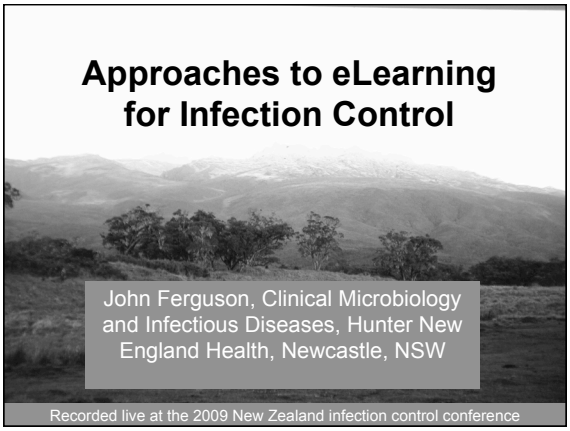
Approaches to eLearning for Infection Control



John Ferguson, Clinical Microbiology and Infectious Diseases, Hunter New England Health, Newcastle, NSW

Recorded live at the 2009 New Zealand infection control conference

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 in to behaviour change!!

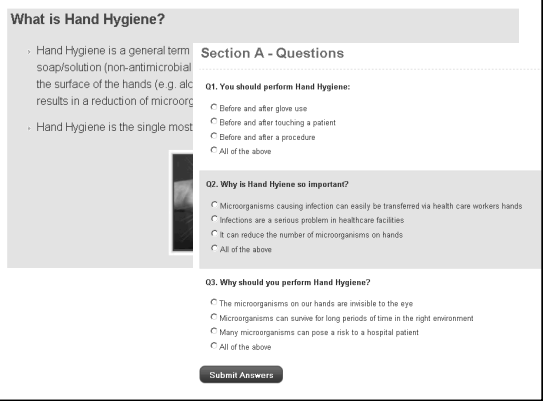
‘e-learning’

- 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
- Low resource settings: http://www.engenderhealth.org/ip/index.html courses funded by Gates Foundation

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 a "habit" for all healthcare workers.

Some examples of when to perform Hand Hygie

- **Before and after touching a patient, including**
- **Before and after a procedure**
- **After actual or potential contact with body fluid**
- **If moving from a contaminated body site to a c**
- **After touching a patient's environment even if**
- **Before and after glove use**
- **As you enter and leave a patient care area**

If hands are visibly soiled use soap and water

If hands are visibly clean use the alcohol based h

Section B - Questions

Q1. When should you not use Alcohol Based Hand Rub?

- On the weekends
- Before putting on gloves
- If your hands are visibly soiled
- If you forget

Q2. Which of the following products can be used for Hand Hygiene?

- Antimicrobial soap and water
- Soap and water
- Alcohol based hand rubs
- All of the above

Q3. What is the most efficient product to use for Hand Hygiene?

- Bar soap and running water
- Liquid soap and running water
- Alcohol Based Hand Rub
- Running water

How to perform Hand Hygiene:

Remove excess jewellery first, then

- **If hands are NOT visibly soiled:**
  - **Use Alcohol Based Hand Rub**
- **If hands are visibly soiled**
  - **Use Soap & Water:**

Q1. What is the first step for performing a correct hand wash?

- Wet hands with water then apply soap product
- Apply soap product then wet hands
- Use alcohol based hand rub
- Wipe hands on trousers

Q2. Alcohol Based Hand Rubs should ideally be found on:

- On the foot end of patient beds
- In high traffic public areas
- Entrance to wards, clinics & departments
- All of the above

Q3. If an adequate amount of Alcohol Based Hand Rub is applied how long should it take to correctly perform Hand Hygiene?

- 5 seconds
- 60 seconds
- 15-20 seconds
- 2 minutes

Gloves

- Gloves do not replace the need for Hand Hygiene

Nailing the message home:

- Artificial, painted & chipped nails should not be worn in clinical areas as they can harbour microorganisms

Your skin

- It is i nails
- Chaffed & cracked hands can lead to increased microorganism carriage
- To pro
- Ring
- Rem
- Jewe tear
- When just a l
- Jewe Hygi
- Reme micro

Burning facts

- Soaps and detergents can cause dryness and damage to skin
- Allergy to Alcohol Based Han skin, report your concerns to
- Healthcare Workers with derm Rub. This is because of smal regularly.
- A Dermatology opinion may potential reallocation of duties

Section D - Questions

Q1. Why should artificial nails not be worn in clinical areas?

