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# Infection Prevention and Control: Role, Competencies & Quality Indicators

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# Objectives

1. Outline role of IPC
2. Highlight IPC competencies
3. Use key evidence to highlight important areas
4. Link to SIGHT and ECDC quality indicators

# Policy and related documents



Report by the  
Comptroller and Auditor General

## The Management and Control of Hospital Acquired Infection in Acute NHS Trusts in England



### Improving patient care by reducing the risk of hospital acquired infection: A progress report

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL  
HC 876 London (2002-2004) 14 July 2004



## Winning Ways

Working together to reduce Healthcare Associated Infection in England

Report from the Chief Medical Officer



# Safety FIRST



## Getting Ahead of the Curve

Action to strengthen the microbiology function in the prevention and control of infectious diseases

24 June 2002



## Saving Lives

A delivery programme to reduce he

Click screen to proceed.



## The Health Act 2006

Code of Practice for the Prevention and Control of Health Care Associated Infections



## Towards cleaner hospitals and lower rates of infection

A summary of action

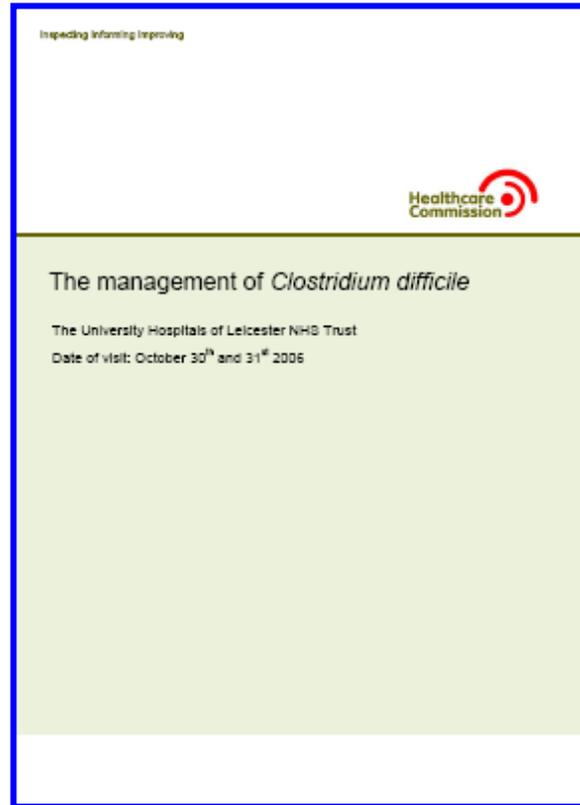
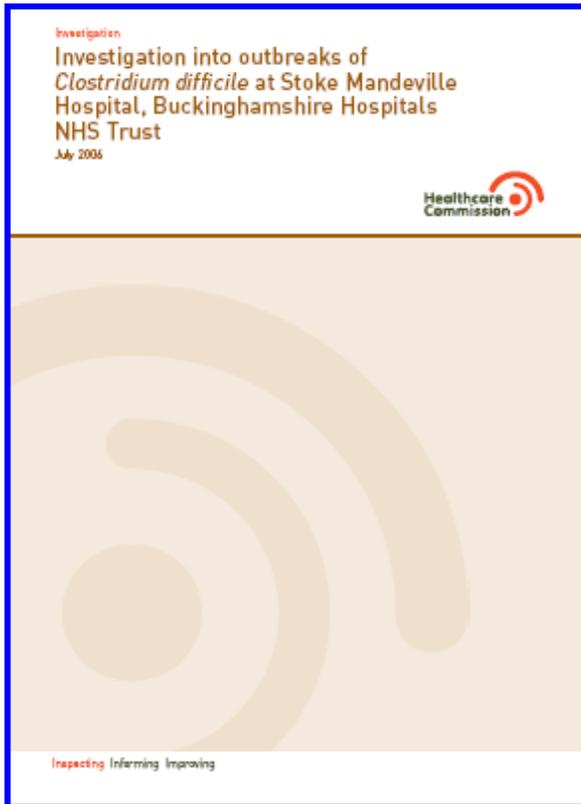


