The importance of training and education in infection control

Nick Beeching

Tropical & Infectious Disease Unit
Royal Liverpool University Hospital
Liverpool School of Tropical Medicine

beeching@liverpool.ac.uk

Education and training

- Why is it important?
- Who are we trying to educate/train?
- How do we do this?
- How do we assess them?
- How do we measure the effect?
- Who else should we educate?

Journal of Hospital Infection (2000) **46**: 96–105
doi:10.1053/jhin.2000.0822, available online at http://www.idealibrary.com on IDEAL®

INFECTION CONTROL IN PRACTICE

Educating the infection control team – past, present and future. A British perspective

E. A. Jenner* and J. A. Wilson†

**Faculty of Health and Human Sciences, University of Hertfordshire, Hatfield, Hertfordshire AL10 9AB;*
†Nosocomial Infection Surveillance Unit, Public Health Laboratory Service, Colindale, London NW9 5HT, UK

Summary: This review sets out to explore how education and training provisions for members of the Infection Control Team (ICT) have developed alongside their roles and in response to changes in the British National Health Service. It focuses on the Consultant in Communicable Disease Control, the Infection Control Doctor and the Infection Control Nurse in the United Kingdom, but also briefly considers approaches adopted by other countries. Future developments should include maximizing information technology for delivering teaching materials, shared learning and improvements to pre-registration curricula for both doctors and nurses.

Why is it important?

- Difficult to effect change
  - Semmelweiss (puerperal fever)
- Poor knowledge of health care workers
  - Florence Nightingale
  - 'the best women who are woefully deficient in sanitary knowledge'
- Problems in fever hospitals eg
  - Peters BA. The elimination of cross-infection in
  - fever hospitals. *Publ Hlth* 1913–14; **27**: 296.

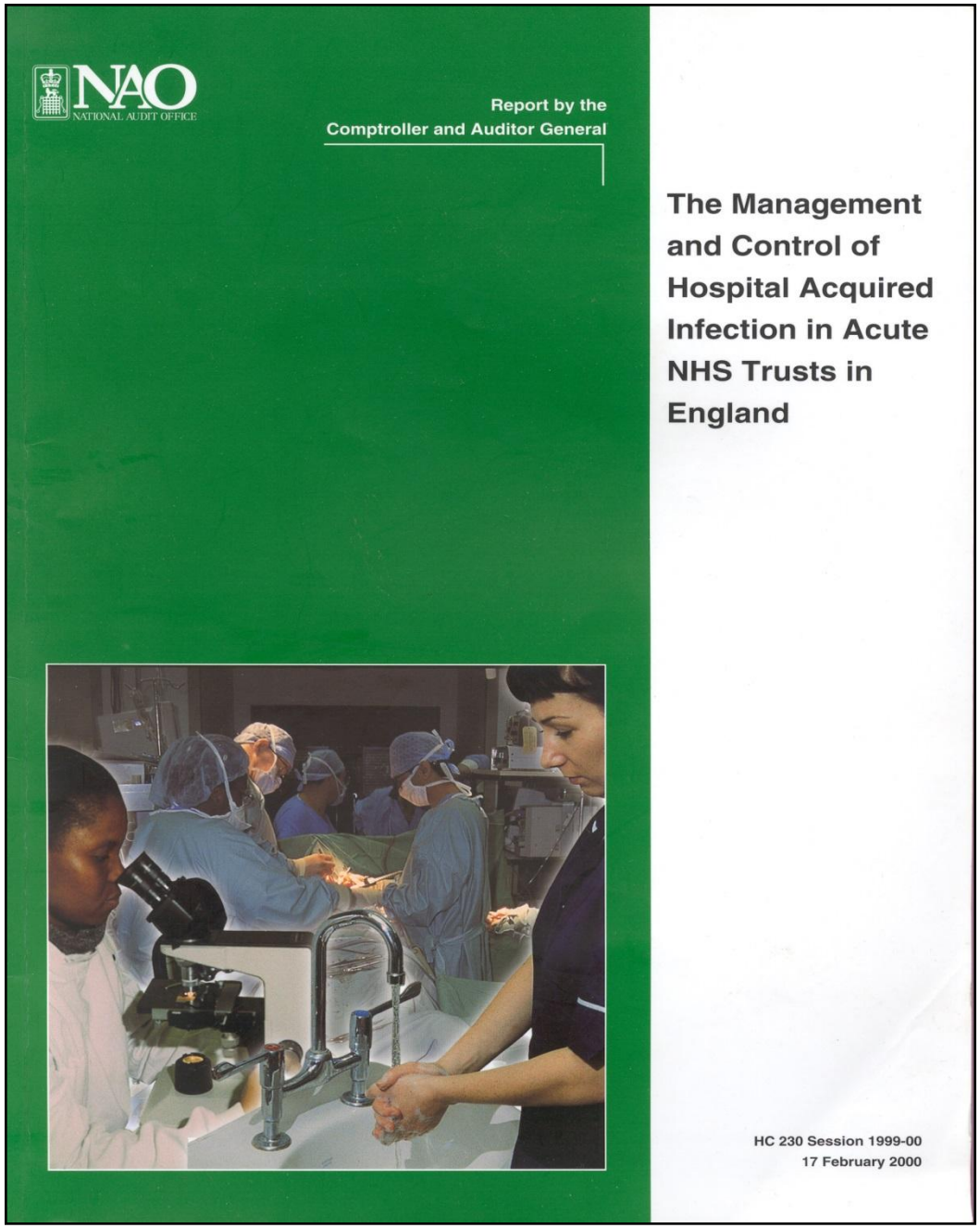
Why is it important?

- MRC Memorandum 11 (1944) recommended that every hospital should establish a Control of Cross-Infection Committee which:

‘should be the basis for standing orders which all hospital personnel would be required to know and obey’.

Hospital Acquired Infections 2000

- 10% of patients get a HAI
- 5000 patients every year die of HAI
- Deaths due to MRSA are increasing
- Costs £1 billion per year
- 15% of HAI are preventable
- A hospital with a lower rate of MRSA bacteraemia is a better hospital



- HAI had a low profile in many Trusts
- HAI costly and some preventable
- Dissemination of good practice needs to be improved
- Growing mismatch between what is expected of ICT and resource

Patients enter superbug lottery

MRSA risk to patients depends on where they are treated

Average risk of contracting MRSA during a 10-day hospital stay

Lothian University Hospitals	1/227
Fife Acute Hospitals	1/362
Tayside University Hospitals	1/459
Lanarkshire Acute Hospitals	1/505
Borders General Hospitals	1/533
Forth Valley Acute Hospitals	1/715
North Glasgow University Hospitals	1/735
Dumfries & Galloway Acute & Maternity Hospitals	1/760
Ayrshire & Arran Acute Hospitals	1/885
South Glasgow N Hospitals	1/984
Grampian University Hospitals	1/1018
Orkney Health Board	1/1172
Argyll & Clyde Acute Hospitals	1/1312
Highland Acute Hospitals	1/1335
Healthcare	1/2137

500,000 DAYS LOST TO SUPERBUGS

To halve it would clear waiting lists: study

MRSA CRISIS

Priorities

...risk of c... MRSA in hospitals across Scotland, and raises new concerns about their hygiene standards.

The number of patients struck down by MRSA – a particularly virulent antibiotic-resistant bacterium – soared in the past year to almost 16 d... It is estimated that 400 p... year are killed by so... hospital acquired...

