



Safe Patient Care "Keeping our Residents Safe"

2016
Use Standard Precautions for ALL Residents at ALL times #safepatientcare

Keeping our Residents Safe

- Infection Prevention and Control developing over the last 40 years
- Basic principles well established

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



Background

- 1873: [Nursing is] 'employment of the strictest decency, cleanliness and morality' (Rumsey, 1873)
- 1883: 'A great part of good nursing consists in preserving cleanliness' (Board of Superintendence of Dublin Hospitals)
- 1934: Hérold Hospital in Paris appoints Professor Robert Debré, as a 'whole-time specialist devoted to the prevention of hospital infections'
- 1956: 'The growing menace of antibiotic-resistant organisms [is] creating endemic conditions in hospitals' (H Starkey 'Control of staphylococcal infections in hospitals' The Canadian Medical Association Journal. 1956, 75 (5), pp. 371-380)
- 1959: Appointment of Miss EM Cottrell as the first 'whole-time infection control sister' at Torbay Hospital
- All of this work is in acute hospitals, work relating to longer term care facilities lags behind

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



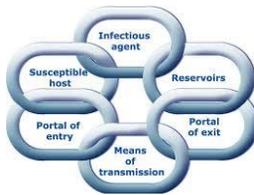
Long Term Care Facilities (LTCF)

- Particular issues, as most research done in acute hospital settings and results do not easily transfer to LTCF
- LTCF are essentially the client's home and this must be respected
- They also deliver nursing care to an ever increasing level of complexity, which must be done as safely as possible
- Access to Infection Prevention and Control (IPC) advice is frequently limited
- Risk assessment of situations is critical in how to break the so called "Chain of Infection"

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



Chain of infection: Six links



September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



1. Pathogen

- Virus/Bacterium: the disease causing organism
- Break this link by:
 - a. Vaccination (e.g. influenza)
 - b. Public Health measures (e.g. Pasteurisation, chlorination, environmental cleaning)

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



2. Reservoir

- Environment required by organism for survival.
- Person (infected/colonised), animal
- Natural environment (soil/water)

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



Reservoir

- Break this link by:
 - a. Detection (screening/diagnostic sampling) and eradication of organism by e.g. antimicrobials, decolonisation
 - b. Eradication of rodent/insect reservoirs
 - c. Standard precautions
 - d. Isolation (with appropriate precautions)

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



3. Portal of Exit

- If reservoir is human then portal of exit is e.g.
 - a. Blood/body fluids
 - b. Saliva/nose/throat discharges
 - c. Faeces

This link is broken by:

- a. Care with blood/body fluids etc.
- b. Masks/PPE when indicated

i.e. **Standard Precautions**

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



4. Means of Transmission

- Direct transmission
from infected host e.g. influenza.
(Does not necessarily imply physical contact)
- Indirect transmission
i.e. carried by vector, e.g. person, animal

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



Means of Transmission

- This link is broken by:
 - a. Hand Hygiene
 - b. Avoiding contact with infected secretions etc.
i.e. standard precautions +/- isolation with appropriate precautions

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



5. Portal of entry

- Inhalation
- Ingestion
- Injection i.e. through skin, mucous membranes
- Contamination of wounds etc.

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



Portal of entry

- This link is broken by:
 - a. Standard precautions
 - b. Appropriate PPE when indicated

Similar precautions as for Portal of Exit

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



6. New Host

- Once in new host severity of infection in variable depending on:
 - a. Host factors. i.e. immune system, predisposing illnesses (e.g. diabetes), medications
 - b. Organism factors. i.e. pathogenicity of the organism and infecting dose

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



New Host

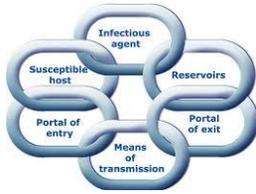
- This link is broken by:
 - a. Immunisation
 - b. Health promotion
 - c. Appropriate medical treatment

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



Chain of infection: Six links



September 2016

Use Standard Precautions for ALL Residents at ALL times
#safePatientcare



Chain of infection: important issues in control of infection

- Pathogen: vaccination, clean environment
- Reservoir: diagnosis/screening, treatment, standard precautions +/- isolation
- Portal of Exit: standard precautions
- Means of Transmission: hand hygiene, standard precautions
- Portal of entry: standard precautions
- New Host: immunisation, treatment