## Clean, safe care

Reducing infections and saving lives



# Enquiry reports



[www.healthcarecommission.org.uk](http://www.healthcarecommission.org.uk)



## Infection Prevention and Control is

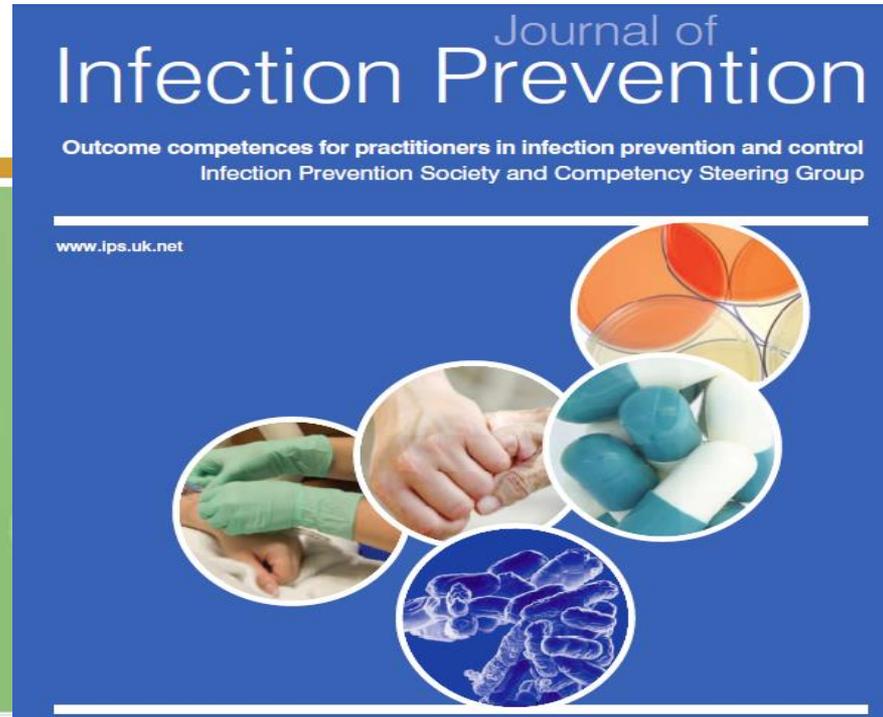
- a core aspect of patient safety
- an indicator of quality of care
- dependent on best practice in individual clinical care
- requires expert input operationally and strategically

But it also relies upon the successful interplay of multiple management systems





# Core competencies in IPC



Do you know the number of staff **trained** in IPC in our country?  
MSc in Healthcare associated infection control



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## Reducing infections (both HCAI & AMRi)

Requires best practice in individual patient care

### **But also....**

e.g. human resources, staff patient ratios, bed management, patient pathways, education and training, information and IT, contract management, procurement, estates and facilities, capital planning, building, design, performance monitoring, antibiotic stewardship, organisational learning and commitment, adoption of innovation, risk management, governance, resource allocation, communications, business planning.....

Multiple management systems involved and must specifically consider and minimise infection risk



## Reduced infection rates linked to better nurse staffing

Elderly intensive care unit (ICU) patients have lower rates of nosocomial infections in hospitals with better nurse staffing levels and where nurses work fewer overtime hours, say researchers from the Columbia University School of Nursing (New York, NY, USA).

Investigators examined data from the US Centers for Disease Control and Prevention's National Nosocomial Infection Surveillance system protocols and Medicare files on 15 846 elderly patients in 51 ICUs in 31 US hospitals. Additionally, 1095 nurses working at these ICUs were surveyed on working conditions, including measures of staffing (nurse hours per patient per day), overtime use, wages, and nurses' perceptions of working conditions.

"Patients admitted to an ICU with more registered nurse hours per patient day had significantly lower incidence of central-line-associated bloodstream infections, ventilator-associated pneumonia, 30-day mortality, and pressure ulcers", said Patricia Stone, lead author of the study. Increased overtime hours

in ICUs were associated with higher rates of catheter-associated urinary tract infections and pressure ulcers, but slightly lower rates of central-line-associated bloodstream infections.