But the ne... Scottish ... and ...

...ES · MARCH 31, 2002

...ospital flouts fatal bug rules

Mark Macaskill

A HOSPITAL forced to close ... earlier this year after three ... died from salmonella ... and more than 300 ... with the winter ... ing a new out... breaches ... wards. ... tion teams – known as patient-environment-action teams – should be extended to Scotland. They are already widely used south of the border.

"A thorough internal investigation is needed to address the standard of care and cleanliness at this hospital," said Mike Stone, the association's chief executive. "Day rooms should not be used for storing hospital kit, and to mistakenly take somebody for a brain scan is ... Times for bringing our attention to these matters which we will investigate fully."

Last week, it emerged the families of two men who died after contracting the MRSA while in another Glasgow hospital are suing the NHS.

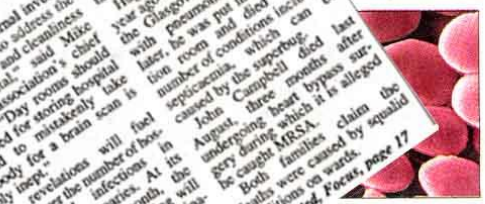
Hugh Gallacher, 67, died a year ago after being admitted to the Glasgow Royal Infirmary with pneumonia. Ten days later, he was put into an isolation room and died from a number of conditions including septicaemia, which can be caused by the superbug.

John Campbell died last August, three months after undergoing heart bypass surgery during which it is alleged he caught MRSA.

Both families claim the deaths were caused by squalid conditions on wards.

Forces, page 17

'400 people a year ...are killed by some ...m of hospital ...ired infection'



...below, show a marked variation between NHS trusts in the risks of ...

Yorkhill trust and We... Health Board had ... patient infection re...

Both Lothian a... had MRSA leve... "defined limit" ... Scotland and ... they should "... the measure... control MR...

Last ni... Professor ... Aberde...

"These ... the str... infect... gere... but ... m... it ...

...claimed the life of one pa... Hairmyres Hospital, East Kil... And a report has for... the hospital was ... between ...

NEW KILLER SUPERBUG INFECTS 41 PATIENTS

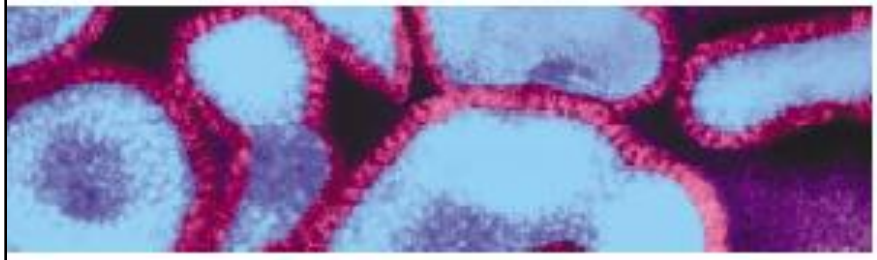
Hospitals on alert as victim dies

By JUDITH DUFFY

A NEW superbug which can destroy antibiotics and cause fatal blood poisoning is sweeping through Scotland's hospitals.

The bug is believed to have ...

...ctor of ...als Trust, ... matter of ...y seriously ...iced a num... ...drive down ...ur hospitals."



Getting Ahead of the Curve

A strategy for combating infectious diseases (including other aspects of health protection)

A report by the Chief Medical Officer

Winning Ways

Working together to reduce Healthcare Associated Infection in England

Report from the Chief Medical Officer

December 2003

Winning Ways

- 7 action areas
  - Active surveillance
  - Reducing infection risk from devices
  - Reducing reservoirs of infection
  - High standards of hygiene in clinical practice
  - Prudent use of antibiotics (Stewardship)
  - Management and organisation
  - Research and development

HOUSE OF LORDS
Select Committee on
Science and Technology

Fighting Infection

HL Paper 138

Annual Report of the Chief Medical Officer

Volume Two, 2011
Infections and the rise of antimicrobial resistance

G8 UK
UNITED KINGDOM 2013

G8 Science Ministers Statement London UK, 12 June 2013

Department of Health

Department for Environment Food & Rural Affairs

UK Five Year Antimicrobial Resistance Strategy 2013 to 2018

Antibiotic resistance: indirect consequences

disease and infections that, previously easy to control, will become much more significant threats to health. Standard surgical procedures, such as hip replacements, could become riskier with widespread antimicrobial resistance, as would treatments that result in immunosuppression, such as chemotherapy or organ transplant, which rely on the ability

UK Chief Medical Officer's report, 2013

Indirect consequences for medical care

- cancer chemotherapy
- complex surgery, implant surgery
- haemodialysis
- Rheumatoid arthritis
- organ transplantation

Consequences beyond human health

- financial cost up to $36bn p.a. in US ($70bn including "societal costs")

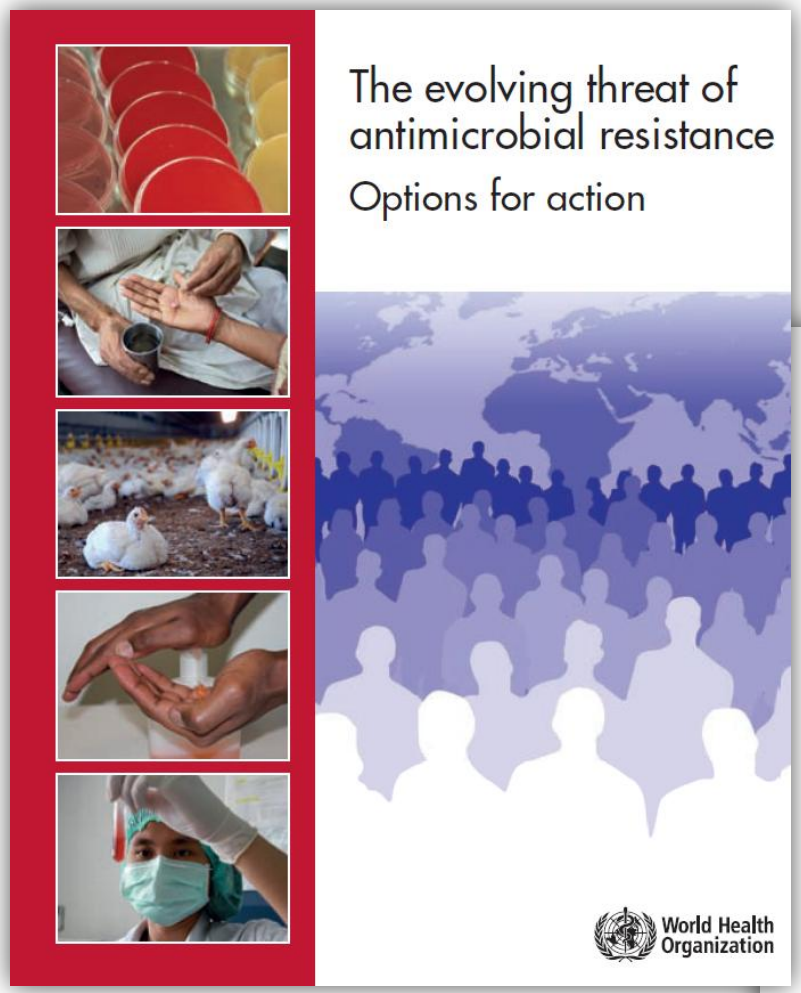
Transatlantic Taskforce on Antimicrobial Resistance