- They can harbour microorganisms (often unseen)
- They can tear patients skin
- They can pierce gloves
- All of the above

Q2. Why is jewellery not recommended at work?

- It may get lost
- It may inhibit your ability to correctly perform Hand Hygiene
- It may make the patients jealous
- It may get dirty

"Clean between"

A "Clean Between" program will complement any Hand Hygiene program as it:

- Minimises th from hospital
- Aids the sust program

The components program are:

- All non critic needs to be
- If equipment water should

Safety facts

Absorption

- Studies have demonstrated minimal rates of cutaneous alcohol absorption
- You **cannot** absorb enough alcohol through your skin to lose you driver's license

Fire

- The overall risk of fires associated with Alcohol Based Hand Rub is extremely low
- Consult Material Safety Data Sheets, local Occupational Health and Safety, and HHA guidelines for product placement

Ingestion

- Ingestion is unlikely as
- The risk of poisoning i accidental ingestion

Splashes

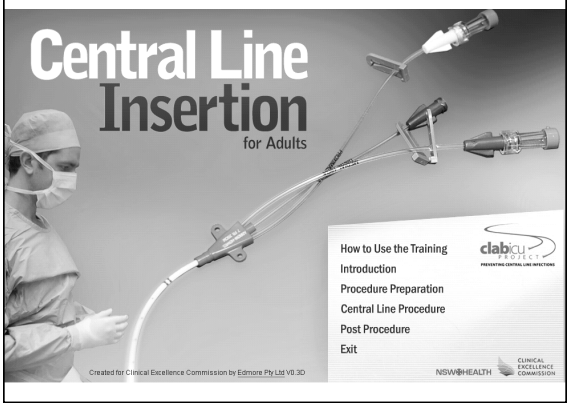
- Product should be pla
- If a splash occurs **don**

Chil

Section E - Questions

Q1. What should you use the alcohol impregnated wipes or cleaning wipes on?

- BP cuffs
- Patients slides
- ID tags
- All of the above



Central Line Procedure

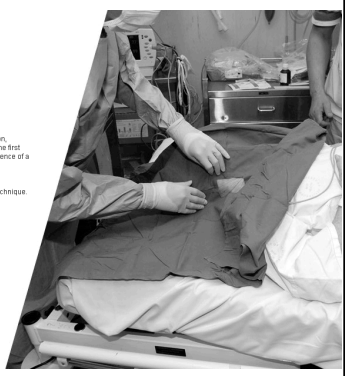
Introduction

There are a number of options for insertion of central lines:

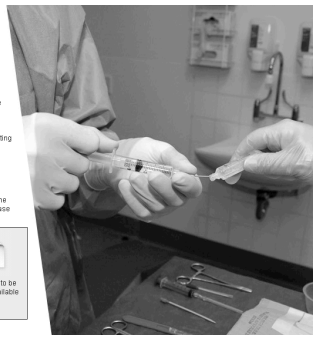
- landmark assisted insertion (blind)
- ultrasound confirmation of vessel prior to patient preparation, followed by blind insertion (this is the same technique as the first option except visualisation). Visualisation will confirm presence of a vessel and its patency is an advantage.
- real time ultrasound with guided insertion.

The first steps in the lesson will discuss the blind insertion technique. Following this the ultrasound technique will be introduced.

Click Next to continue.



Central Line Procedure



Infiltrate Insertion Site with Local Anaesthetic

- Using 23 gauge needle, raise a skin weal of local anaesthetic at the proposed insertion site. (The weal should extend to affect the area where the line is expected to be sutured).
- Insert the needle deeper along the planned path of insertion, aspirating as you go, to avoid inadvertent intra-vascular administration.
- Inject the remaining volume along the planned tract.

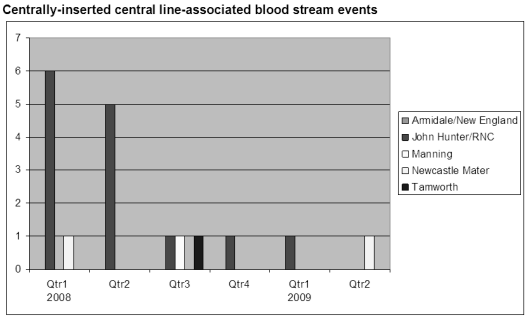
NOTE: Ultrasound guided insertion allows visualisation of the tract.

Allow time for the anaesthetic to take effect before attempting central line insertion. The volume of anaesthetic and the infiltration time will increase the effect.

