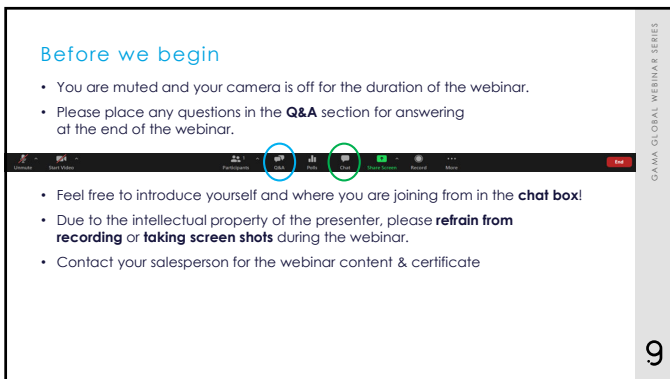




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Our speakers




Yvonne Carter
Clinical Director

While at The Royal Free Hospital, she was vital in reducing Clostridium difficile rates by 72%, winning her the National Nursing Times IPC award in 2009 and 2014.
Having helped develop UK national guidelines for the safe use of protective clothing for high consequence infectious diseases, Yvonne also provides ICP expertise to Africa, Asia, Europe and Australia.



Michael Sanni
Clinical Specialist

Michael-Godwin Sanni is a Clinical Specialist in GAMA's Clinical Department under the consumables category. He has over 6 years experience within the NHS working as a Specialist Cardiac Physiologist and Clinical educator. Michael has a BSc in Cardiac Physiology and a master's in philosophy medicine.



Dan Morgan-Smith
Global Acute Strategy Director

Dan is an experienced Infection Prevention Sales leader with 25 years of experience in the UK market. He has worked with two ambulatory companies helping both grow to be strong market leaders and the outstanding company in their field.
The GAMA UK team now have 100% market share in Northern Ireland, Scotland and Wales and 92% market share in England NHS for Universal wipes.

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4

Yvonne Carter & Michael-Godwin Sanni & Dan Morgan Smith

WELCOME

2022

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5

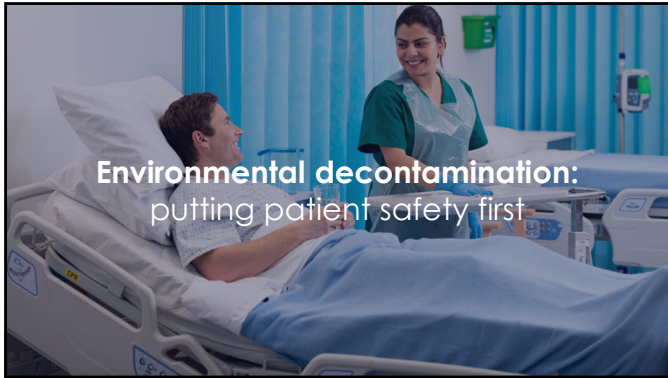
AGENDA

1. Putting patient safety first
2. Evidence based discussion
3. Test data and Clinical evidence

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6



Environmental decontamination:
putting patient safety first

7



We help prevent
infections to save and
improve lives.

8

Is the environment important to patient safety?

- Swabbing identifies microorganisms on the environment – but are they harmful to people?
- Match environmental contamination to patient infections – need to ‘type’ or genetically match the samples to prove connection.
- Surveillance to determine increase in infections in patients cared for in an environment previously used for a patient colonised or infected with the same organism.
- B.G. Mitchell et al. Risk of organism acquisition from prior room occupants: a systematic review and meta-analysis, *Journal of Hospital Infection* 91 (2015) 211-217 – **environmental cleaning practices fail to reduce the risk of acquisition... we should consider the use of novel approaches to improve cleaning, the use of new cleaning technologies and interventions involving the patient.**
- Wu YL, Yang XY, Ding XX, Li RJ, Pan MS, Zhao X, Hu XQ, Zhang JJ, Yang LQ. Exposure to infected/colonized roommates and prior room occupants increases the risks of healthcare-associated infections with the same organism. *J Hosp Infect.* 2019 Feb;101(2):231-239. **exposure to infected/colonized roommates and prior room occupants significantly increased the risks of HAIs with the same organism.**

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How long do nosocomial pathogens persist on inanimate surfaces?