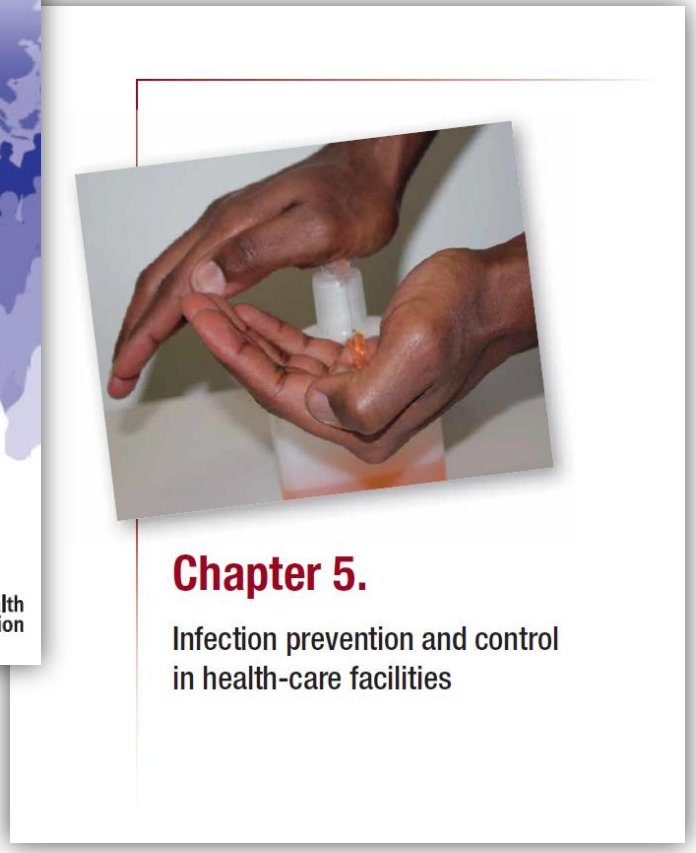
Recommendations for future collaboration between the U.S. and EU

2011

- WHO (2009) and G8 (2013) Statements
  - Antibiotic resistance one of the 3 greatest threats to health
- IDSA 10x20 initiative 2009
- BSAC "Antibiotic Action" 2009
- ReAct 2010 (Action on Antibiotic Resistance)
- Transatlantic Task Force on Antimicrobial Resistance (TATFAR)
- European Commission Action Plan 2011
- UK 5 year Antimicrobial Resistance Strategy 2013-18
- Innovative Medicines Initiative (IMI)

Integration of AS and IPC





UK CMO Report 2013

The new UK antimicrobial resistance strategy and action plan

A major societal, political, clinical, and research challenge

Seven key areas of focus	Stakeholders
Promote responsible evidence based prescribing	Individual prescribers, NHS providers, national and local commissioning boards, ARHAI, PHE, Department of Health, professional bodies
Improve infection prevention and control	Individual clinical staff, NHS providers, national and local commissioning boards, ARHAI, Department of Health, PHE, professional bodies
Raise public and professional awareness of antimicrobial resistance threat and promote behaviour change	Professional bodies, Department of Health, ARHAI, patient groups
Research programme into new diagnostics, alternatives to antibiotics (such as antiseptics), pathogenesis, effective behavioural change to improve infection prevention and control and prescribing practice	NIHR, universities, Department of Health, ARHAI
Facilitate development of new antimicrobials, vaccines, and immunomodulators	Department of Health, drug industry, European Union
Improve surveillance and data linkage	PHE, ARHAI, Department of Health
Encourage international collaboration and data sharing and learning from best practice internationally	Department of Health, PHE

ARHAI=Department of Health Expert Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection; PHE=Public Health England.

Seven key areas of focus	S
Promote responsible evidence based prescribing	I b
Improve infection prevention and control	I b
Raise public and professional awareness of antimicrobial resistance threat and promote behaviour change	F
Research programme into new diagnostics, alternatives to antibiotics (such as antiseptics), pathogenesis, effective behavioural change to improve infection prevention and control and prescribing practice	N
Facilitate development of new antimicrobials, vaccines, and immunomodulators	D
Improve surveillance and data linkage	F
Encourage international collaboration and data sharing and learning from best practice internationally	D

ARHAI=Department of Health Expert Advisory Committee on Antimicrobial Resistance

Seven key areas of focus	S
Promote responsible evidence based prescribing	I b
Improve infection prevention and control	I b
Raise public and professional awareness of antimicrobial resistance threat and promote behaviour change	F
Research programme into new diagnostics, alternatives to antibiotics (such as antiseptics), pathogenesis, effective behavioural change to improve infection prevention and control and prescribing practice	N
Facilitate development of new antimicrobials, vaccines, and immunomodulators	D
Improve surveillance and data linkage	F
Encourage international collaboration and data sharing and learning from best practice internationally	D

ARHAI=Department of Health Expert Advisory Committee on Antimicrobial Resistance

Who are we trying to educate and/or train?

Early infection control committees

1929 Medical Officer of Health

1944 Control of Infection Officer

1950s Infection Control Nurse

Hospital superintendent

Modern committee

- Director of Infection Prevention and Control (Executive board member)
- Infection Control doctor
- Infection Control team
  - IC Nurses and other practitioners (podiatry, dentistry etc)
  - Admin/analysis support
- Antibiotic pharmacists
- Consultant in Communicable Disease Control

Modern Committee

- Estates Management
- Hospital Hygiene
- Divisional Representatives
  - Doctors
  - Nurses
- Hospital governance/audit
- Etc, etc
- (General public)