Volume
There are limits to the volume of local anaesthetic that may be administered. Between 5 and 20mL of 1% lignocaine is commonly used for central line insertion.

NOTE: The CVC pack available on statewide tender has drug labels to be applied to syringes to minimise risk of administration error. If not available consider systematic approach choosing different syringe sizes for different fluids.

Centrally-inserted central line-associated blood stream events



Infection Control eLearning Programme

View video here!

IHAS Infection Control Working Group

NHS Core Learning Unit

INTUITION

Expert Reference Group

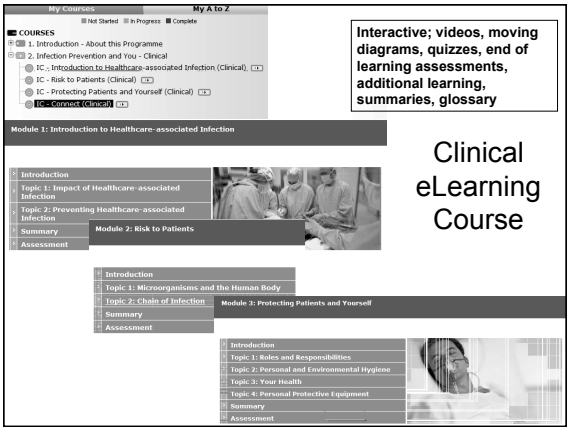
- Department of Health
- ICNA
- HPA
- MHRA
- Association of Domestic Managers (ADM)
- Public Health Environment Medical Group
- NPSA
- Business Services Association (BSA)
- NHS Education for Scotland
- School of Biosciences, Exeter University

INTUITION

Developing the programme

Design Process

Phase 1	Phase 2	Phase 3	Phase 4
Develop source 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



Interactive; videos, moving diagrams, quizzes, end of learning assessments, additional learning, summaries, glossary

Clinical eLearning Course

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

Course 2 - Principles of Infection Prevention
Extension programme aimed at non-clinical staff only; e-learning and face-to-face formats

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 Irritation

Module 2: Personal Protective Equipment (PPE)
- Topic 1: Overview of PPE
- Topic 2: Gloves
- Topic 3: Aprons
- Topic 4: Face, Eye and Respiratory Protection

Module 3: Waste and Sharps
- Topic 1: Categories of Waste
- Topic 2: Disposing of Waste
- Topic 3: Injuries and Spillages

Module 4: Environmental Cleanliness
- Topic 1: The Importance of Environmental Cleanliness
- Topic 2: Dealing with Spillages
- Topic 3: Safe Handling of Laundry

Course 3: Putting Theory into Practice
Aimed at non-clinical staff only; face-to-face format only to ensure that learning is put into practice in participants' own context

Session 1: Policies and systems in the workplace for preventing and controlling infection

Session 2: Identification and management of infection risk
Session 2 contains eight video clips showing average/ poor practice in terms of infection control and eight corresponding clips showing better practice. Learners are encouraged to assess the risks on the video and then apply the concept of risk assessment to their own work area. The risk assessment in Session 2 may be linked to accreditation via the OCN Level 1 unit in Controlling Infection.

Benefits of the programme

NHS

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

NHS

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

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

NSW HEALTH
Department of Health
AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

Reporting capability

SELECT ANOTHER GROUP | SUMMARY DETAILS

Report: User Summary
Group Name(s): 1. Dialysis-Wansey NSW
Number of Users: 2

In order to print this report, please use the Print option on your browser.

Click on **P**erformance for a list of the tutorials that the user has studied. The last study date, total study time, percentage of content viewed, score and completion status for each tutorial is also displayed.

Click on **A**ctivity for a detailed report on the user activity including the start and finish times for each study session. This report can also generate a specific date range.

Select a letter from the A-Z index to move quickly to a name.

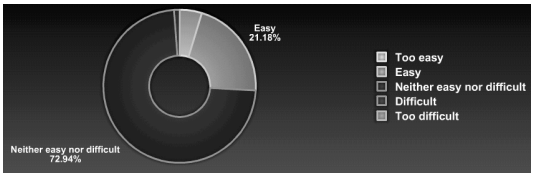
All A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Name	Username	Last Study Date	Modules	Study Time	Report Type	
Adams, Kelly	Kadams1	04 Sep 2008	5	1 hr(s) 25 min(s)	A	P
Bratt, Patricia	pbratt	19 Sep 2008	5	1 hr(s) 28 min(s)	A	P