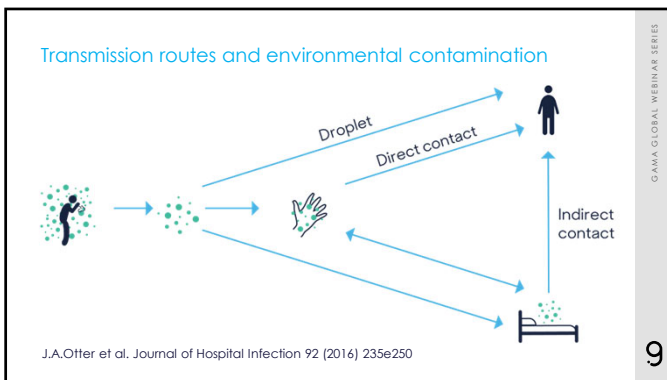
Acinetobacter spp.	3 days to 5 months	Mycobacterium tuberculosis	1 day – 4 months
Bordetella pertussis	3 – 5 days	Pseudomonas aeruginosa	6 hours – 16 months; on dry floor: 5 weeks
Campylobacter jejuni	up to 6 days	Salmonella typhi	6 hours – 4 weeks
Clostridium difficile (spores)	5 months	Staphylococcus aureus and MRSA	7 days – 7 months
Escherichia coli	1.5 hours – 16 months	Vibrio cholerae	1 – 7 days
Enterococcus spp (incl VRE)	5 days – 4 months		
Haemophilus influenzae	2 days		
Klebsiella spp.	2 hours to > 30 months		

<https://pubmed.ncbi.nlm.nih.gov/16914034/how-long-do-nosocomial-pathogens-persist-on-inanimate-surfaces-a-systematic-review/>
Kramer A et al, 2006, BMCID

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10



11

What do I want to effectively remove?

	MICROORGANISM	EXAMPLES
	Prions	Creutzfeldt-Jakob Disease
	Bacterial spores	Bacillus spp., Clostridium spp.
	Protozoal oocysts	Cryptosporidium
	Mycobacteria	Mycobacterium tuberculosis
	Small, non-enveloped viruses	Poliovirus, Papillomavirus
	Protozoal cysts	Giardia
	Fungal spores	Aspergillus, Penicillium
	Gram-negative bacteria	Pseudomonas spp., Escherichia coli
	Vegetative fungi	Aspergillus, Candida
	Vegetative protozoa	Giardia, Cryptosporidium
	Large, non-enveloped viruses	Adenoviruses and Rotaviruses
	Gram-positive bacteria	Staphylococcus spp., Enterococcus spp.
	Enveloped viruses	Human Immunodeficiency Virus, Hepatitis B Virus

← Spores
← CRE
← MRSA
← Coronavirus

Figure 1: Classification of microorganism by level of resistance to common disinfectants. Adapted from Russel, 1999[1].

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Decontamination

Cleaning

- Physical removal of
 - foreign material (e.g. dust, soil) and
 - organic matter (e.g. blood, secretions, excretions)
- on an item or a surface on which they thrive,
- by use of an appropriate cleaning agent such as detergent.

Disinfection

- A process used to destroy, inactivate or remove viable microorganisms on an item or surface to a safer level.

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13

Cleaning

Disinfection

COMBINE CLEANING AND DISINFECTING PROPERTIES 1 STEP INSTEAD OF 2 STEP PROCESS.

Detergents help to loosen and lift pathogens from surfaces

A detergent alone will not kill pathogens but will help remove and reduce bioburden

Be applied to a clean, dry surface – pre clean with detergent

Be used at the right concentration

Rinse with water to remove residue

Friction and pressure aids removal

Be effective against particular pathogens

Kill, not just prevent from causing harm...cidal, not...static.