According to Stone, "Improving nurse working conditions using the systems approach is likely to help with nurse retention and recruitment, and this is very important given the magnitude of the nursing shortage we face and what is predicted".

"Several studies have shown that better staffing levels reduce infection. However, sometimes a high infection rate in a hospital or ICU is just a marker of other problems in management—eg, managing staff", said Alison Holmes (Imperial College London, UK). "What is new here is that this research particularly focuses on nurses' overtime in ICUs and the researchers provide some potential solutions", she added.

Stone said "The US Institute of Medicine has recommended a multi-pronged approach to keep patients safe, which includes improving management

in the hospital, attention to adequate trained workforce and work processes, and improving the organisational culture. Results from this study support these recommendations."

In the UK, the Healthcare Commission said last month that it will carry out unannounced inspections at 120 National Health Service trusts over the coming year in its biggest ever programme of visits relating to health-care-associated infection. Cases of methicillin-resistant *Staphylococcus*

*aureus* are falling, but the 55 681 cases of *Clostridium* infection reported in patients 65 years and above in England in 2006—an 8% increase on 1 before. Assessment managers look at the cleanliness of the environment as well as practices in place to prevent and infection—for example, process isolating patients, hand-wash, and cleaning of equipment.

Jennifer Horwood



For more information on nurse working conditions and

## Medical Care, 45, 6, June 2007

### ORIGINAL ARTICLE

## Nurse Working Conditions and Patient Safety Outcomes

Patricia W. Stone, PhD,\* Carly Mackay-Kane, MPH,† Elinor L. Larson, PhD,\* Tamara Horan, MPH,‡ Laurence G. Glance, MD,‡ Jack Zwanziger, PhD,§ and Andrew W. Dick, PhD||

**Background:** Systems approaches, such as improving working conditions, have been advocated to improve patient safety. However, the independent effect of many working condition variables on patient outcomes is unknown.

**Key Words:** patient safety, organisational climate, nursing, workforce, nosocomial infections  
(*Med Care* 2007;45: 871-878)

Reduc

Elderly into patients have infections in staffing levels lower overtime from the Col Nursing (Ne Investigat

P. J. Pronovost, D C. Angus, et al.  
 Physician Staffing Patterns and Clinical Outcomes in Critically Ill Patients: A Systematic Review.  
*JAMA* 288 (17):2151-2162, 2002.

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S Hugonnet, JC Chevrolet, D Pittet. The Effects of Workload on Infection risk in critically ill patients.  
*Crit Care Med* 2007, 35(1)296-8

Nurse Working Conditions and Patient Safety Outcomes

Patricia W. Stone, PhD,\* Carly Moxley-Kane, MPH,† Elaine L. Larson, PhD,\*  
 Teresa Flynn, MBR,† Eugene C. Clancy, MD,‡ Leah Zimmerman, PhD,§ and Andrew W. Cook, PhD||

1 in 4 infections in medical ICU could be avoided if nurse to patient ratio was maintained >2



# Bed management

## Bed occupancy, single bed/room, search and destroy etc

Overcrowding and understaffing in modern health-care systems: key determinants in MRSA transmission

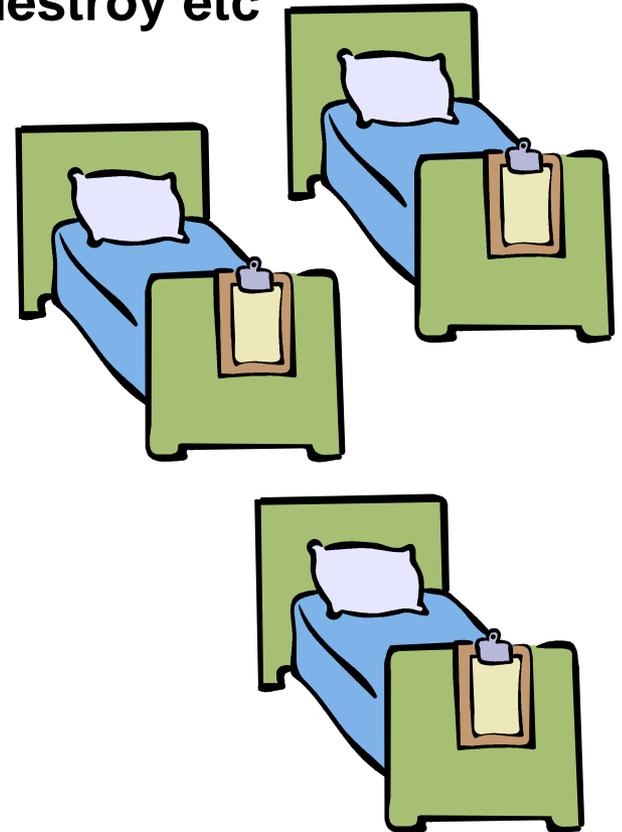
*A Clements et al Lancet Infect Dis 2008; 8: 427–34*

