Approaches to eLearning for Infection Control

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Infection control training challenges

- Wide geographical dispersal of staff and facilities
- Governance, regulatory and accreditation requirements for documented training at orientation and thereafter
- Emerging credentialing requirements - eg. Hand hygiene, invasive device care
- Availability of educators; availability of staff for training
- Need for different levels and types of training
  - clinical, non-clinical
  - practical/theory
  - literacy and language barriers
- Issues with engaging/reaching medical staff
- Translating education into behaviour change!

‘e-learning’

- Advantages:
  - Enables distance learning at time that suits person
  - Ability to take up where one has left off
  - Can be designed to appeal to several different learning styles
  - Often used conjunction with face-to-face teaching and practical instruction (skills labs) - blended approaches,
- E-Learning pioneer Bernard Luskin: the "e" should be interpreted to mean exciting, energetic, enthusiastic, emotional, extended, excellent, and educational!

Examples

- Australian Commission on Safety & Quality in Healthcare
  - Hand Hygiene Australia package
  - Infection control practitioner training package
  - Donning and doffing of respiratory personal protective equipment (video)
- Central line insertion - CEC, NSW
- Intuition (UK) www.intuition.com NHS, UK
  - Infection control training
  - Sterilisation and disinfection (decontamination) training
  - Vascular access device
  - Urinary catheter insertion and care
- Antibiotic stewardship
  - Scottish PAUSE site http://www.pause-online.org.uk/
  - Generic prescriber training (Manchester)
  - Specialist modules - ICU - CEC, NSW
  - courses funded by Gaviis Foundation

Hand hygiene - www.hha.org.au

What is Hand Hygiene?

Hand Hygiene is a general term that describes the washing of the hands or any other method that reduces the number of microorganisms on hands.

Hand hygiene is the single most effective method of reducing the transmission of infection.

Section A: Questions

A1. You should perform Hand Hygiene:

- Before and after patient contact
- Before and after removing any patient contact barrier
- Before and after donning protective equipment
- Before and after removing protective equipment
- After patient contact

A2. Why is Hand Hygiene important?

- It reduces the transmission of microorganisms that cause disease
- It reduces the transmission of microorganisms that cause death
- It reduces the transmission of microorganisms that cause disability
- It reduces the transmission of microorganisms that cause discomfort
- It reduces the transmission of microorganisms that cause financial losses

A3. Why should you perform Hand Hygiene?

- To reduce the transmission of microorganisms
- To reduce the transmission of microorganisms that cause disease
- To reduce the transmission of microorganisms that cause death
- To reduce the transmission of microorganisms that cause disability
- To reduce the transmission of microorganisms that cause discomfort
- To reduce the transmission of microorganisms that cause financial losses
- To reduce the transmission of microorganisms that cause hospital admissions

Online Learning Package

- Hand Hygiene Australia
- Infection control training
-Central line insertion - CEC, NSW
- Intuition (UK) www.intuition.com NHS, UK
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Hand hygiene - www.hha.org.au
When should I perform Hand Hygiene?

Hand hygiene should be performed regularly by healthcare workers during the course of a normal working day. Hand hygiene should be habitual for all healthcare workers.

Some examples of when to perform hand hygiene:

- Before and after touching a patient, including
  - Before and after a procedure
  - After contact with a potentially infected body fluid
  - After removing a contaminated body fluid to a sink
  - After touching a patient’s environment once
  - Before and after glove removal
  - As you enter and leave a patient care area
  - Hands are visibly soiled (soap and water)

Hand hygiene is considered when correct:

- When soap and water are available
- When soap and water are not available
- When alcohol-based hand rub is available
- All of the above

Section D - Questions

1. Why should alcohol rubs not be used to clean hands?
- They can kill microorganisms (not viruses)
- They can cause pain
- They can be an obstacle
- All of the above

2. Why is alcohol rub not recommended as work?
- It can kill
- It may irritate
- It may irritate
- All of the above

How to perform Hand Hygiene:

- To remove shoes, jewelry, and/or contact lens

- To soap and water

- To soap, water, and alcohol-based hand rub

- All of the above

Section E - Questions

1. What is the most effective product to use for hand hygiene?
- Soap and water
- Soap and water
- Alcohol-based hand rub
- All of the above

2. What should you use the alcohol impregnated wipe or cleaning wipes on?
- The soles
- The bottom of the foot
- The infected area
- All of the above

Central Line Procedure

Introduction

Central lines are inserted to maintain a line of communication with the patient. They are inserted through the internal jugular vein, subclavian vein, or internal carotid artery. The line allows for administration of fluids, medications, and nutrients. Central lines are associated with several complications, including infection and clotting.

Section A - Questions

1. What should you do after inserting a central line?
- Infection
- The risk of bleeding and clots
- All of the above

Section B - Questions

1. When should you use alcohol-based hand rub?
- After contact with a patient
- After contact with a patient
- After contact with a patient
- All of the above

Section C - Questions

1. What is the best method for performing a central line?
- Use alcohol impregnated wipe
- Use alcohol impregnated wipe
- Use alcohol impregnated wipe
- All of the above
Central Line Procedure

Infusate Insertion Site with Local Anesthetic

- Use 1% lidocaine, if tolerated well and no evidence of allergy at the injection site (also can use prilocaine 2% cream)
- Insert the needle slowly along the perpendicular to insertion axis (this may be reversed in radiolucent wounds)
- Infiltrate the surrounding area using the local

NICE: standard treatment

Attention to barrier: Use appropriate barrier allowing access to insertion

To measure of management of the infection and clinical outcomes

To effect

To video

NHS Core Learning Unit

Infection Control eLearning Programme

View video here!

