

The UK approach to reducing MRSA bacteraemias



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ONE IN 10 PATIENTS INFECTED BY KILLER HOSPITALS

NHS losing superbug fight



Dr Reid . . . 'bugs are priority'

By JACQUI THORNTON
Health Editor

THE Government is losing its fight to cut hospital deaths from superbugs, officials admitted yesterday.

The shock news came as a tough new drive was launched to clean up Britain's wards.

Nearly one in ten patients are infected by MRSA and other bugs while being treated in hospital.

New figures on every hospital trust in England show that the number catching superbugs **INCREASED** last year - despite a five-year campaign to beat the problem.

It is believed that around 100,000 people a year are infected in England, with an estimated 5,000 deaths.

Aggressive

The proportion of the Staph A bug - the common form of MRSA - which is resistant to the antibiotic methicillin is 44 per cent in the UK.

It is just one per cent in Holland and Denmark. We share the highest percentage with Greece.

The league tables show the best hospitals are in the North, such as Airedale NHS Trust, which had just ten cases. The worst are in the South - Epsom had 72.

The number of MRSA cases - which are resistant to antibiotics - increased by 103, from 7,281 in 2001/02 to 7,384 in 2002/03.

The number of infections classed in the staphylococcus aureus group increased to 18,519 - up 586.

Chief Medical Officer Sir Liam Donaldson yesterday released a report called *Winning Ways* aimed at tackling bugs. He said: "We are going to get much more aggressive."

Health Secretary John Reid said the drive was "a top priority". He added: "The greatest concern is, of course, the illness and death that result from these infections, but the economic costs are also high."

The top and bottom trusts in 'germ war'

BEST ↑	No. of bug cases		Cases per 1,000 bed days*		WORST ↓
	No. of bug cases	Cases per 1,000 bed days*	No. of bug cases	Cases per 1,000 bed days*	
York Health Service	16	0.04	Lewisham Hospital Trust	45	0.24
Peterborough Hospitals	10	0.05	Epsom & St Heller Trust	72	0.24
Stockport Trust	18	0.05	Dartford & Gravesham Trust	36	0.24
Southport & Ormskirk Hospitals	11	0.06	Queen Mary's Sidcup Trust	32	0.25
Airedale Trust	10	0.06	Countess of Chester Hospitals	39	0.26
Dudley Group of Hospitals	17	0.06	East & North Hertfordshire Trust	86	0.26
Rotherham General Hospitals	14	0.06	West Middlesex University Trust	41	0.27
Harrogate Health Care Trust	11	0.07	Barnet & Chase Farm Hospitals	94	0.28
Wirral Hospital Trust	24	0.07	Ealing Hospital NHS Trust	38	0.29
St Helens & Knowsley Hospitals	24	0.07	North Middlesex Hospital Trust	48	0.30
South Tyneside Healthcare Trust	13	0.07	Weston Area Health Trust	31	0.30
Walsall Hospitals Trust	16	0.07			
Morecambe Bay Hospitals Trust	24	0.07			

* ALL FIGURES FOR 2002/3. *BED DAYS* ARE GOVERNMENT MEASURES OF BEDS OCCUPIED. ONE BED DAY EQUALS A BED IN USE FOR 24 HOURS

Plague on our wards: The investigation that will shock Britain - Pages 4 and 5

MRSA bacteraemia rate per 10,000 bed-days in England: Health Protection Agency mandatory surveillance data

2004-5	2005-6	2006-7	2007-8	2008-9	2009-10
1.76	1.77	1.67	1.19	0.78	0.50

Approach strategy



There has been a multi-layered approach to improving the quality of healthcare in the UK (*this differs slightly between the constituent nations – I will be focussing on England*). Infection control forms a significant part of this, with MRSA bacteraemia prevention a high priority within this.

Throughout this presentation, I will be focussing on what I think are the major contributors but, as with many aspects of infection control, it is impossible to tell what factor made what level of contribution (or indeed if there was any contribution at all).

Approach headings



- 1. Legislative**
- 2. Organisational**
- 3. Surveillance**
- 4. Ward level interventions**

Legislative contribution



Whilst much guidance on infection control had been produced, it remained advisory and a benchmark of good practice.

The Health Act (2006) has a section on infection control and referenced an associated *Code of Practice (CoP) for the Prevention and Control of Healthcare-associated Infections* as the standard to which healthcare organisations had to conform. The CoP referenced a wide variety of guidance documents and thus raised the standards within them from advisory to mandatory.