Dry surfaces after cleaning to aid the reduction of further growth

Have enough time in contact with the surface to kill the pathogen

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14

How do I know I have reduced contamination to a safe level?

Let's look at how we can be sure of effective reduction of contamination – this is called 'log reduction' and is measures in reduction steps of x10 the original amount of contamination.

Log reduction	Number of CFUs	Percentage reduction	Times smaller
0 log (Log0)	1 000 000	0%	N/A
1 log (Log1)	100 000	90%	x 10
2 log (Log2)	10 000	99%	x 100
3 log (Log3)	1 000	99.9%	x 1 000
4 log (Log4)	100	99.99%	x 10 000
5 log (Log5)	10	99.999%	x 100 000
6 log (Log6)	1	99.9999%	x 1 000 000

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15



16

Importance of contact time

- The chemical or biological reactions that disinfectants use to kill micro-organisms only occur in wet conditions and in direct physical contact.
- During the cleaning process, a wipe must make the surface wet for the minimum time the chemical/biological action needs to take place.

The wet contact time and the inactivation of microorganisms generally depends on:

- temperature and humidity,
- air exchange in the room,
- application technique (e.g. vapourisation),
- surface cleanliness,
- time for the disinfectant to dry

9

17

Technique is equally important

THE 5 PRINCIPLES OF CLEANING

Please ensure that you follow the manufacturer's guidelines.

- 1** Wipe in an 'S' shaped pattern
- 2** Work from top to bottom
- 3** Wipe from clean to dirty
- 4** Ensure correct contact time
- 5** One wipe, one surface

9

18

Microorganisms can be found on any surface in a hospital or healthcare setting including hard and soft furnishings, beds, linen, bathroom items and equipment.

Door
Electronic devices
Device stands
Bedside table
Remote control
Electronic devices
Bedside table
Bed rail
Mattress
Chair

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19

Biofilms

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20

Where are biofilms found in healthcare?

Devices	Tissue infections	Environmental
<ul style="list-style-type: none"> • Endotracheal tubes • Contact lenses • Vascular central catheters • Cardiac valves/grfts • Pacemakers • Peripheral vascular catheters • Urinary catheters • Orthopaedic implants 	<ul style="list-style-type: none"> • Chronic wounds • Bone infections • Urinary tract infections • Biliary tract infections • Kidney stones • Lung infections / cystic fibrosis • Endocarditis • Tonsillitis, dental plaque, sinusitis 	<ul style="list-style-type: none"> • Medical equipment, ventilator tubing and accessories • Dry biofilm on patient care equipment and furniture • Sinks and showers

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21

Biofilms

- Microbial cells grow together attached to a surface/ forming aggregates
- More than 99% of all bacteria live in this way, forming complex microbial communities

- A biofilm is an extracellular matrix which the bacteria grow around themselves.
- Matrix consists of sugars and proteins.
- This film provides an extra protective barrier and from disinfectants and antibiotics
- Powerful disinfectants and cleaning agents are required to remove them from surfaces

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Surface biofilms

Process:

- Fouling	- Degradation of leaching components	- Corrosion	- Hydration - Penetration	- Colour
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Effect:

- Change of surface properties	- Embrittlement	- Embrittlement	- Conductivity	- Looks ugly
- Contamination of media	- Loss of stability	- Loss of stability	- Swelling	

- look at ways to prevent biofilm formation.
- reduce biofilm re-growth after cleaning and control spread or transference of biofilm.
- liquids only affect biofilms they come into contact with for that period of time.
- check active concentration - it may be higher than is usable in healthcare
- look for true biofilm disinfectant that will be in contact with the surface for the effective period of time without being damaging to surfaces - such as peracetic acid preparations.

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23

Let's look at some of the information, evidence and studies around safe environments for patient care.