IHAS Infection Control Working Group

NHS Core Learning Unit

Developing the programme

Design Process

Phase 1 Phase 2 Phase 3 Phase 4

Develop course content

Storyboard

Build eLearning programme

Adapt for face-to-face format

Review and sign-off

Review and sign-off

Review and sign-off

Review and sign-off

Centrally-inserted central line-associated blood stream events

Expert Reference Group

- Department of Health
- ICNA
- HPA
- MHRA
- Association of Domestic Managers (ADM)
- Public Health Environment Medical Group

- NPSA
- Business Services Association (BSA)
- NHS Education for Scotland
- School of Biosciences, Exeter University

Clinical eLearning Course
Non-clinical course (eLearning and face-to-face)

Course 1: Principles of Infection Prevention
- Extension program aimed at non-clinical staff only.
- Blended learning and face-to-face program.

Module 1: Hand Hygiene
- Topic 1: Hand Hygiene and Infection Control
- Topic 2: When to Clean Your Hands
- Topic 3: How to Clean Your Hands
- Topic 4: How to Prevent Skin Infection

Module 2: Personal Protective Equipment (PPE)
- Topic 1: Selection of PPE
- Topic 2: Gloves
- Topic 3: Gowns
- Topic 4: Hair and Respiratory Protection

Module 3: Waste and Sharps
- Topic 1: Category of Waste
- Topic 2: Disposal of Waste
- Topic 3: Epiflex and Sutures

Module 4: Environmental Cleaners
- Topic 1: Techniques of Environmental Cleaners
- Topic 2: Dealing with Spills
- Topic 3: Safe Handling of Laundry

Course 3: Putting Theory into Practice
- Developed as a non-clinical staff only. Focus on the framework only to ensure that learning is put into practice in participants’ work contexts.

Key Benefits for Infection Control Program managers

- Standardised, formalised training allows all staff to have access to training materials
- It is accredited by the ICNA, Christine Beasley and the DH
- It is certificated and can be included in portfolios
- Helps organisations meet key compliance criteria within Infection Control
- Saves ICN time in terms of:
  - Developing generic training packages
  - Staff training (staff can study anywhere they have access to a computer)

Benefits of the Programme

Learners:

- It’s addictive
- Interactive
- Easily accessible
- Acknowledges differing learning levels
- Study in bite-sized chunks
- Quick and easy to keep track of learning
- Printable summaries; additional learning activities provided; extensive glossary

Reporting capability

- Individual scores on tests within course modules accessible in the Aust. implementation

Australian Pilot 2008

- New introduction and endorsement recorded by the Chief Exec of the Australian Commission on Q&S in Healthcare; UK content not otherwise modified
- WA: Entire Rural health region
- NSW: Hunter New England Health : Dialysis services and two smaller district hospital sites
- 1200 users in total across all staff cadres
- eLearning and face-to-face materials trialled; pilot completed in November

Evaluations: eLearning

- Completed surveys by 134 Clinical users, 51 Non-clinical course users
- ‘Course was well-designed and easy to follow.’
Course navigation

Time investment

Work-practice improvement perception

Quizzes and activities

End of learning assessment

Perception of how learning will impact on patient and staff safety
NHS eLearning comments about course

- Complaints re UK-specific content/setting (several)
- The repetition certainly re-enforced information, the quizzes were very helpful in keeping focus on the particular section...
- It is a very useful learning tool and can be taken at a persons own pace.
- A good course - could be done in small chunks of time. Easy to navigate. Didn't get 100% on all assessments so wasn't over-easy!!
- Excellent tool to reinforce need for consistent infection control measures.
- Good use of statistics to emphasize the issues enjoyed doing the course would like to continue to go back so as to keep learning
- I feel all staff need to do this course to remind them of how important it is to prevent the spread of infection
- Well put together
- As I live in a remote location, it is often difficult to attend course away

Where next with eLearning in healthcare?

- Transferrable electronic training/certification records for all staff
- Embed eLearning training programs within complete online learning environment (e.g. Moodle, Blackboard etc)
- Track/integrate other face-to-face training and assessment in to same record
- Auditable compliance with training requirements

Australian plans

- Australian revised ICG to be released late 2009
  - Plan to develop national training tools for HCWs on infection control
- Antibiotic stewardship strategy
  - Training materials for prescribers and pharmacists envisaged

eLearning 2.0

- Collaborative approaches
- Asynchronous vs synchronous activities
  - Blogs, wikis, bulletin boards
- Screencasts
- Learning modules – merlot
- increased emphasis on social learning and use of social software such as blogs, wikis, podcasts and virtual worlds such as Second Life

Microbial literacy

- Primary, secondary approaches
- Standardise training across tertiary health sciences streams
- Community education
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• Intuition:
  – Brian O’Malley, Clara Clerkin

References

Merlot: expanding central repository for online education with peer review-
www.merlot.org

www.hicsiganz.org - send us your own examples or suggestions to share with others! email Michelle Taylor at hicsig1@gmail.com

Thank you!

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