Journal of Hospital Infection (2003) 54, 251-257

Available online at www.sciencedirect.com

SCIENCE DIRECT®

www.elsevierhealth.com/journals/jhin

REVIEW

The role of the infection control link nurse

S.J. Dawson

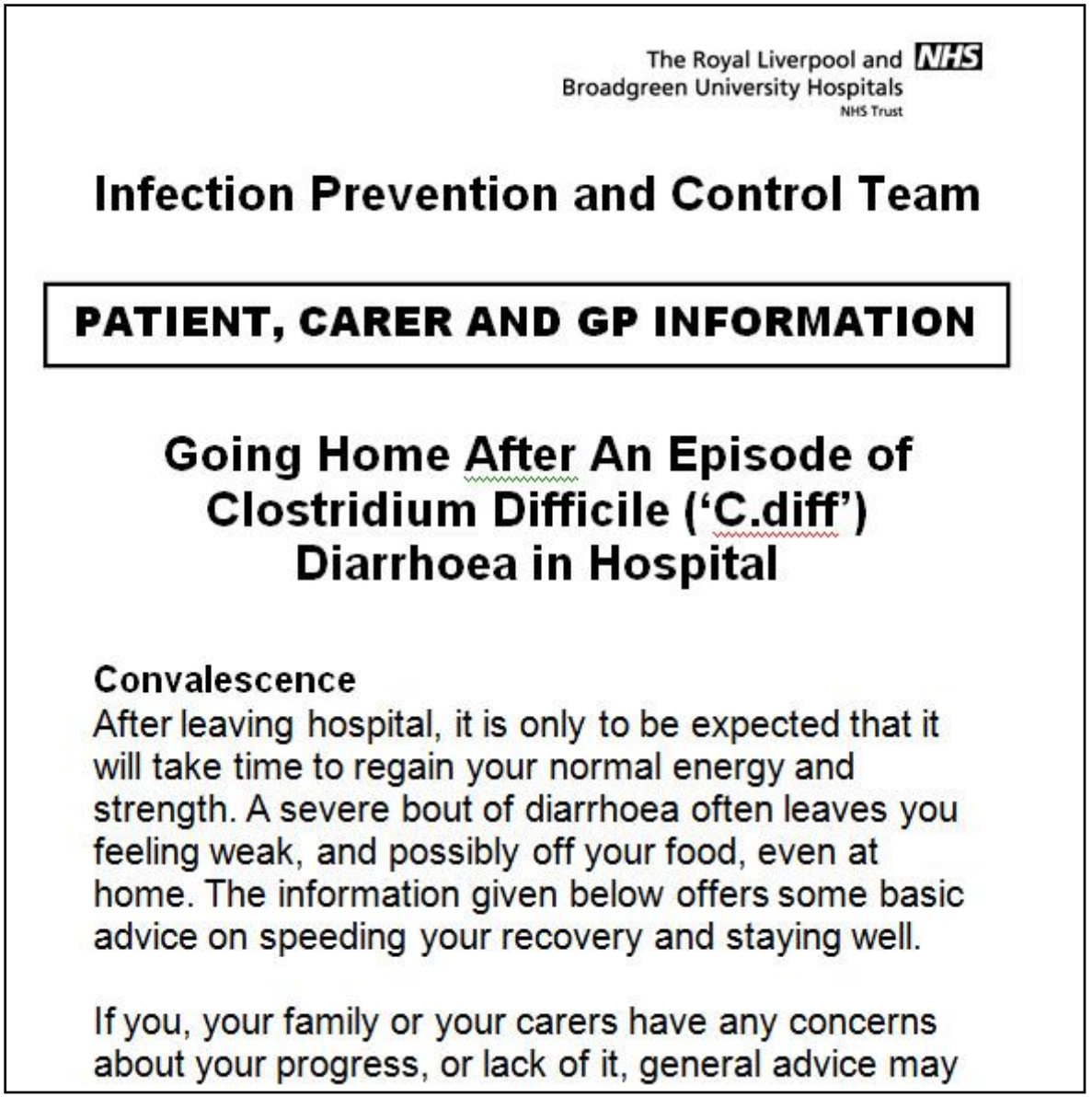
NPHS Microbiology Carmarthen, West Wales General Hospital, Carmarthen, Wales, SA31 2AF, UK

Received 13 February 2003; accepted 19 March 2003

KEYWORDS
Link nurse; Infection control

Summary Link nurses act as a link between their own clinical area and the infection control team. Their role is to increase awareness of infection control issues in their ward and motivate staff to improve practice. It is essential that they receive training from the infection control team to ensure their competence. They have been shown to be of value to Trusts by improving clinical ward audit scores, helping infection control nurses implement policies and collecting data on hospital-acquired infections. In some hospitals, however, there are operational difficulties for link nurse schemes including high turnover of staff and insufficient time for training and monitoring their effectiveness.

Improved patient information



The Royal Liverpool and Broadgreen University Hospitals NHS Trust

Infection Prevention and Control Team

PATIENT, CARER AND GP INFORMATION

Going Home After An Episode of Clostridium Difficile ('C.diff') Diarrhoea in Hospital

Convalescence

After leaving hospital, it is only to be expected that it will take time to regain your normal energy and strength. A severe bout of diarrhoea often leaves you feeling weak, and possibly off your food, even at home. The information given below offers some basic advice on speeding your recovery and staying well.

If you, your family or your carers have any concerns about your progress, or lack of it, general advice may

MINISTRY OF HEALTH *says*:–

Coughs and sneezes spread diseases

Trap the germs by using your handkerchief

Help to keep the Nation Fighting Fit

Who are we trying to educate and/or train?

Early infection control committees

- 1929 Medical Officer of Health
- 1944 Control of Cross-Infection Committee
- 1950s Infection Control Nurse

Hospital superintendent

Everybody

At every level

How do we train?

- Impart knowledge
- Impart skills
- Empower their use
- Assess
  - Skills
  - Results of actions
- Reinforce
- Readjust/learn new skills

Journal of Hospital Infection (1997) **37**, 175–180

EDUCATION

Diploma in hospital infection control (Dip HIC)

A. M. Emmerson*, R. C. Spencer†, B. D. Cookson‡, C. Roberts§ and B. S. Drasar¶

**Department of Microbiology & Infectious Diseases, University Hospital, QMC, Nottingham, NG7 2UH; †PHL, Level 8, Bristol Royal Infirmary, Marlborough Street, Bristol BS2 8HW; ‡LHI, CPHL, 61 Colindale Avenue, London NW9 5HT; §PHLS Board, 61 Colindale Venue, London NW9 5DF; and ¶LSHTM, Keppel Street, London, WC1E 7HT, UK. (Members of the 'Diploma of Hospital Infection Control' Working Group.)*

OPEN ACCESS Freely available online

PLOS ONE

Agreement among Healthcare Professionals in Ten European Countries in Diagnosing Case-Vignettes of Surgical-Site Infections

Gabriel Birgand[1]*, Didier Lepelletier[2], Gabriel Baron[3], Steve Barrett[4], Ann-Christin Breier[5], Cagri Buke[6], Ljiljana Markovic-Denic[7], Petra Gastmeier[5], Jan Kluytmans[8], Outi Lyytikainen[9], Elizabeth Sheridan[10], Emese Szilagyi[11], Evelina Tacconelli[12], Nicolas Troillet[13], Philippe Ravaud[3], Jean-Christophe Lucet[1]

1 Infection control unit, Bichat-Claude Bernard Hospital, Paris, France, **2** Bacteriology and Hygiene Department, Nantes University Hospital, Nantes, France, **3** Centre d'Épidémiologie Clinique, Hôpital Hôtel Dieu, Paris, France, **4** Medical microbiology and infection control, Southend University Hospital NHS Foundation Trust, Essex, United Kingdom, **5** Institute of Hygiene and Environmental Medicine, Charité, University Medicine Berlin, Berlin, Germany, **6** Department of Infectious Diseases and Clinical Microbiology, Ege University Medical Faculty, Bornova, Izmir, Turkey, **7** Institute of Epidemiology School of Medicine, Belgrade, Serbia, **8** Amphia Hospital Breda, Laboratory for *Microbiology* and Infection Control, Breda, the Netherlands, **9** Department of Infectious Disease, Epidemiology, National Public Health Institute, Helsinki, Finland, **10** Department of Healthcare-Associated Infection and Antimicrobial Resistance, HPA Centre for Infections, Colindale, London, United Kingdom, **11** Department of Epidemiology, Office of the Chief Medical Officer, Gyali, Hungary, **12** Department of Infectious Diseases, Università Cattolica del Sacro Cuore, Rome, Italy, **13** Division of Infectious Diseases, Central Institute of the Valais Hospitals, Sion, Switzerland

Abstract

Objective: Although surgical-site infection (SSI) rates are advocated as a major evaluation criterion, the reproducibility of SSI diagnosis is unknown. We assessed agreement in diagnosing SSI among specialists involved in SSI surveillance in Europe.