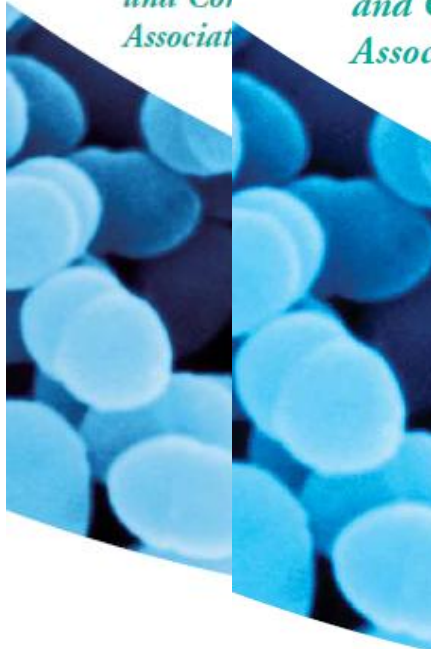
It also brought healthcare auditing bodies into a legislative framework (initially the Healthcare Commission, later the Care Quality Commission) who would use the CoP to set audit criteria.

(In UK law, if a CoP is referenced, to comply with it people do not always need to follow the guidance precisely. If circumstances mean that the guidance is not appropriate then they can use alternatives, *but those alternatives have to achieve at least the same level of safety*).

*The Health and Social Care Act 2008
Code of Practice on the prevention and control of infections and related guidance*

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The Health and Social Care Act 2008

Code of Practice on the prevention and control of infections and related guidance



The introduction to the 2010 CoP bibliography

Bibliography

The following bibliography represents current guidance, best practice and legislation that sets the level of care which should be applied in the prevention and control of infection in health and adult social care. The manner in which care is to be delivered in England is changing, and it is expected that there will be a blurring in the responsibilities of those providing health and adult social care. It is expected that more chronic illness will be managed within the community, and it is beneficial for adult social and health care to be aware of each other's needs and priorities. It is for this reason that we do not differentiate

There then follow 21 pages of references



Important organisational factors

Key points in getting healthcare organisations to prioritise infection control are to

- **Have audited legally-set standards**
 - As in the Health Act CoP
- **Have effective communication from ward level to senior management level (“ward-to-board”).**

This role is, in part, fulfilled by the Director of Infection Prevention & Control (DIPC)

This is in addition to the rest of the infection Control Team (ICT): Infection Control Doctor, Infection Control Nurses and Infection Control Link Staff

From the Health Act CoP



Director of Infection Prevention and Control (DIPC)⁹

The role of the DIPC is to:

- be responsible for the ICT within the organisation
- oversee local control of infection policies and their implementation
- report directly to the Chief Executive (not through any other officer) and the Board
- have the authority to challenge inappropriate clinical hygiene practice as well as inappropriate antibiotic prescribing decisions
- assess the impact of all existing and new policies on HCAI and make recommendations for change
- be an integral member of the organisation's Clinical Governance and patient safety teams and structures
- produce an annual report on the state of HCAI in the organisation for which he or she is responsible and release it publicly

Mandatory surveillance



All the preceding slides outline the framework within which effective MRSA bacteraemia interventions could function.

Then comes the requirement to enumerate the target of the interventions.

There is a requirement for all healthcare organisations to report all MRSA isolations from blood cultures (to the HPA). These are ascribed to community or healthcare associated by the length of stay pre-blood culture (i.e. on or after the 3rd day of admission).

Targets



Based on their previous year's numbers, organisations are set ever decreasing targets for MRSA bacteraemias. (Complex calculations are used to set these target numbers)

There are corporate financial penalties if targets are exceeded. Some local healthcare management organisation offer corporate financial rewards if substantially under-target.

In addition if targets are exceeded, the Department of Health will assign one of its improvement teams to that hospital to advise and ensure improvement.

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'Hit squads' to help tackle MRSA

Hit squads are to be sent into the 20 NHS trusts with the worst record on tackling the superbug MRSA, the Department of Health has announced.



MRSA is linked to nearly 1,000 deaths each year

In all, half of trusts in England are making poor progress towards a target to cut MRSA infections by 50% by 2008.

Latest figures show 3,580 MRSA bloodstream infections in hospitals from April to September 2005, up 55 compared to the year before.

Health Minister Jane Kennedy said she was disappointed with the results.

She said the worst performers would be helped by crack teams of specialists.

"To reinforce the efforts at trusts that are furthest from their targets I am setting up teams of specialists to work with them through 2006.

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Jane Kennedy
Health minister

"These teams will begin first-wave work at Sandwell, Northumbria and Aintree NHS trusts who have volunteered for help, and then move on to around 17 more trusts through 2006," she said.



Patient screening



Up to 2010, all elective patients (medical, surgical and day case) had to be screened, normally at preadmission clinics, for MRSA.

Normally nasal swab or nose + axilla + groin. New technology (PCR) expensive and not usually justified on a result-time basis.

After 2010 this requirement includes all admissions including emergencies.

For MRSA positive electives, there would be a decolonisation regime. For emergencies, action would follow results

One day's exposure with standard precautions being safer than, for example, six days.

