

BAD BUGS HAVE NO BOUNDARIES

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Nightingale at Scutari

The Barracks Hospital

- 2,434 patients
 - ▣ 70% died in transit
 - ▣ 42% of cases treated died
- Frostbite, dysentery, cholera and typhus
- Built over a cesspool
- Poor ventilation



'The root of evils which have to be dealt with is the division of responsibility and reluctance to assume it'

- She took over
- Mortality rate fell to 2%

What Florence did



- Created order
 - ▣ Provided nurses
 - ▣ Rations and provisions
 - ▣ Kitchens
 - ▣ Cleaning
 - ▣ Sanitation
- Hospital design
- Nurse training
- Standards

21st century



- 24 hour service
- Constant activity
- Focus on care delivery
- Limited resources
- Some staff no longer notice
- Low value of cleaning and those who clean

- 
- What do hospital patients want and get?
 - What do care facility residents want and get?
 - What drives people to practice safely?

HOTEL



HOSPITAL WARD





“Patients rightly expect hospitals to be clean. Just like a clean hotel, a clean hospital gives a good first impression and can make a difference to how patients feel about the NHS and how they feel they have been treated. It is a physical manifestation of the health of the NHS. The message it gives spreads far beyond infection to say to patients, “You are in safe hands”.”

Towards cleaner hospitals and lower rates of infection: A summary of action
DH 2004

First Impressions



- Standards of Cleanliness = Quality of Care
- Residents, Visitors and Staff have a right to the highest standards of cleanliness.
- Those responsible for the day to day running of the home must have the knowledge and skills to manage and ensure good hygiene standards as laid out in the guidance: Infection Control Guidance for Care Homes DH (2006)

Genuine Risk



- The environment has a huge potential to increase the risk of cross infection
- Therefore a clean and safe environment is essential and is everyone's business



“There is a large body of clinical evidence, derived from case reports and outbreak investigations, which identifies links between poor environmental hygiene and the transmission of organisms causing hospital acquired infection”

Pratt et al (2001) Journal of Hospital Infection 47
S21-37

Micro-organisms



- All around us!
- Some are pathogens
 - ▣ Infection v Colonisation
- Some withstand rigours of environments
- Some survival outside of host
- Transmissibility

Survival of Organisms



- MRSA
- TB
- HIV
- Hepatitis viruses
- Clostridium difficile
- Neisseria gonorrhoeae

MRSA

Dust



Dust



- Research more than 30 years ago
- Dust reflects what is around
 - ▣ hospital ward dust in the UK is
 - patient or staff dead skin cells
 - hairs and debris from bedding and packaging
 - dried urine and faeces
- Dust particles can carry bacteria and other organisms
- Staphylococci can survive despite drying for months in dust

MRSA and the Environment

- MRSA present in the environment of 69-73% of rooms of affected patients
 - ▣ Surfaces included linen, floor, overbed tables, patients clothing & BP cuffs
- MRSA in urine or wound
 - ▣ 36% of surfaces were contaminated
- MRSA in other sites
 - ▣ 6% of surfaces contaminated

Catheters & the Environment



- Organisms causing urinary infection may be detected on the undersheet, floor and bedside chairs of patients with catheters
- What came first?

MRSA

Airborne



Daily Record

News

KILLER RAPIST HAS MRSA IN PERVS' JAIL

Oct 16 2004

Superbug scare

By Amy Devine

A NOTORIOUS murderer and serial rapist is carrying the deadly superbug MRSA in jail.

Thomas Young has been moved to the hospital wing at Peterhead prison where bosses have reminded cons to wash their hands and have placed extra soap and paper towels in its halls.

But a source at the jail, where some of Scotland's worst sex offenders are held, said: 'Inmates and staff are scared to go near the health centre in case they catch this horrible bug.'

