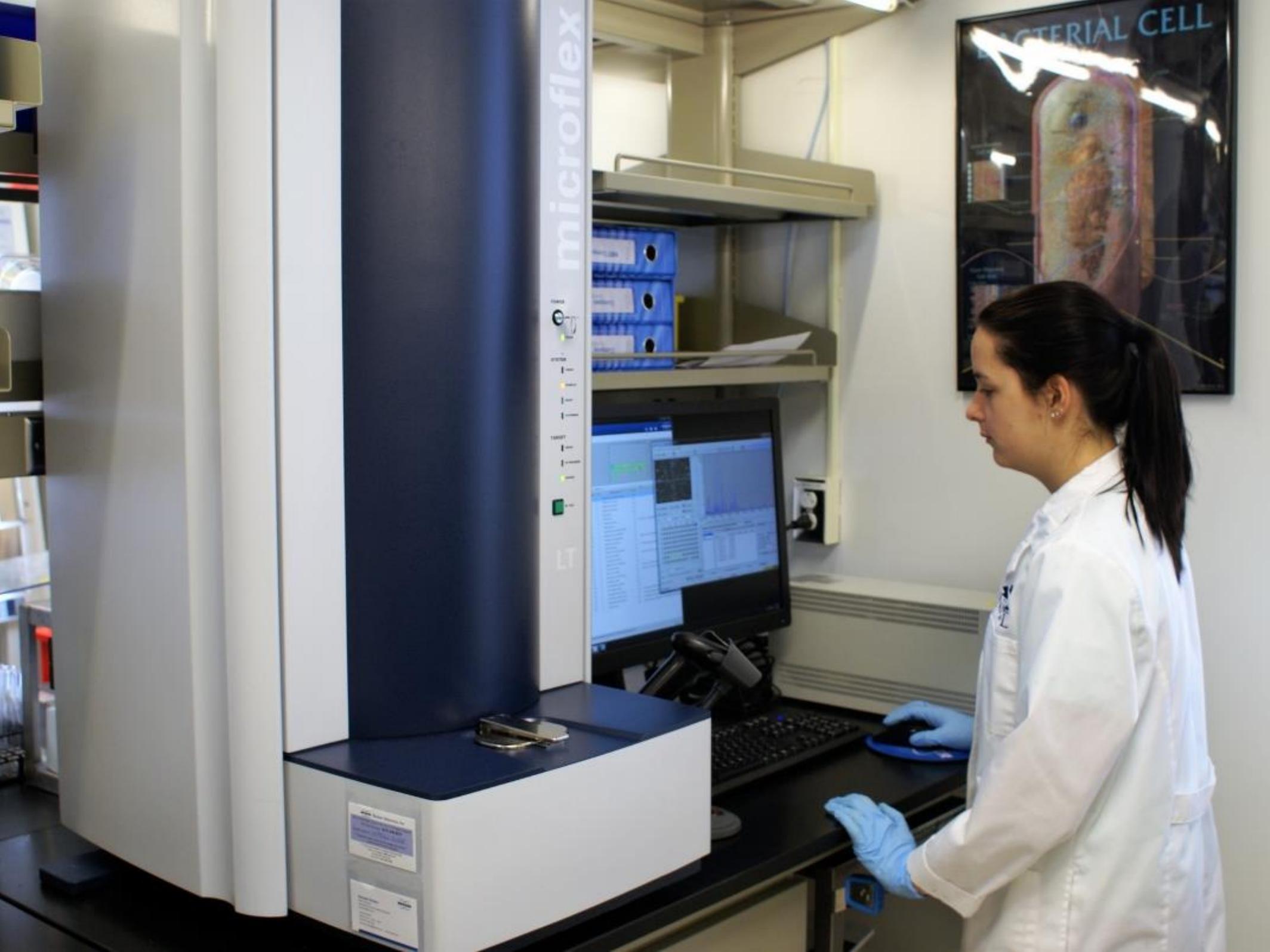
Wear gloves when operating

illumina

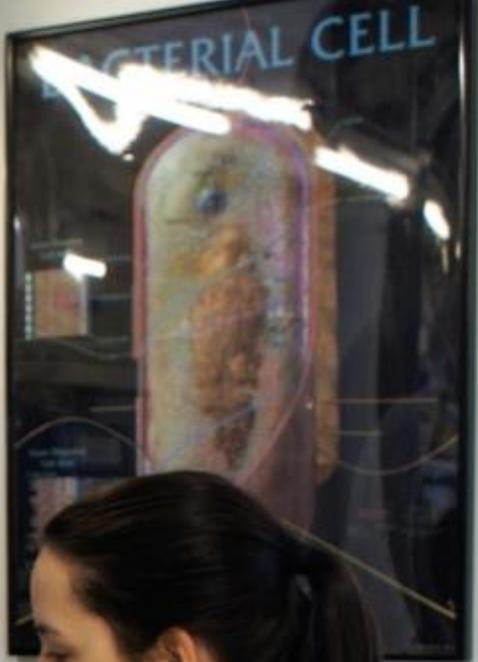


Wear gloves when operating





microflex



Microflex
Flow Cytometer
Beckman Coulter

Microflex
Flow Cytometer
Beckman Coulter



LI X_{RLU}

75
10

TEST# 20 110
PROBE 0 180
POWER 14.4V
11:38 AM 6/29/2007

SystemSURE Plus

Hygiene - ULTRA



The Bundle Approach

A fascinating means of execution

Has represented a turnaround in many areas
Particularly infection prevention and control