Ward level interventions



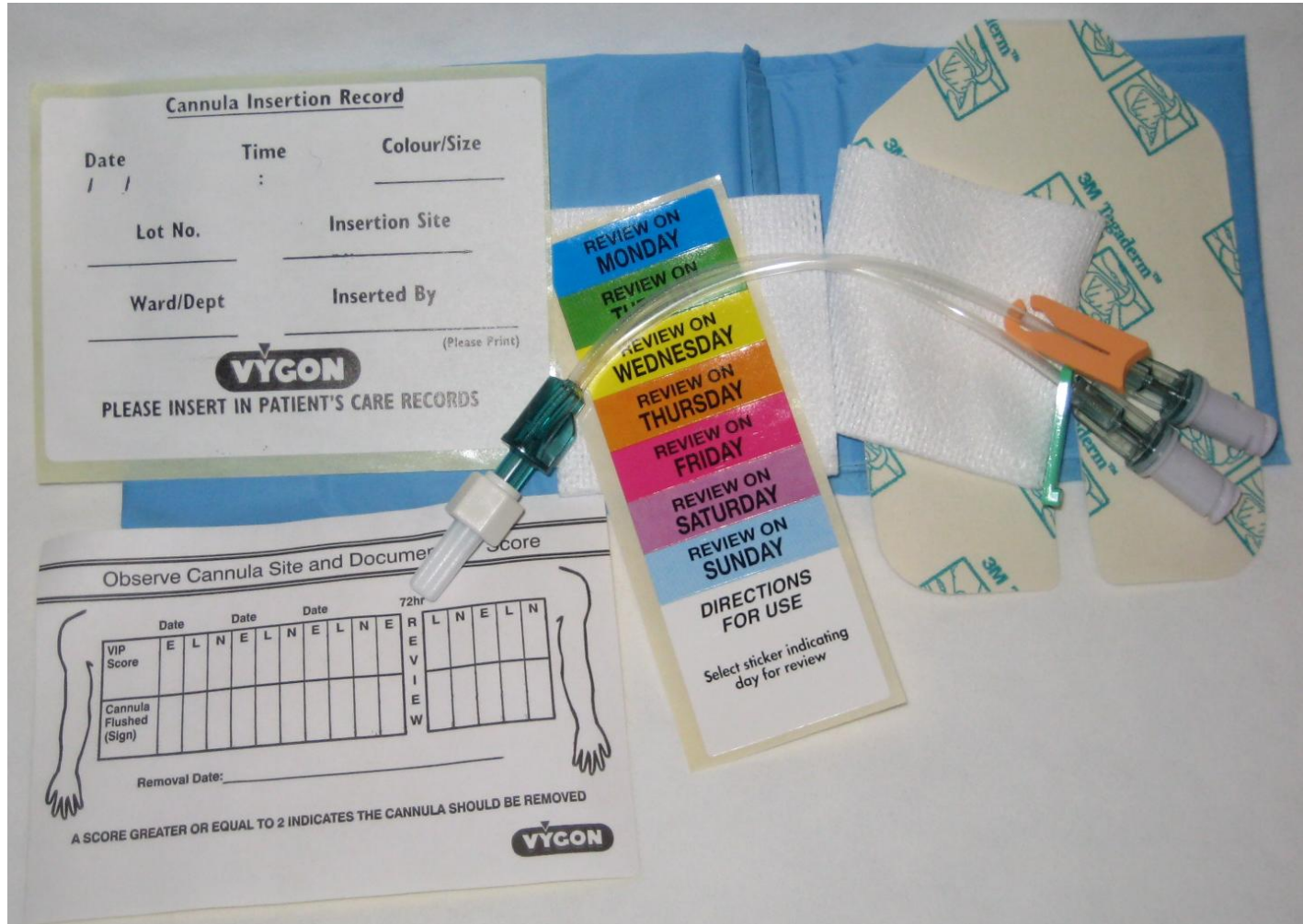
Whilst many interventions, such as hand hygiene, have effects across the infection transmission spectrum, there are some that could primarily target MRSA bacteraemia.

See: www.clean-safe-care.nhs.uk

This gives a variety of evidenced-based care bundles “*high impact interventions*” such as:

- **Central venous catheter insertion and ongoing care**
- **Peripheral intravenous cannula insertion and ongoing care**
- **Blood cultures**

Peripheral iv cannulation pack



Blood cultures



Any MRSA from a blood culture is counted as an MRSA bacteraemia. This has resulted in policies of being selective about taking blood cultures and using good technique to avoid false positives (training in good technique and the use of preprepared packs).

Blood culture pack





Cautions with any interpretation of “success”

The demonstrable reduction is in MRSA bacteraemias

The consequential effects on levels of other manifestations of MRSA are unknown

It has been observed that reductions in MRSA bacteraemias are not matched by similar reductions in MSSA bacteraemias. These are now being included in the mandatory surveillance.

Approximate figures for a London 500-bed teaching hospital:

There will be about 8,000 blood cultures a year of which about 10% (800) are positive. Of these about 10% will be contaminants, leaving around 720 as real. Of these, only 5 or 6 will be MRSA, leaving over 700 non-MRSA bacteraemias.

Whilst MRSA bacteraemias are important, they are a small part of a much larger picture and methods used to prevent them may not be effective for other, equally serious, bacteraemias (with Gram negative bacteria via UTIs for example).