Flowers



- Contaminated flower vases
 - ▣ The Lancet, 1973;302:568-569. A. L. Rosenzweig
- Flower vases in hospitals as reservoirs of pathogens
 - ▣ The Lancet 1973;302:1279-1281. D. Taplin, PM. Mertz
- Protecting chrysanthemums from hospital infection
 - ▣ The Lancet 1974;303:267-268. W. Howard Hughes





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Clostridium difficile

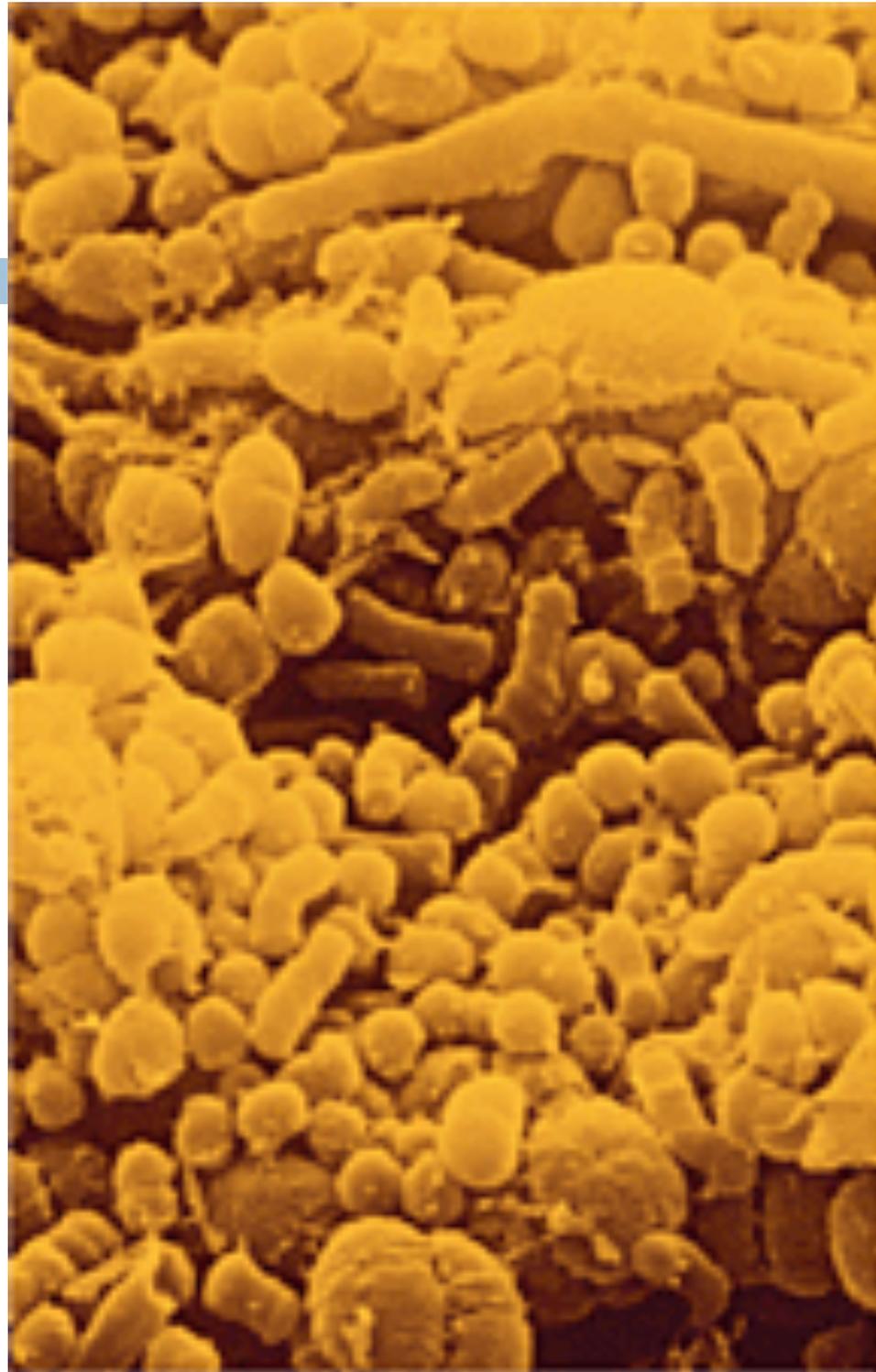




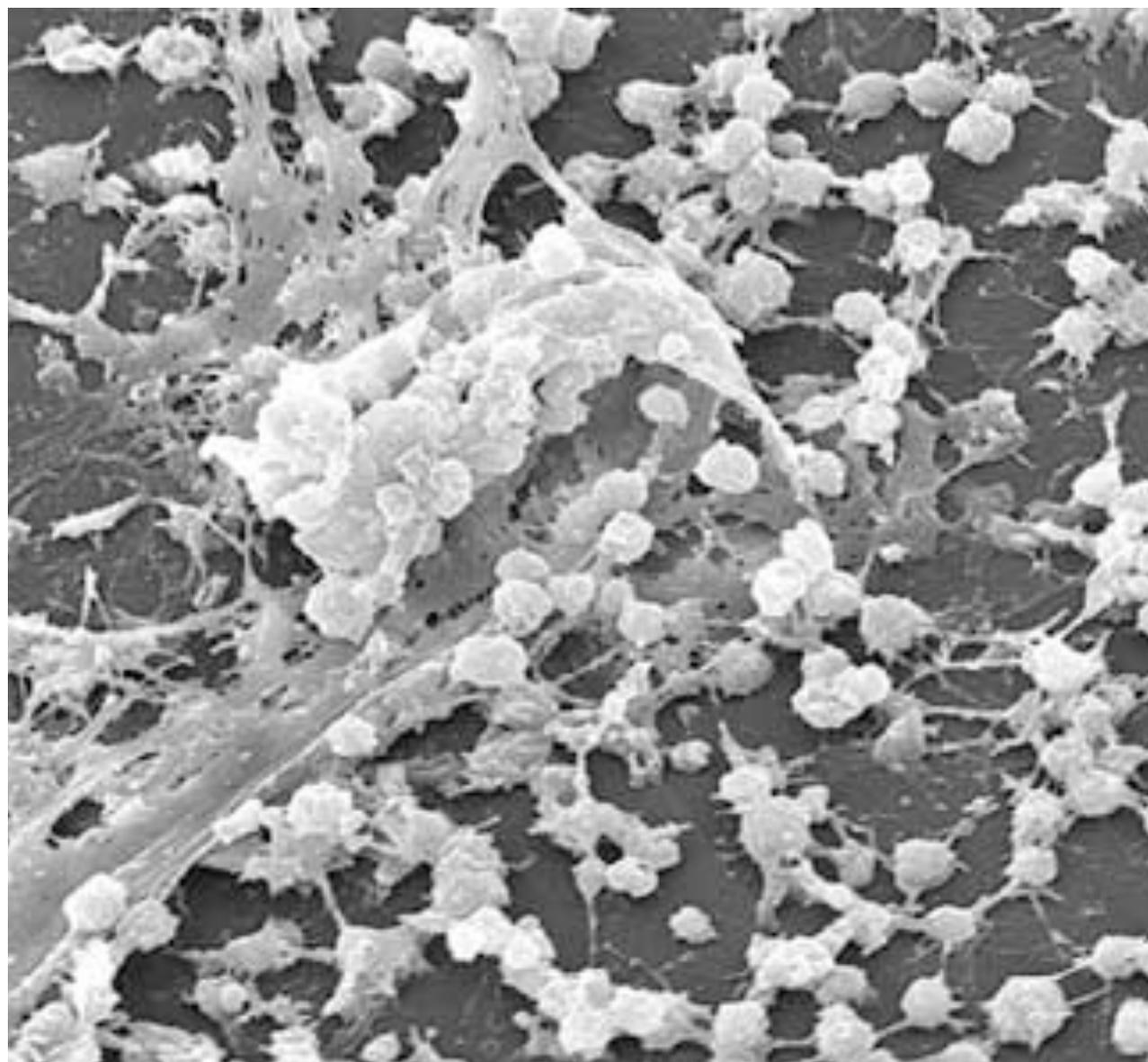


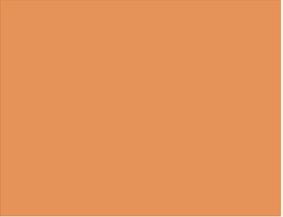


Throat



Skin





Actions





National Patient Safety Agency
National Reporting and Learning Service

Patient Environment Action Team Assessments 2009



peat