Methods: Twelve case-vignettes based on suspected SSI were submitted to 100 infection-control physicians (ICPs) and 86 surgeons in 10 European countries. Each participant scored eight randomly-assigned case-vignettes on a secure online relational database. The intra-class correlation coefficient (ICC) was used to assess agreement for SSI diagnosis on a 7-point Likert scale and the kappa coefficient to assess agreement for SSI depth on a three-point scale.

Results: Intra-specialty agreement for SSI diagnosis ranged across countries and specialties from 0.00 (95%CI, 0.00–0.35) to 0.65 (0.45–0.82). Inter-specialty agreement varied from 0.04 (0.00–0.62) in to 0.55 (0.37–0.74) in Germany. For all countries pooled, intra-specialty agreement was poor for surgeons (0.24, 0.14–0.42) and good for ICPs (0.41, 0.28–0.61). Reading SSI definitions improved agreement among ICPs (0.57) but not surgeons (0.09). Intra-specialty agreement for SSI depth ranged across countries and specialties from 0.05 (0.00–0.10) to 0.50 (0.45–0.55) and was not improved by reading SSI definition.

Conclusion: Among ICPs and surgeons evaluating case-vignettes of suspected SSI, considerable disagreement occurred regarding the diagnosis, with variations across specialties and countries.

Agreement among IP's: Europe

	CI_{95} (%)
Intra specialty agreement for SSI diagnosis:	0.04 (0.00-0.62)-0.65 (0.45-0.82)
Intra specialty agreement for depth:	0.05 (0.00-0.10)-0.50 (0.45-0.55)
Intra specialty agreement among surgeons:	0.24 (0.14-0.42)
Intra specialty agreement among IPs:	0.41 (0.28-0.61)
After reading SSI definitions	
Intra specialty agreement among surgeons:	0.09
Intra specialty agreement among IPs:	0.57

c/o T Perl

Birgand *et al Plos One* 2013:8;1-9

How do we educate?

Home | Education & Events | Professional Practice | News & Media | Membership | About IPS | Public / Patients | Contact Us

Infection Prevention Society

www.ips.uk.net

Infection Prevention 2014

SECC, Glasgow

Date for your diary: 29 Sept to 02 Oct 2014

SECC

Join IPS and Enjoy Access To ...

Networking for Infection Prevention Professionals

There is a local IPS branch near you. Why not get involved and

Influencing

IPS has responded to the EPIC3 consultation. To read the response click above icon.

Conference and Seminar Programmes

Infection Prevention 2013 is now over and has been a great

FREE Access to the Journal of Infection Prevention

All IPS members get free online access to the JIP. Details can be

IPS Twitter and Infection News Updates

With over 1,000 followers you can keep up with the latest

Infection Prevention Best Practice

The latest Quality Improvement tool is available for free download, click the icon

Education & Events

- Annual Conference
- Presentations from Previous IPS
- Events ...
- Event Diary
- Webinars and Teleclasses
- Courses

Education & Events

Conferences

Much of the education that IPS delivers to its members and others is through live events. This form of education provides opportunity for interaction with other delegates, the possibility of listening to and questioning expert presenters and many other benefits. IPS offers events ranging from a large annual international conference which attracts over 1,000 people to less formal local branch meetings and study days.

- Annual Conference ...
- IPS Branches ...

Other Educational Activity

In addition to conferences and study days there are opportunitites for education through reading the Journal of Infection Prevention, linking with other colleagues on website forums and more formally through Webinars and Teleclasses.

- Webinars and Teleclassess ...
- Journal of Infection Prevention ...
- IPS Event Diary ...

University Courses

Courses

IPS is not responsible for the content of the courses listed on this page. Please contact each organisation for further information.

Bsc (Hons) Practice Development (Infection Control)

Northumbria University

Contact:
Joan Cochrane
Tel: 0191 2156078
Email: joan.cochrane@northumbira.ac.uk

Visit Course Website ...

BSC (Hons) Dimensions in healthcare: infection prevention and control pathway.

Birmingham City University

Contact: Shirley Kirnon
Tel: 0121 331 6140

Conferences

Much of the education that IPS delivers to its members and others is through live events. This form of education provides opportunity for interaction with other delegates, the possibility of listening to and questioning expert presenters and many other benefits. IPS offers events ranging from a large annual international conference which attracts over 1,000 people to less formal local branch meetings and study days.

- Annual Conference ...
- IPS Branches ...

Other Educational Activity

In addition to conferences and study days there are opportunitites for education through reading the Journal of Infection Prevention, linking with other colleagues on website forums and more formally through Webinars and Teleclasses.

- Webinars and Teleclassess ...
- Journal of Infection Prevention ...
- IPS Event Diary ...

University Courses

Finally this section can also 'signpost' individuals wishing to undertake a formal