Bed occupancy and turnover interval as determinant factors in MRSA infections in acute settings in Northern Ireland: 1 April 2001 to 31 March 2003

*Cunningham JB, et al J Hosp Infect. 2005 Nov;61(3):189-93.*

Time-series analysis of the impact of bed occupancy rates on the incidence of MRSA infection in overcrowded general wards

*Borg MA et al. Infect Control Hosp Epi. 2008 Jun;29(6):496 502.*





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# Leadership

## Infection Prevention and Control Leadership posts

High Clinical profile, High Management profile

- Directors of Infection Prevention and Control (DIPC) – England

*Saint S et al. The Importance of Leadership in Preventing Healthcare-Associated Infection: Results of a Multisite Qualitative Study. Infect Control Hosp Epidemiol 2010; 31: 901-7.*

## Lines of accountability

Managers and Clinical Directors accountable for infection control performance - aligned with existing decision making & funding structures

## Champions

Clinical leaders (champions) identified at all levels/professions

Reinforces ownership, facilitates surveillance, targeted training, action and adoption of best practice

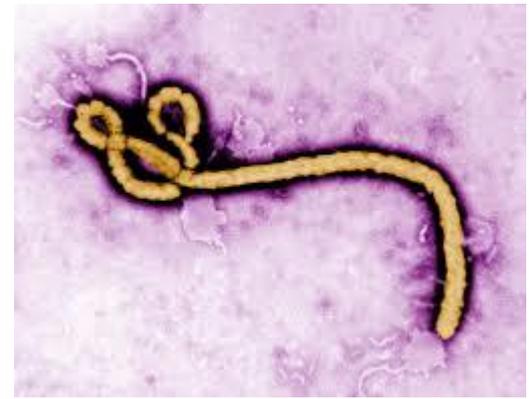
*Greaves et al. Associations Between Web-Based Patient Ratings and Objective Measures of Hospital Quality. Arch Intern Med.*

Published online February 13, 2012



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## Organisational approach required



IPC expertise often not used effectively

Small IPC teams in hospitals/ countries (fire-fighting not strategic)

Expertise not linked to management framework

Systems based approach for sustainability - not short-lived campaigns

Changing culture and behaviour of whole organisation

Creating organisational learning

Institutional and cultural barriers

Requires organisational leadership - flexibility for emerging threats



# Key Components of IPC: SIGHT

No	Key Indicator	Potential measurement
1	IPCT staffing & expertise	Ratio of IPCT to beds (day case/ opd etc) Trained staff
2	Bed occupancy	Bed census midnight
3	Other staffing	ICU/ HDU staff to patient ratio
4	Access to & use of equipment	Alcohol Hand rub consumption/ bed-days Sink, soap and taps at each patient area
5	Implementation of guidelines	Number of staff trained, results of audits
6	Education and training	Competency assessments of staff, appraisal
7	Audits and feedback	Number of audits performed (specialty/ type)
8	Surveillance and feedback	BSI rates, SSI rates, ICU surveillance, AMU/ AMR
9	Identifying champions	Interviews with staff
10	Organisational culture	Absenteeism, turnover, reported patient safety incidents



# Conclusion

- Trained Staff
- Organisational leadership
- Evidence based recommendations/ quality indicators
  - Many UK hospitals now measuring at least some/ all
  - ECDC will pilot quality indicators related to this in 2015

**Do you know how your organisations perform?**

**What can you do to improve preparedness?**