24



25

An overview of the Problem

- Estimated 4.95million deaths are associated with bacterial AMR in 2019, with 1.27 million deaths attributed to bacterial AMR (Christopher *et al.* 2019).
- Highest rates of deaths attributed to microbial resistance showed western sub-Saharan Africa at 27.3 deaths per 100,000 and lowest in Australia with 6.5 deaths per 100,000 (Christopher *et al.* 2019).
- Based on WHO latest HAIs global report and IPC global report, they stated that 8.9 million HAIs occur every year in acute and long-term care facilities in Europe alone (WHO, 2021).
- HAIs in adult intensive care units and neonatal infection rates are 2-3 and 3-20 times higher, respectively, in low- and middle-income regions than high-income region (WHO, 2021).


9

26

Evidence based practice

Wipe out MRSA: effect of introducing a universal disinfection wipe in a large UK teaching hospital. Mark I. Garvey *et al.* 2018

- Aim of the study was to investigate the changes in the rate of MRSA acquisition in large UK hospital when 2 step surface disinfection is supplemented for 1 step universal wipe which is both detergent and disinfectant.
- April 2013 –April 2016 PDI. Detergent wipe clean and alcohol disinfection:
 - Clean with detergent
 - Dry (e.g. surface is not dry then alcohol becomes diluted).
 - Wipe with alcohol.



9

27

Evidence based practice

- Using PDI wipes – MRSA acquisition rates 20.7 per 100,000 patient days.
- Using Clinell universal – MRSA acquisition rates 9.4 per 100,000 patient days.
- PDI = 310 MRSA acquisitions Clinell = 93 acquisitions
- The data suggest the use of a one wipe regime is associated with reducing the incidence of healthcare associated MRSA.

9

28

Evidence based practice

Role of the environment in transmission of Gram-negative bacteria in two consecutive outbreaks in a haematology-oncology department. W.C. Van der Zwet *et al* 2022.

- The Aim of the paper was to investigate the role of the environment during two sub sequent outbreaks in 2019-2022 caused by ESBL-producing *Enterobacter cloacae* and multi drug-resistant *Pseudomonas putida*.
- Environmental samples were taken from sinks and shower drains.
- By the end of June disinfection of sinks and showers drains was intensified by replacing all daily and weekly cleaning products with chlorine at 250ppm.

9

29

Evidence based practice

Results

- Experiment 1:** remnants of fluorescent flushed water were seen throughout the toilet bowl, and some identified outside.
- Experiment 2:** Flushing water removed some elements of fluorescent gel underneath the toilet edge.

9

30

Evidence based practice

Chemical disinfectants: Controversies regarding their use in low risk healthcare environments (Part 1) Curran et al, 2019

- This paper assessed the evidence and arguments regarding the use of disinfectants for low-risk healthcare surfaces
- The 'low-risk' surface category used by MHRA includes items that will be 'in contact with healthy skin'.
- MHRA states that cleaning and drying is sufficient for low risk surfaces.

Chemical disinfectants: Controversies regarding their use in low risk healthcare environments (part 1)
 Emma T Curran, Marie Wilks and Tina Bradley
 Abstract
 It has been the number of outbreaks linked to healthcare surfaces environments and health care workers has increased significantly in recent years. This has led to the development of a new disinfection strategy, including the use of chemical disinfectants on healthcare surfaces. However, there is a lack of evidence to support the use of disinfectants on low-risk healthcare surfaces. This paper assesses the evidence and arguments regarding the use of disinfectants for low-risk healthcare surfaces. A new categorisation of low risk is proposed to provide more specific disinfection guidance.

9

31

Evidence based practice

Arguments against adding routine cleaning:

- 1) Recolonisation happens too quickly
- 2) Disinfectants damage the environment
- 3) Disinfectant present an occupational hazard
- 4) Disinfectants themselves can become contaminated and present an outbreak risk
- 5) Disinfectants are costlier than detergents
- 6) Microorganisms could develop tolerance and resistance such that disinfectant-resistant organisms emerge

9

32

The Aim of Evidence based practice

- Patient safety and quality of care
- Best practice (Evidence informed practice)
- Updated guidelines and policies
- Quality and service improvement (Product use)
- Education and training.

9

33



34

Test data: Universal test data

Please note – when comparing to competitors all GAMA tests are:

- Chemical reaction - difficult to do
- Accredited labs - or University affiliated
- Clean vs. dirty conditions - you need dirty conditions
- Sporostatic & Sporicidal
- Gama love to talk about test data.