Infection specialties in Europe

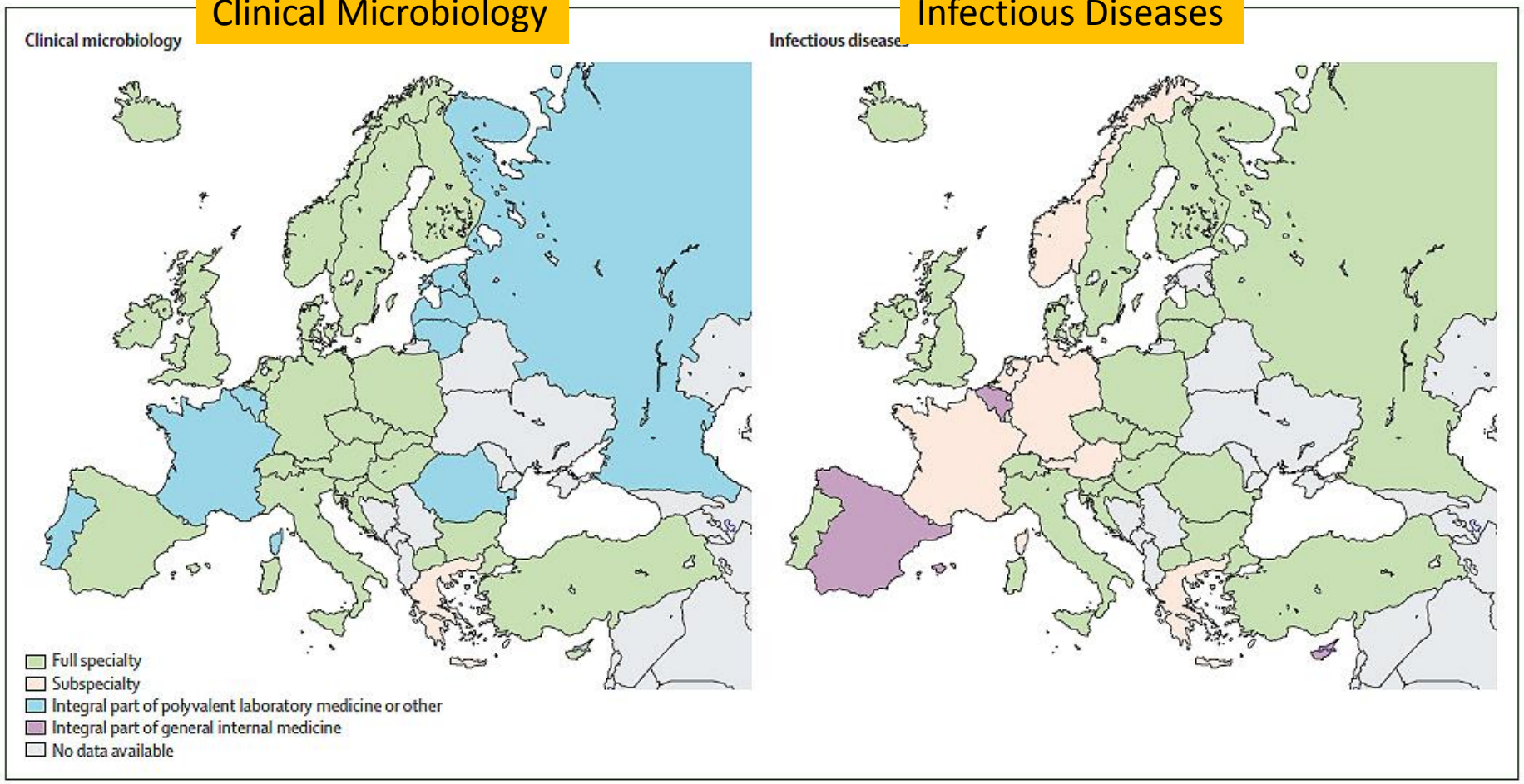


Figure: Recognition of clinical microbiology and infectious disease specialties by the European Union

Read RC *et al. Lancet ID* May 2011;11(5):408-15

New proposed curriculum of generic competencies for an Infectious Disease Physician (Europe) **http://uems-id.eu/**

- Includes more levels of definition of what training is required in each main objective domain
- Defines for each item the expected
  - Knowledge
  - Skills/competencies
  - Professional behaviour
- Does NOT yet specify levels of competence to be achieved at different stages of training
- Suggests possible methods of assessment of each item
  - Workplace based assessments
  - Examinations

Objective 1: To obtain clinical competence at a specialist (consultant) level in the assessment, investigation, diagnosis and management of infection

1.1 History taking

1.2 Clinical Examination

1.3 Investigations and Specific Skills

1.5 Interaction with other Healthcare Teams

1.6 Management of Longer Term Conditions

1.7 Patient Safety

1.8 Communication

1.9 Teaching and Training

1.10 Personal Behaviour

1.11 Management and Healthcare Structure

Further objectives

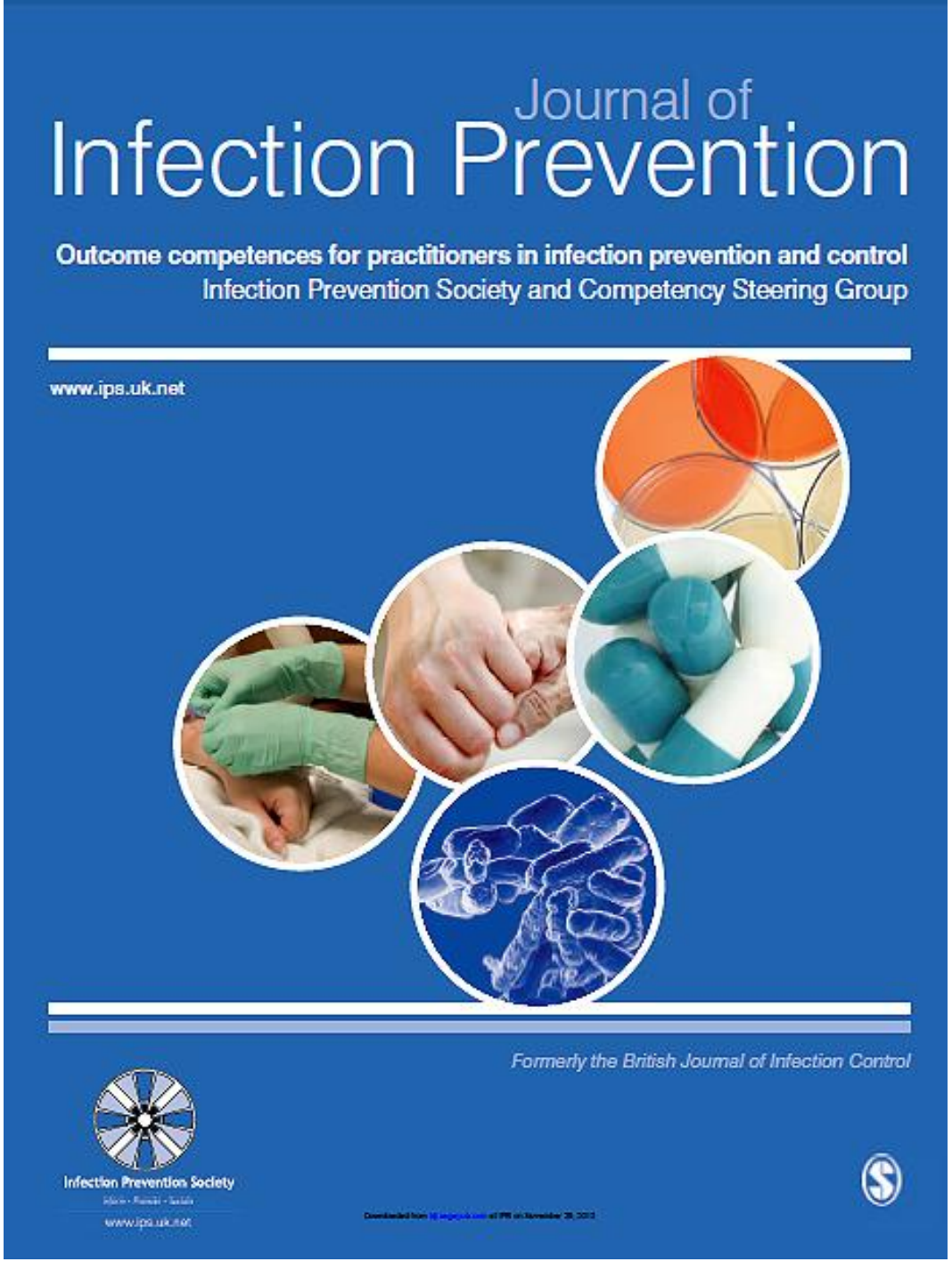
- Objective 2: To obtain competence at consultant level in the management of Community Acquired Infections (CAI)
- Objective 3: To obtain competence at consultant level in the management of the HIV infected patient and infections in the non – HIV immunocompromised patient
- Objective 4: To acquire the skills necessary at consultant level to recognise, manage and control hospital acquired infection (HAI), including intensive care (ICU) related infections
- Objective 5: To achieve competence at consultant level in the diagnosis, investigation and management of imported infection and the provision of pre – travel health advice

Example of one item

4.2 Specific Infections Related to Post – Operative Sepsis

Recognition and treatment of specific infections related to post operative sepsis	
Knowledge	**Assessment Methods**
Has a good understanding of the common infections associated with particular surgical procedures	SCE, CbD, mini - CEX
Has a good knowledge of local and national resistance patterns	CbD, SCE, mini - CEX
Skills	
Able to differentiate between colonisation and infection	SCE, CbD
Behaviour	
Able to maintain good working relationships with surgical colleagues	MSF

J Hosp Infect. 2011 Nov; 79(3):278



Complex document

- Defines in great detail a wide variety of competencies to be achieved
- Both technical and behavioural
- For a variety of practitioners
- Encourages repeated cycles of self education, self assessment and resetting of personal goals