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safePatientcare



Themes

- Standard Precautions (inc. Hand Hygiene)
- Environmental cleanliness
- Vaccination (NB influenza)
- Screening/decolonisation (for specific purpose)

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safePatientcare



Infections in LTCF

- Previously few data on infections in LTCF
- Healthcare-Associated Infections and Antimicrobial Use in Long-Term Care Facilities (HALT)
- European point prevalence survey 2010, 2011, 2013, (2016)
- Latest results May 2013

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



HALT 2013: Prevalence Rates

- 9318 residents of 190 LTCFs of various types were surveyed
 - National prevalence of healthcare associated infection **4.2%**
- Palliative Care 18%
 LTCF <12 months 8.3%
 Rehabilitation 7.8%
 Mixed >12 months 6.1%
 Mental Health >12 months 4.3%
 GN >12 months 4.2%
 Intellectual disability 2.2%
 Physical disability 0.0%

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



HALT 2013: Types of Infection

- Respiratory Tract Infection most prevalent **1.9%** of all residents
- Of these:
 - 68% Lower Respiratory tract Infection
 - 23% URTI/common cold
 - 8% Pneumonia
 - 2% Flu like illness

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



HALT 2013: Types of Infection

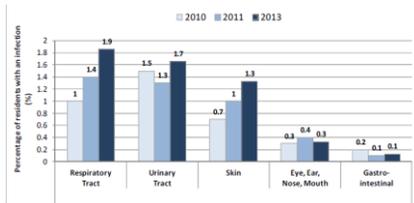
- Urinary Tract Infection
 - 1.7% of all residents
 - 33% were microbiologically confirmed
- Skin Infections
 - 1.3% of all residents
 - 94% of these categorised as cellulitis

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



Comparison to previous HALT studies



September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



HALT 2013:Antimicrobial Use

- 9.8% of residents on an antimicrobial (>900)
- Diagnostic sample sent in 27% of these
- A significant number of patients were on antibiotics for prophylaxis

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



HALT 2013: antimicrobial resistance

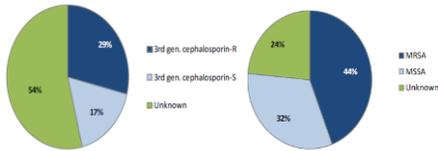
- At least 29% of *E. coli* isolates were resistant to third generation cephalosporins.
- NB suggests extended-spectrum β actamase (ESBL) production
- No CRE were detected

- At least 44% of *Staph. aureus* isolates were strain of MRSA

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



Resistance rates: *E. coli* and *Staph. aureus*



September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



How do these resistance rates compare with hospital samples?

- February 2016 CUH figures
- Enterobacteriaceae (mainly *E. coli*) percentage resistance

Antibiotic	Hospital (%res)	Community (%res)
Co-amoxyclav	24	23
Amoxicillin	63	60
Cephalexin	15	12
Ciprofloxacin	17	11
Nitrofurantoin	15	8
Trimethoprim	33	30

September 2016 Use Standard Precautions for ALL Residents at ALL times #safepatientcare



Antimicrobial resistance: considerations

- Patient/therapeutic issues
- Population issues

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



Antimicrobial resistance: should we be worried?

- It is increasing within each antibiotic class
- It is extending to new antibiotic classes
- It is mediated by increasingly complex mechanisms within the organism
- It may be transferred from one species of bacterium to another
- It reduces antibiotic choice and may even remove the option of antibiotic treatment
- It needs to be seen in the context of Infection Prevention and Control in the broad sense

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



No last resort?

• **An Inevitable Invasion -- When a Last-Resort Antibiotic Is Not an Option: mcr-1 Plasmid-Driven Colistin Resistance**

(issued by USA Centers for Disease Control and Prevention June 13th 2016)

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare



Keeping our residents safe

- Standard Precautions for ALL residents at ALL times (Hand and Environmental hygiene)
- Resistant infections are a problem in community settings as well as hospitals. Judicious use of antibiotics, avoiding use of prophylactic antibiotics
- Vaccination (influenza)
- Maximise available resources

September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare





September 2016

Use Standard Precautions for ALL Residents at ALL times
#safepatientcare