PATIENT ENVIRONMENT ACTION TEAM



Last Updated: Friday, 23 November 2007, 11:06 GMT

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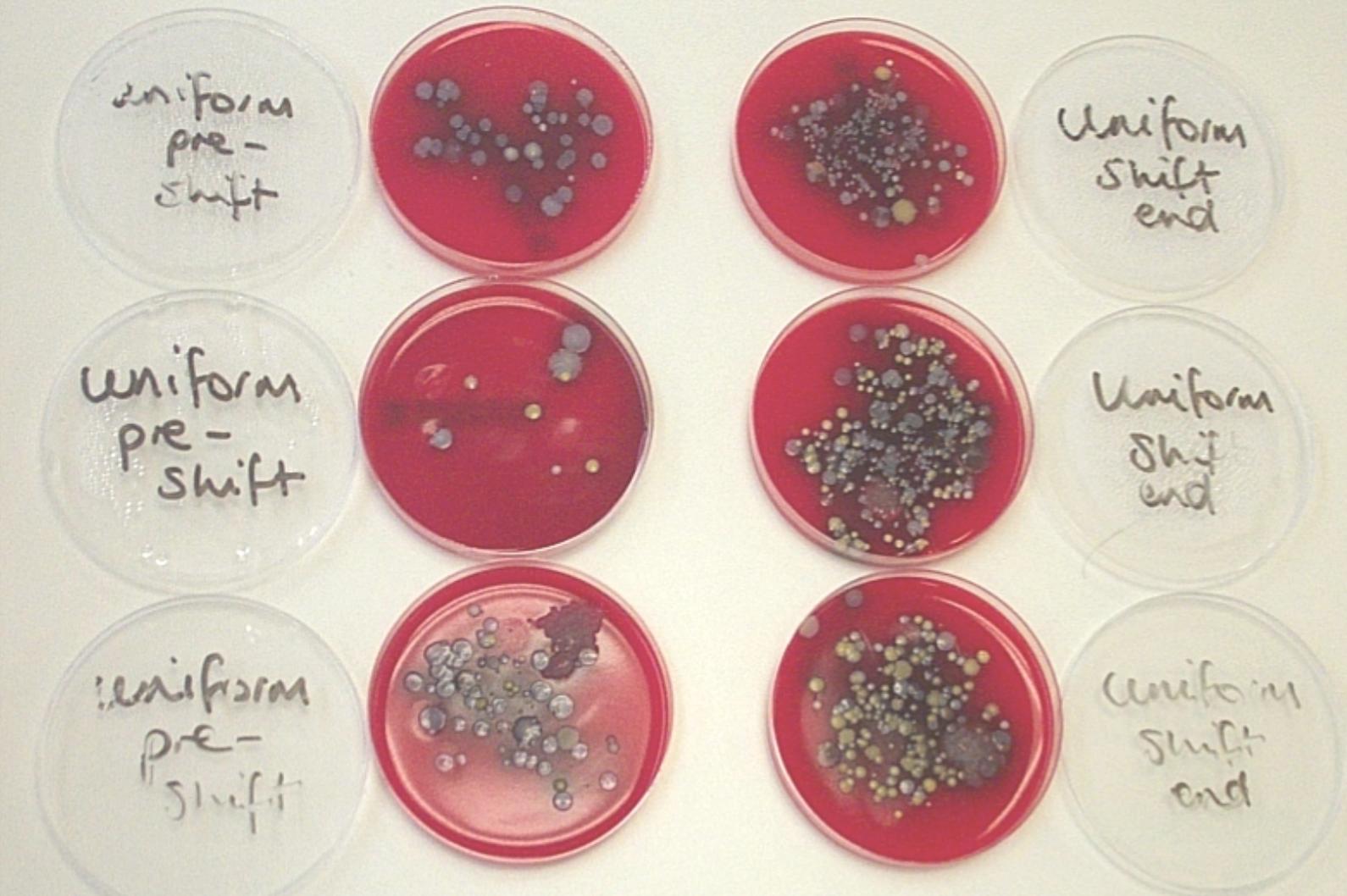
Nurse struck off for MRSA failure

A woman has become the first nurse in England to be struck off for failing to wash her hands after treating a patient with MRSA.