Contents

Box 1: Domains and competences

Clinical practice

1 Improve quality and safety by developing and implementing robust, high-quality policies and guidelines that prevent and control infection
2 Collate, analyse and communicate data relating to preventing and controlling infection for surveillance purposes
3 Manage incidents and outbreaks
4 Improve quality and safety through the application of improvement methodologies
5 Advise on the design, construction and modification of facilities to prevent and control infection in the built environment
6 Evaluate, monitor and review the effectiveness of decontamination processes for equipment and environment

Education

7 Develop own knowledge, skills and practice
8 Lead the development of the knowledge, skills and practice of the infection prevention and control team
9 Develop and implement learning and development opportunities and solutions to improve infection prevention and control
10 Work with others to develop, implement, evaluate and embed infection prevention and control within workforce development strategies

Research

11 Access, appraise and apply robust evidence of all types from a range of research and other sources, to the domains of the role
12 Lead high quality infection prevention and control services
13 Share best practice through the dissemination of evidence and knowledge

Leadership and management

14 Improve quality and safety through networking, influence, proactivity and challenge
15 Improve quality and safety through the design, planning, monitoring and development of services
16 Lead high quality infection prevention and control services
17 Lead and manage the work of the infection prevention and control team to achieve objectives

Box 2: Competency structure

1. **Domains of practice** – the four domains that describe the major components of advanced-level practice, that is:
   a. clinical practice
   b. education
   c. research
   d. leadership and management
2. **Competence statements** – these are the broad role expectations of practitioners working at an advanced level of practice in IPC. They describe the 'what has to be done'.
3. **Performance indicators** – aligned to each of the competence statements, the performance indicators describe what competent performance in advanced-level practice in IPC looks like. The indicators describe the level and scope of competent practice – that is, the indicator against which competence would be judged.
4. **Knowledge, understanding and skills** – these descriptions identify the knowledge, understanding and skills that a practitioner would need to develop in order to achieve the competences to the level of performance required in the indicators. These statements do not have a one-to-one relationship with the performance indicators, because to achieve one indicator it is often necessary to use a range of different knowledge and apply different skills.

Journal of Infection Prevention **published online 18 November 2013**

The outcome competency framework for practitioners in infection prevention and control: use of the outcome logic model for evaluation

E Burnett[1*], E Curran[2], HP Loveday[3], MA Kiernan[4], M Tannahill[5]

1. School of Nursing and Midwifery in collaboration with the Infection Prevention Society, Infection Prevention and Control, University of Dundee, 11 Airlie Place, Dundee DD1 4HU, UK. Email: e.burnett@dundee.ac.uk

2. Infection Control, Health Protection Scotland, Glasgow, UK

3. Director of the Richard Wells Research Centre, University of West London, London, UK

4. Infection Prevention Consultant, Southport and Ormskirk Hospital NHS Trust, Merseyside, UK

5. Consultant nurse infection control, Care Inspectorate, Paisley, UK

**Corresponding author*

http://bji.sagepub.com/content/early/2013/11/18/1757177413512387

*Accepted for publication: 21 October 2013

Key words: Education and training, guidance, healthcare workers, infection prevention and control, knowledge, patient safety, practice development, professional development, role development, staff development

43% of 242 IPC members had used it (response 13.4%)
Around half of these found it useful

The outcome competency framework for practitioners in infection prevention and control: use of the outcome logic model for evaluation

E Burnett[1*], E Curran[2], HP Loveday[3], MA Kiernan[4], M Tannahill[5]

1. School of Nursing and Midwifery in collaboration with the Infection Prevention Society, Infection Prevention and Control, University of Dundee, 11 Airlie Place, Dundee DD1 4HU, UK. Email: e.burnett@dundee.ac.uk

2. Infection Control, Health Protection Scotland, Glasgow, UK

3. Director of the Richard Wells Research Centre, University of West London, London, UK

4. Infection Prevention Consultant, Southport and Ormskirk Hospital NHS Trust, Merseyside, UK

5. Consultant nurse infection control, Care Inspectorate, Paisley, UK

**Corresponding author*

http://bji.sagepub.com/content/early/2013/11/18/1757177413512387

*Accepted for publication: 21 October 2013

Key words: Education and training, guidance, healthcare workers, infection prevention and control, knowledge, patient safety, practice development, professional development, role development, staff development

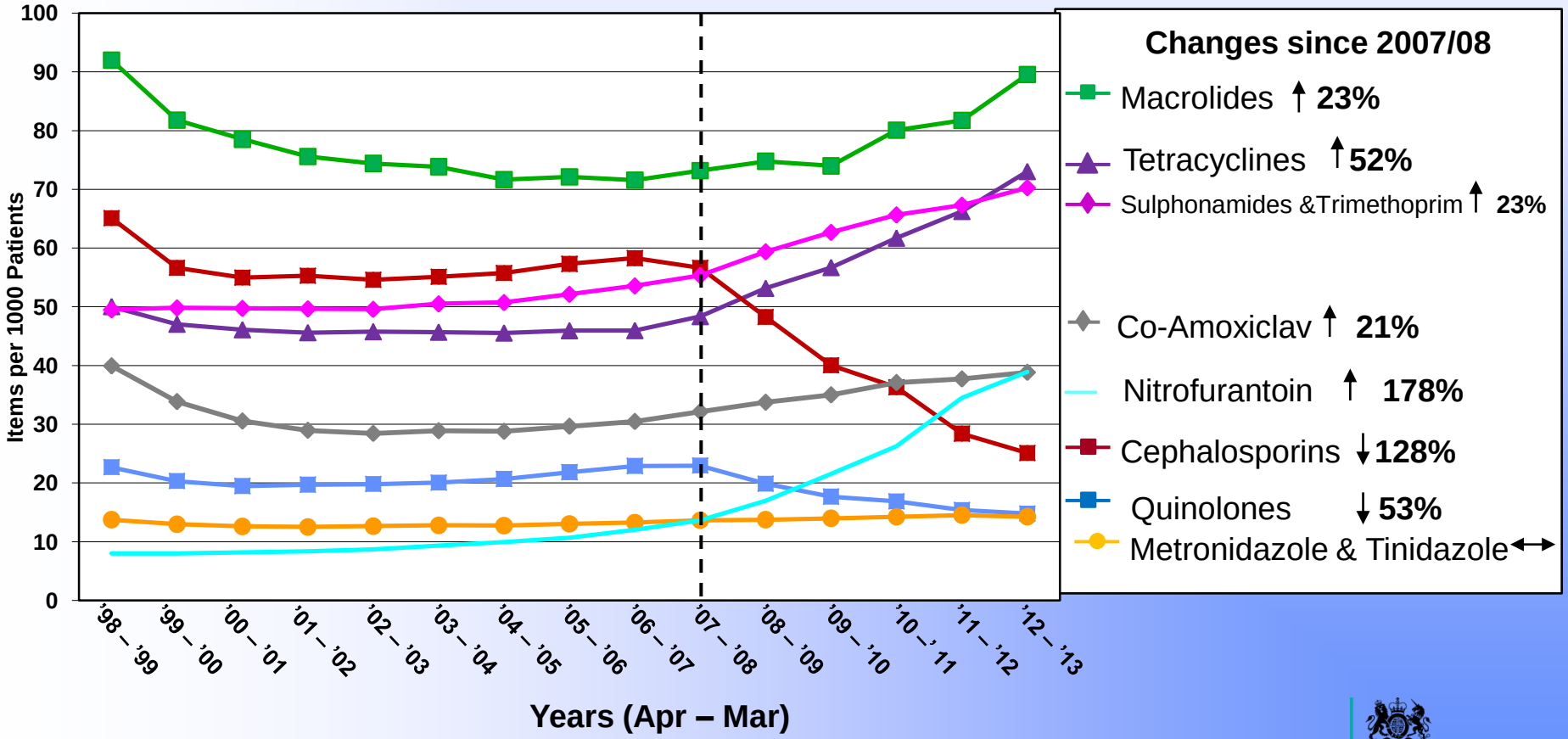
Others

- General practitioners
- Public
  - Adults
  - Children

UK PRESCRIBING

What is happening to GP prescribing?