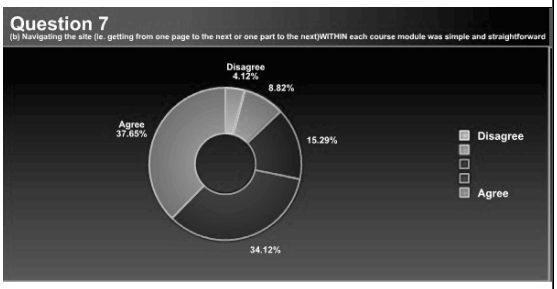
- Individual scores on tests within course modules accessible in the Aust. implementation

Evaluations: eLearning

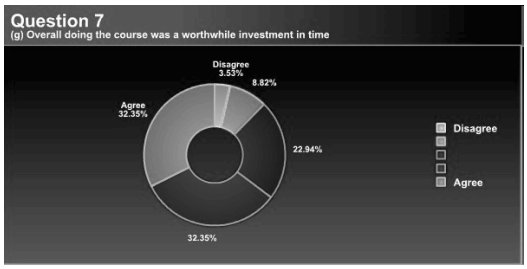
- Completed surveys by 134 Clinical users, 51 Non-clinical course users
- 'Course was well-designed and easy to follow:'



Course navigation

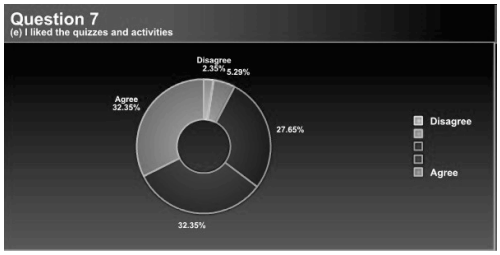


Time investment

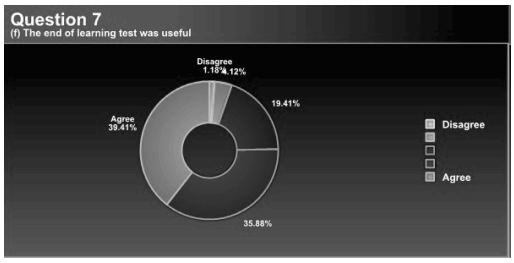


Work-practice improvement perception

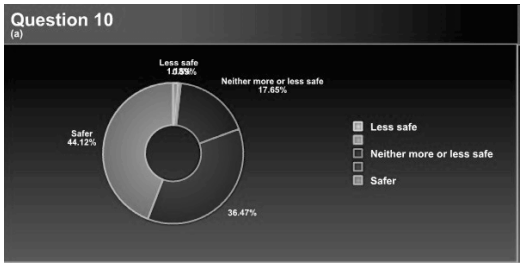
Quizzes and activities



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 is 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

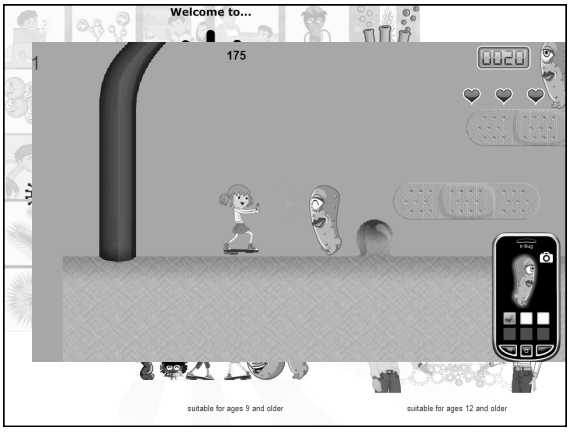
- Australian revised ICG to be released late 2009
  - Plan to develop national training tools for HCWs on infection control
- Antibiotic stewardship strategy
  - Training materials for prescribers and pharmacists envisaged

eLearning 2.0

- Collaborative approaches
- Asynchronous vs synchonous 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
- E-Bug – www.e-bug.eu Antibiotic and hygiene teaching resource aiming to reinforces an awareness of microbes, hand and respiratory hygiene and the benefits of prudent antibiotics use among junior and senior school children across Europe.



Acknowledgements

- Australian Commission on Safety & Quality in Healthcare:
  - Dr Chris Baggoley, Marilyn Cruickshank
- WA Health:
  - Janet Jones and the team
- NSW Hunter New England:
  - Sandy Berenger, Helen Stretton, Julianne Clift, Lorraine Thornton, Kelly Adams
- Intuition:
  - Brian O'Malley, Ciara 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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