53, was found guilty of six allegations of misconduct by the Nursing and Midwifery Council.



Hand washing is the most effective way of battling MRSA





CAL
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UTI?
Infections with Multistix[®]

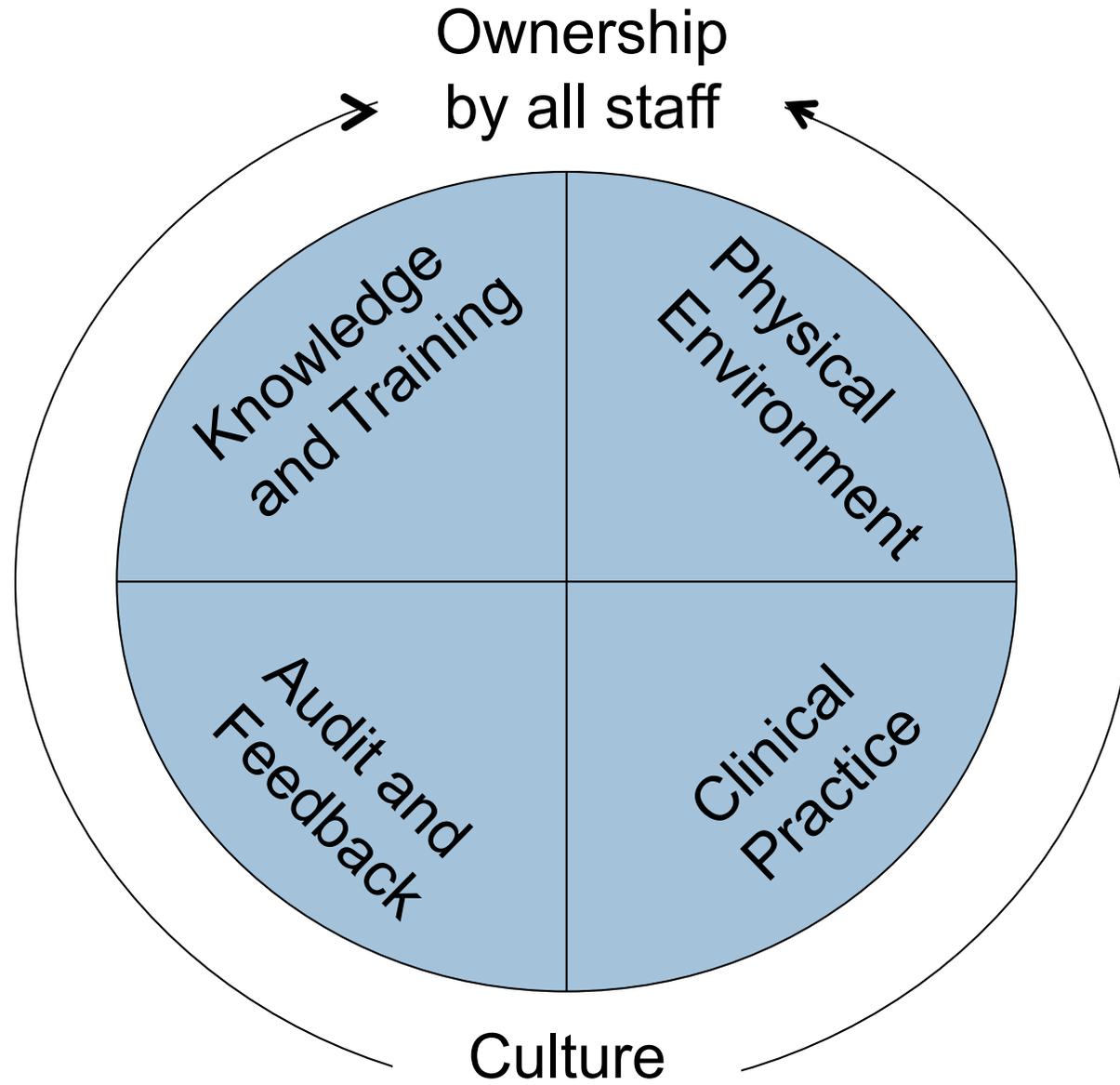
Urinalysis
Visual Appearance

Urinalysis testing

How to test



How?