Trends in prescribing of antibacterial items (excluding penicillins) in English General Practices



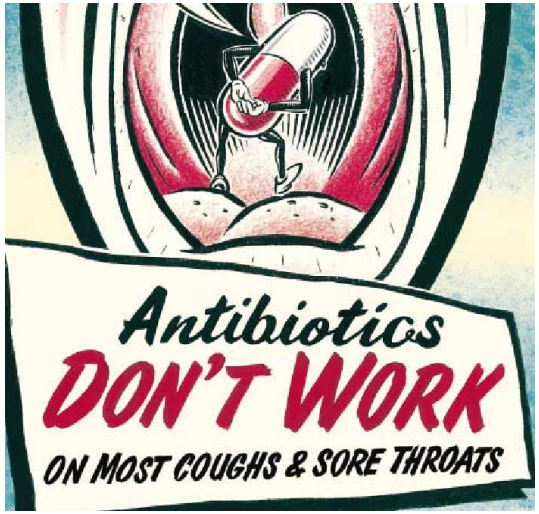
Royal College of General Practitioners

Public Health England

Public Health England

Effect of public campaigns: 2003

'May I check, have you seen this leaflet before or have you seen or heard anything about the Andybiotic campaign?



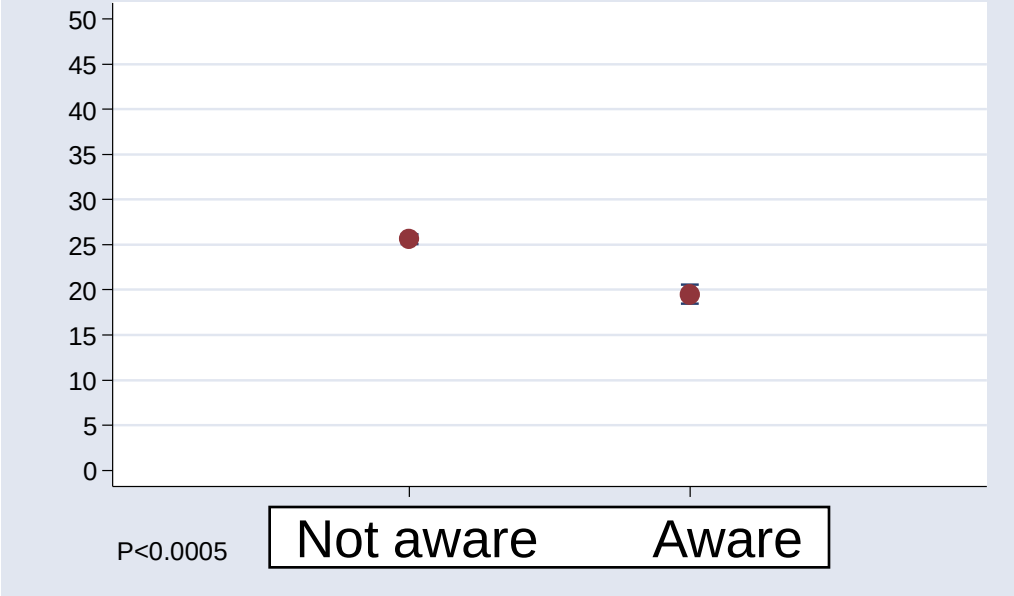
England 20%
Wales 22%

Scotland 14%
(in papers but not GP practices)

McNulty CAM et al *J Antimicrob Chemother* 2007;59(4):727-38

Public Health England

Percentage of antibiotic questions incorrect by whether aware of Andybiotic campaign



Greatest difference was for 'antibiotics work on most coughs & colds' which was key message of campaigns:

incorrect responses

24% If aware vs

42% if not aware P< 0.0005

McNulty CAM et al *J Antimicrob Chemother* 2007;59(4):727-38

Public Health England

2008 poster campaign refreshed!

Before and after survey in England and Scotland

In the past year:

- Of 70% visiting a GP surgery
- 14.7% English and 13% of Scots remembered posters

McNulty, Nichols, Boyle, Woodhead, Davey. *J Antimicrob Chemother* 2010;65:1526.

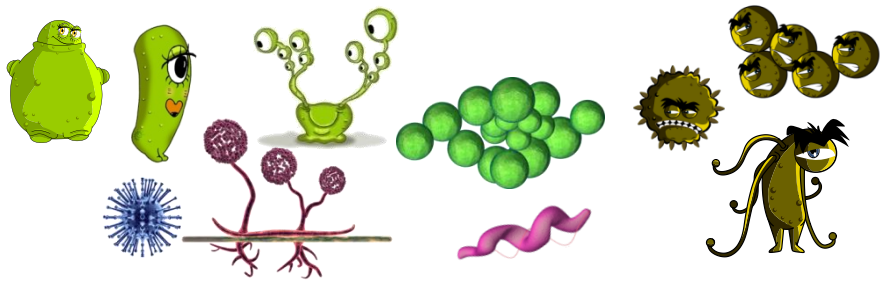
Public Health England

www.e-Bug.eu

Public Health England

e-Bug: Pack Content

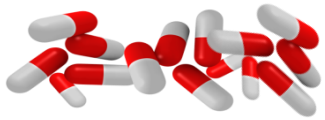
1. **Micro-organisms**
   i. An Introduction
   ii. Useful Microbes
   iii. Harmful Microbes



2. **Spread of Infection**
   i. Hand Hygiene
   ii. Respiratory Hygiene
   iii. Food Hygiene (Junior)
   iv. Sexual Transmission (Senior)
   v. Farm visits

3. **Prevention of Infection**
   i. The Body's Natural Defences
   ii. Vaccinations

4. **Treatment of Infection**
   1. Antibiotic Use and Medicine



Conclusions

- Why important?
- Patient safety and financial savings
- Who should be targetted?
- Train the infection control team and educate everyone
- How?
- Formal training using multiple approaches to empower people to educate themselves. Constantly innovate and reinforce

Conclusions

- How to assess
- Examinations, reflective portfolios and multiple competency assessments
- How to measure the effect?
- More difficult – protocol adherence, engagement of interacting healthcare teams improved patient outcomes etc
- Who else to educate?
- Whole health team; the public, young and old

Acknowledgments

- Prof Alison Holmes

  Imperial College London
- Dr Cliodna McNulty

  Head, Public Health England Primary Care Unit
- Rebecca Molyneux

  Nurse Consultant, Infection Prevention and Control, Royal Liverpool University Hospital

شكرا لكم على إهتمامكم

Thank you for your attention