MICROORGANISM	TEST	MICROBIAL LOG REDUCTION	CONDITION	CONTACT TIME
BACTERIA				
Aerobacter laevis	EN13227	5.63	Dirty + Dry/Wipes	10 seconds
Enterococcus faecalis	EN13227	5.42	Dirty + Dry/Wipes	10 seconds
Enterococcus faecium	EN13227	5.00	Dirty + Dry/Wipes	10 seconds
Escherichia coli ATCC	EN19816	5.74	Dirty + Dry/Wipes	10 seconds
Escherichia coli O157	EN13227	5.58	Dirty + Dry/Wipes	10 seconds
Klebsiella pneumoniae	EN13227	5.48	Dirty + Dry/Wipes	10 seconds
Methicillin resistant Staphylococcus aureus	EN13227	5.07	Dirty + Dry/Wipes	10 seconds
Pseudomonas aeruginosa	EN13227	6.00	Dirty + Dry/Wipes	10 seconds
Staphylococcus aureus	EN19816	5.30	Dirty + Dry/Wipes	10 seconds
Staphylococcus aureus (MRSE)	EN13227	5.23	Dirty + Dry/Wipes	10 seconds
MICROBACTERIA				
Mycobacterium far-bois	EN14348	6.10	Dirty + Dry/Wipes	2 minutes
YEAST				
Candida albicans	EN13204	4.00	Dirty + Dry/Wipes	1 minute
Candida kefyr	EN19816	5.40	Dirty + Dry/Wipes	10 seconds
VIROUS				
Hepatitis B	ASTM E1022	3.75	Clean	1 minute
Hepatitis C	EN14476	5.67	Dirty + Dry/Wipes	1 minute
HSV	EN14476	4.38	Dirty + Dry/Wipes	30 seconds
MRSA Giv	EN14476	4.22	Dirty + Dry/Wipes	1 minute
Rotavirus	EN14476	4.02	Dirty + Dry/Wipes	1 minute
Poliovirus	EN14476	4.22	Dirty + Dry/Wipes	1 minute
SV40 Giv 2	EN14476	4.52	Dirty + Dry/Wipes	30 seconds
Vaccinia virus	EN14476	4.05	Dirty + Dry/Wipes	15 seconds

35

Clinical evidence – GAMA study

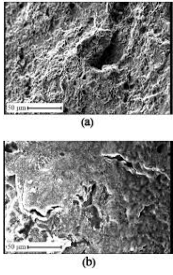
Wiping out MRSA: Effect of introducing a universal disinfection wipe in a large UK teaching hospital – University Hospitals Birmingham

- Although these studies are very difficult to do, GAMA is unique in having this level of Clinical evidence from such a prestigious IPC team and Hospital
- MRSA acquisitions across the whole organisation fell by 55%
- There was a continuing and consistent reduction, ↓ 6.3% monthly

36

Compatibility

Real experience of a hospital that switched to GAMA after damage.



A big hospital in London moved to a competitor from GAMA due to perceived cost savings. However, they **moved back to Clineell 12-18 months later** as new wipes were: damaging equipment. There was also a lack of support from the new supplier.

Why?

- Many formulas rely on amines.
- Amines are hydrocarbon derivatives of ammonia, that interacts with plastic surfaces.
- Amines have been found to cause chemical weakening of PET, PVC and rubber.
- Competitors often have a pH that is very alkaline (e.g. pH11), which gives poor material compatibility.

So please ask to see any supplier list of approved manufacturers.

37

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GAMA manufacturers approval list



38

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Honest claims – daily disinfectant wipes sporicidal?