Safe, clean environment – How?

- Knowledge and Training
 - Do staff know why it's important? Training programme
 - Job descriptions, staff appraisals
- Clinical Practice
 - Quality of cleaning
 - Environment, equipment, laundry
 - Clinical
 - Hand hygiene, PPE, asepsis, waste disposal
- Physical Environment
 - Homely but duty of care to ensure safety
 - Storage, easily cleanable materials, ventilation
- Audit and Feedback
 - Does it happen? Are all staff involved? Displayed to all?

MONTH: _____ WARD / DEPARTMENT _____

Standard Criteria: (e.g. Adverse occasion = dirty equipment, floor, paper posters on wall, policy not followed etc)

- Score 10: There are no adverse occasions noted
- Score 5: There are between 1-4 adverse occasions noted
- Score 0: There more than 5 adverse occasions noted.

Actions	SCORE
	1.1 Patient equip – Drip stands, wash bowls, baby baths etc. no visible signs of dirt or blood
	1.2 Electrical equip. – IV infusion pumps, pulse oximeters, thermometers, scribe aids, CTG's, computers
	1.3 Single use equipment – used correctly
	1.4 General equipment – Apron holders, glove & hand gel dispensers stocked and clean
	1.5 Medical gas equipment – suction & oxygen equipment clean and in working order
	1.6 Floors – including corners. Must be of uniform finish, polished/lowered and clean
	1.7 Walls, ceilings and doors – must be intact and clean and in good state of repair, no paper notices or tape used on walls. Door handles clean.
	1.8 Radiators and ventilation grills – dust free
	1.9 Curtains and blinds – replaced within the last 3 months
	1.10 Windows, glazing & partitions – include mirrors and partitions, no old tape, clean and good state of repair
	1.11 Surfaces – low and high, dust free
	1.12 Seating – intact, no rips, non-porous, fully washable and clean
	1.13 Bed area – include bed, cotside, mattress checked intact not soiled, locker and table (inc. underneath), castors clean
	1.14 Patient personal – items kept to a minimum
	1.15 Waste receptacles – black & yellow bins in rooms, visibly clean, footpedals working
	1.16 Patient line – all clean, protocol for cleaning between patients.
	1.17 Beverage bay/patient kitchen equipment – include protocol for cleaning ice maker, milk machine and gas water cooler, Fridges clean, temperature recorded, no out of date food, microwaves clean.
	1.18 Cleaning equipment – accessible for all staff only
	1.19 Uniforms – worn as per policy
	1.20 Crash trolley – clean and checked
	Total overall percentage achieved

1.0 Specific Cleanliness (excluding toilet and bathroom) – all areas should be visibly clean with no blood or body substance, dirt, debris or spillages. Equipment should be cleanable, and be cleaned between each patient use. Indicate in the action section areas of good practice or for improvement.



Microsoft Word Document

Before



After



Before



After





Viral Gastroenteritis



Norovirus Infection Symptoms

- Vomiting
- Diarrhoea
- Nausea
- Abdominal cramps
- Headache, muscle aches
- Fever (minority)
- Dehydration in young and elderly victims
- Up to 30% may be asymptomatic



Outbreaks



- Hospitals/Healthcare
- Hotels/Tour buses
- Schools/crèches
- Food outlets
- Trains
- Cruise ships
- War theatres
- Aircraft