Involves 'bundling' already known practices into one
Creates a checklist of what works

Has been around for over 10 years

Ventilator-associated pneumonia
Central line-associated bloodstream infections
Disinfection and antisepsis



One Step-Wedge At A Time

Step-wedge approach

A form of sequential trial

Small groups within a larger group experience intervention

Continues over time until full implementation

Excellent method for execution

Can be performed in any context within healthcare

Provides exceptional data for analysis

Can be stopped at any time with minimal consequences

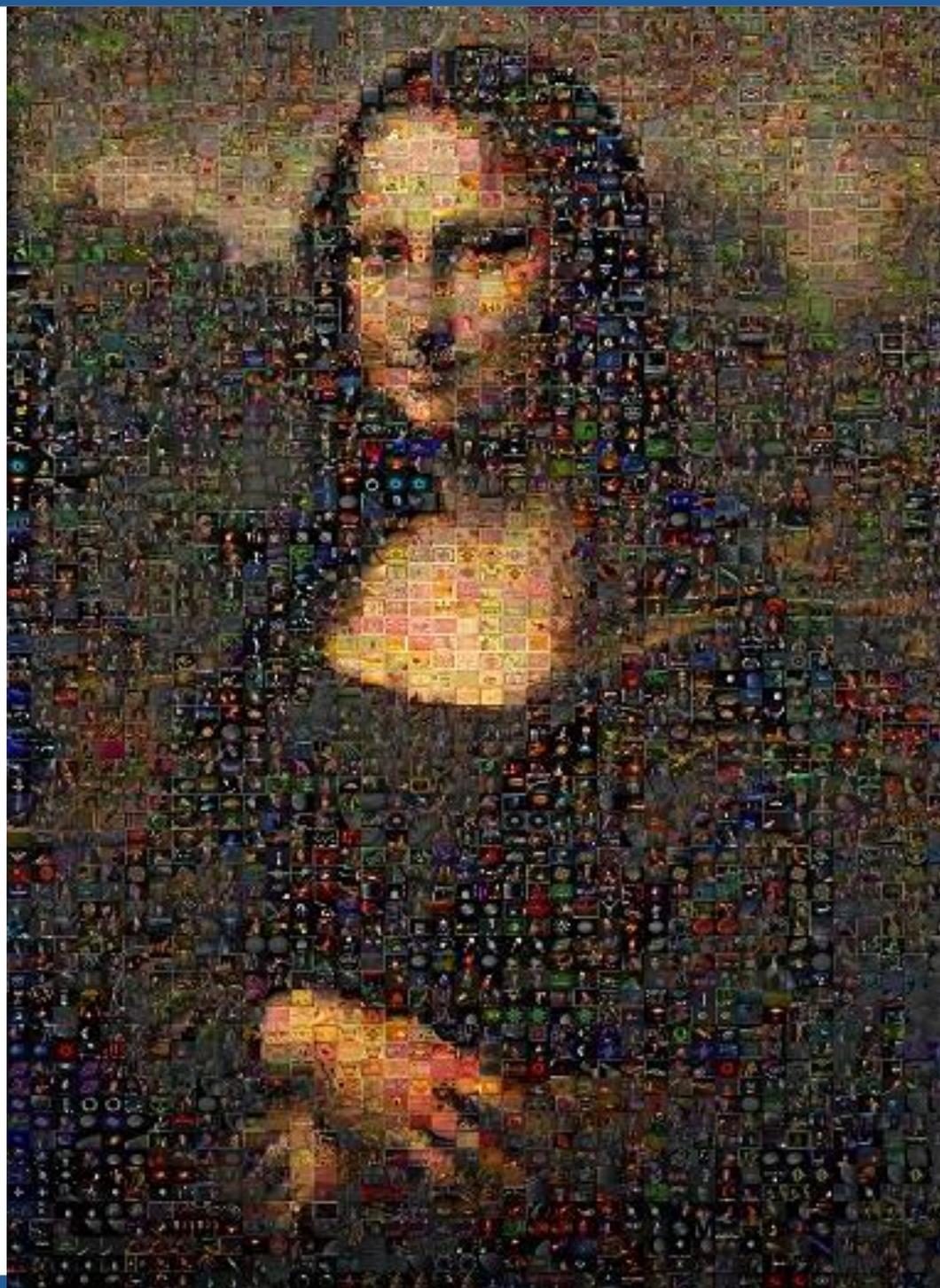
More: Brown and Lilford. BMC Res Methodol. 2006;6;54

Can be incorporated with bundles

Provide a larger picture comprise of very small steps







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Evaluation

Academic

Publication and Conferences

Quality-Based

Equating implementation with improvement

Public

Increasingly necessary

Social interaction a must





AUDIT

1 859

204

1 319

28 640
130 585

12 813

11 701

20
431

25
379
418

11 884











Summary

IPC is NOT Mission Impossible

Takes time and effort to get it right

The 4Es will guide path

Easy to understand & apply

Always remember the end goal

Successful mission





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