A white paper written by Prof. Jean-Yves Maillard (a world leader on biocides and disinfectant testing)



Results for Medipla disinfectant wipes L080077748 against Clostridium difficile NCTC12209

Table 1. Average Log₁₀ reduction of Clostridium difficile spores after exposure to liquid expressed from Medipla disinfectant wipes (wt)

Initial inoculum (Log ₁₀)	1 minute	5 minutes	60 minutes
8.31	1.48	1.93	1.89

Conclusion

All control measures passed according to requirements of the EN12704. Following the modified standardised testing procedure, none of the contact times tested produced the obligatory > 2 Log₁₀ reduction in viable spores (Table 1). Contact times of 1 minute, 5 minutes and 60 minutes produced a + 2 Log₁₀ reduction in spores, 1.48, 1.93 and 1.89 respectively.

POOR NEUTRALISATION

Disinfectant products claim to be effective against Clostridium difficile spores in a significant proportion of applications. However, the disinfectant action is not immediate. Clostridium difficile spores are highly resistant to disinfection and require long contact times to be inactivated. The spores are highly resistant to disinfection and require long contact times to be inactivated. The spores are highly resistant to disinfection and require long contact times to be inactivated.

POOR PREPARATION

Disinfectant products claim to be effective against Clostridium difficile spores in a significant proportion of applications. However, the disinfectant action is not immediate. Clostridium difficile spores are highly resistant to disinfection and require long contact times to be inactivated. The spores are highly resistant to disinfection and require long contact times to be inactivated.

39


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Honest claims – Spores (C. diff) are difficult to kill. Our wipes win together!


Universal – CW200

✓ Everyday disinfectant



Peracetic Acid – CS25

✓ Higher level disinfectant **EN128**



Trusts who use Universal and Peracetic (Sporicidal)

- University College London
- Cambridge University
- Oxford University
- Guys & St Thomas
- Central Manchester University
- Kings College Hospitals
- Imperial College
- Norfolk & Norwich University
- Newcastle University
- University Hospitals Birmingham
- Southern General
- Cardiff & Vale University
- Nottingham University
- Great Ormond Street
- Southend University
- Colchester University
- Ipswich Hospitals

Trusts who use Universal

- Royal Free Hospitals
- The Royal Marsden
- Princess Alexandra
- East & North Herts
- Luton & Dunstable
- ABMU
- East Kent
- James Paget University
- Chessterfield
- Mid Yorks
- Hull
- Norfolk Community
- Queen Elizabeth Kings Lynn
- York
- Morecambe Bay
- North Bristol
- Hampshire

Trusts who use Universal

- Peterborough & Stamford
- Chelsea & Westminster
- North Tees
- Homerton University
- Brighton
- East Sussex
- South Westwickshire
- Royal United Hospitals
- Dorset Healthcare University

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40

Training that increase compliance and improves practice UK data

361 DAYS OF TRAINING NATIONALLY

- 160 days in the South and West
- 105 days in Central and East
- 96 days in North and Scotland



7894 STAFF TRAINED NATIONALLY

- 4414 staff in the South and West
- 2173 staff in Central and East
- 1271 staff in North and Scotland

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41

The GAMA package – dispensers

Encourage effective cleaning, discourage HCAs

“
Clinell Wipe Dispensers support cleaning and disinfection protocols, storing wipes exactly where they are needed.”





Pack of 50 - CUP



Pack of 50 - adhesive



Pack of 200 - wall dispenser

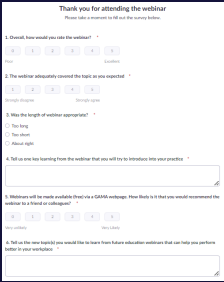
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42

Thank you

Give us feedback!
Survey will show up in the browser when you end this webinar or click the link on the follow-up email tomorrow



The screenshot shows a survey titled "Thank you for attending the webinar" with the following questions:

- Overall, how would you rate the webinar? (5-point Likert scale)
- The webinar adequately covered the topic as you expected? (5-point Likert scale)
- Was the length of webinar appropriate? (Yes/No/About right)
- Has any one been helpful from the webinar that you will try to introduce into your practice? (Text input)
- Webinars will be made available through a GMA package. How likely is it that you would recommend the webinar to a friend or colleague? (5-point Likert scale)
- Has the site helped you would like to learn from future education webinars that can help you perform better in your workplace? (5-point Likert scale)

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43