Norovirus Transmission



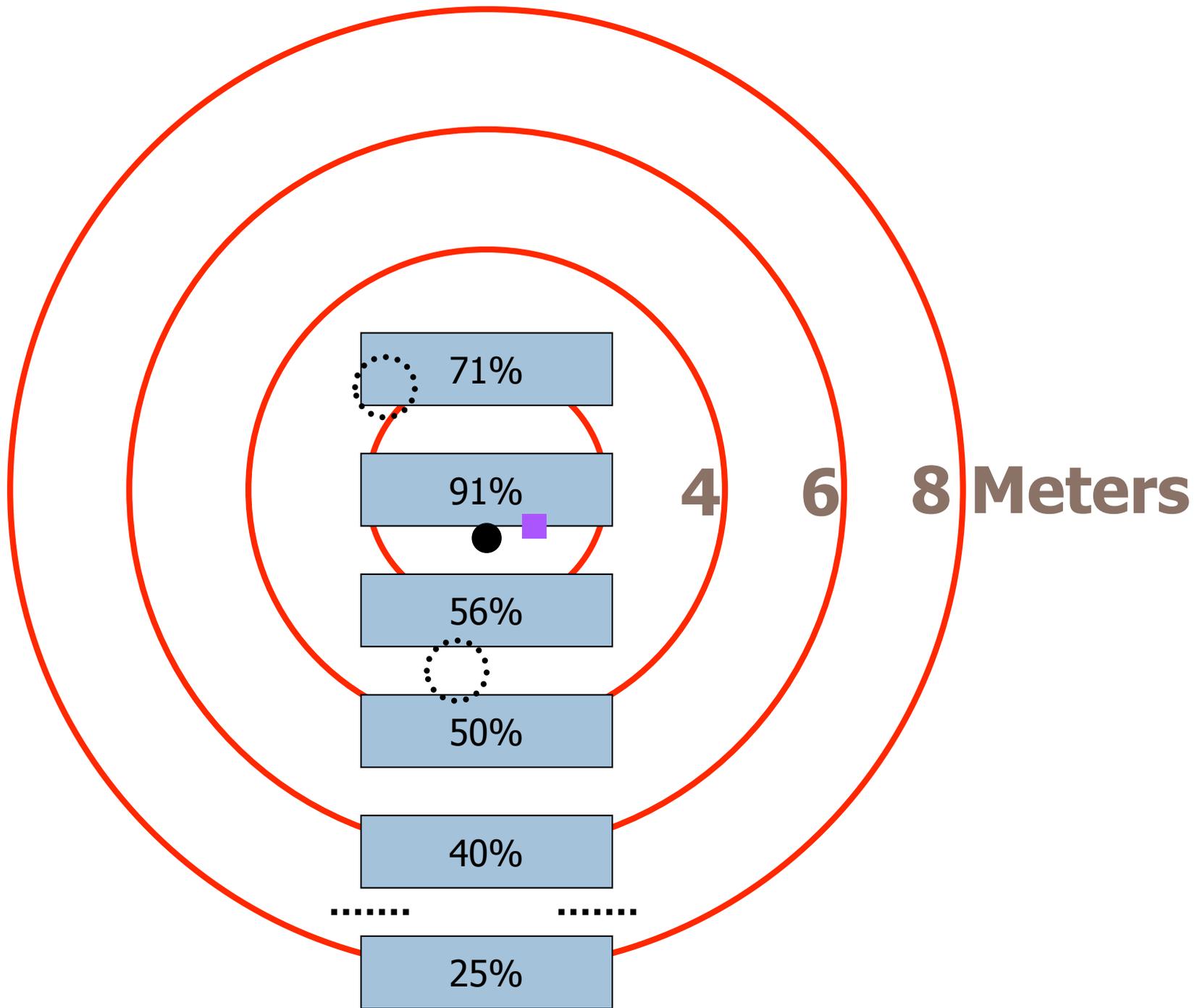
- Food (39%)
- Hands (12% “person to person”)
- Water (3%)
- Environmental surfaces
- Air (aerosolised vomit)
- 46% unknown or no data available

- MMWR 2001; 50: RR-9

Evidence for airborne transmission of Norwalk-like virus (NLV) in a hotel restaurant

PJ Marks; Epidemiol. Infect. 2000, 124: 481-487

- Hotel restaurant with 126 patrons
- Patron vomited at table
- 52 of 83 survey responders ill
 - ▣ 63% overall attack rate
- Attack rates higher at closer tables
- Consistent with airborne transmission of NLV contaminating food that was then consumed



Widespread environmental contamination with NLV in a prolonged hotel outbreak of gastroenteritis

