

# ARTICLE #01

NAME:

Read the article and answer the questions below:

The image is a screenshot of the BBC News website from July 2006. The main article is titled "Quick guide: MRSA" and discusses the dangers of Methicillin-Resistant Staphylococcus Aureus. It includes a microscopic image of bacteria, a pie chart showing that 9% of hospital-acquired infections in England are MRSA, and a list of related news stories. The website layout includes a navigation bar at the top, a sidebar with various news categories, and a "SEE ALSO" section with links to other health-related articles.

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### Quick guide: MRSA

**MRSA is a potentially lethal bacterium that causes infections in humans. It is difficult to combat because it has developed a resistance to certain antibiotics.**

Methicillin-Resistant Staphylococcus Aureus usually strikes in hospitals where sicker and weaker people tend to be in close proximity.

**Catching MRSA**

Infections occur where there is opportunity for MRSA to get into the body, such as at surgical wounds or where a catheter or needle is inserted.

MRSA can exist harmlessly on people's skins without their even knowing it, but if it infects someone who is already ill or weak, it can kill.

It is no more dangerous than other forms of Staphylococcus aureus. But because it has developed resistance to methicillin and other antibiotics, it is much more difficult to treat.

**MRSA deaths**

The National Audit Office estimates hospital-acquired infections contribute to some 5,000 deaths annually.

Of those caused by the

**Hospital-acquired infections in England (snapshot)** 9%

■ Infected patients  
■ Patients not infected

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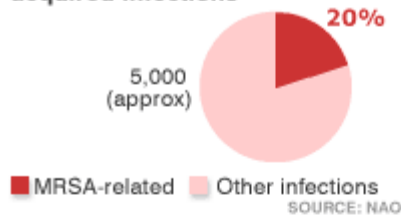
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Staphylococcus aureus family, most are known to be due to the MRSA strain.

Between 2003 and 2004, mentions of MRSA on death certificates increased from 955 to 1,168.

Annual deaths involving hospital-acquired infections



The government has imposed new hygiene standards on hospitals to try to stem its growth.

### Combating the infection

The NHS is targeting ward cleaning and personal hygiene.

Tactics include providing disinfectant hand-rubs and encouraging more vigilance among patients and visitors.

Doctors are now more careful about prescribing antibiotics only when essential, which should help slow the evolution of resistance among bacteria.

### Growth of MRSA

Mandatory reporting by doctors of MRSA infections in the bloodstream - where the consequences are often more serious - was not introduced until 2001. Cases rose to a high of 7,684 in 2003/4.

The following year saw a fall to a record-low of 7,212 infections - but that is still well short of the target of fewer than 4,000 cases by 2007-8.

The latest figures show that there were 3,517 infections between October 2005 and March 2006.

More than 40% of Staphylococcus aureus infections in the UK are MRSA - one of the highest levels in Europe.

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The National Audit Office estimates that hospital-acquired infections, including MRSA, are costing the NHS about £1bn a year.

1. Do bacteria have a genetic code? Reason -briefly- your answer

Yes. They do not have a nucleus but they do have genetic code in the cytoplasm.

2. How can bacteria become resistant to antibiotics?

By mutation. If a bacterium becomes resistant to a certain type of antibiotic, it can inherit that trait to next generations.

3. Cite an example in which bacteria can be beneficial

Bacteria can produce a lot of beneficial products (vitamins in our intestines) or they can eliminate harmful products (organic molecules - waste- in a case of oil spill at sea)

4. Is there any risk of infection in hospitals? Reason your answer

Yes. Microorganisms that are not harmful in normal conditions can be lethal to weak people (with low defenses).

5. What is the relationship between consuming less antibiotics and avoiding more resistant bacteria?

If fewer antibiotics are consumed, lower the opportunity for bacteria to become antibiotic-resistant bacteria.