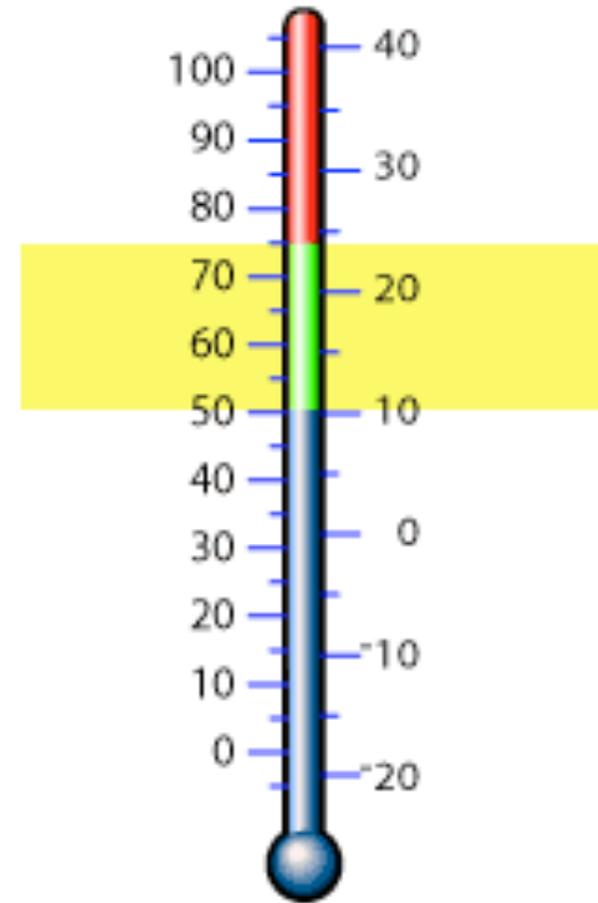
JS Cheesbrough; Epidemiol Infect 2000, 125: 93-98

- RT-PCR environmental surface testing +
 - Carpets (known vomiting) 5/8 (62%)
 - Carpets (no vomiting) 9/12 (75%)
 - Toilet rims/seats 8/11 (73%)
 - Toilet handles, taps, basins 13/39 (39%)
 - Horizontal surfaces below 1.5 m 11/29 (37%)
 - Horizontal surfaces above 1.5 m 6/12 (50%)
 - Phones, door handles, etc. 7/29 (24%)
 - Soft furnishings 2/10 (20%)
 - Total 61/144 (42%)

Inactivation of Feline Calicivirus

JC Doultree; J Hosp Infect 1999, 41:51-57

- Surface survival of dried FCV
 - ▣ 4°C, > 60 days
 - ▣ 20°C (RT), 21-28 days
 - ▣ 37°C, less than 1 day



Control Measures



- Isolate or cohort symptomatic individuals
- Enhanced hand hygiene
- Frequent use and change of gloves and aprons
- Close the doors
- Restrict transfers from affected areas
- Minimize staff movements
- Exclude affected staff for 48 hr post symptoms

HPA - Introduction to infection control in care homes - Microsoft Internet Explorer provided by South Tees Hospitals NHS Trust

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Introduction to infection control in care homes

This is a series of seven short films. These are designed to provide staff with an introduction to infection control.

These seven short films include:

- ▶ [Preventing Infection](#)
- ▶ [Hand Hygiene](#)
- ▶ [Person Protective Equipment](#)
- ▶ [Prevention of exposure to Blood and Body fluids](#)
- ▶ [Clinical Equipment](#)
- ▶ [General Equipment](#)
- ▶ [Management of Laundry](#)

Infection control nurses have provided expert advice throughout filming and production of the training resource. Every effort has been made to ensure that the advice provided is based on the best available evidence while providing advice that can be easily adopted and put into practice. The DVD can be used to supplement existing infection control training programs for care homes. It will also provide practical assistance to help comply with the Department of Health Code of Practice as and when it is issued.

This valuable resource can be used to supplement existing training programs. It will also provide practical assistance to help comply with the Department of Health Code of Practice as and when it is issued.

Printer friendly page (opens new window)

Start 2 Mi... 2 Wi... HPA -... Micro... Internet 10:02

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Only The Dog Knows For Sure

and Finally...

- Over the next few years we are likely to be challenged by new 'superbugs'
 - ▣ ESBLs
 - Good survival in the environment
- Global Pandemic Influenza
- Nothing can ever be perfect
- Cleanliness is next to Godliness..
- Together Everyone Achieves More