

Copper and MRSA – How scientists work

Activity sheet A – Copper and MRSA

Questions

In vitro evaluation of copper

- 1 Where was the *in vitro* evaluation of copper carried out?
- 2 What does *in vitro* mean?
- 3 Why do you think the MRSA suspension was incubated at room temperature for three hours in step 1?
- 4 Why do you think the agar plates were incubated at 37 °C?
- 5 How long can MRSA bacteria survive on:
 - a) copper
 - b) brass
 - c) stainless steel
- 6 Which type of metal surface would be best for door handles and taps in a hospital ward?

Clinical evaluation of copper

- 1 Where was the clinical evaluation of copper carried out?
- 2 Which materials were compared in this investigation?
- 3 How long was the investigation?
- 4 How often were samples collected?
- 5 Why were samples collected at different times of day?
- 6 Why were the copper containing and non-copper containing items swapped round after five weeks?
- 7
 - a) How did the scientists collect a sample from the toilet seats?
 - b) Why was each toilet seat sampled twice at each time point?
- 8 Why do you think the scientists calculated the median (middle) number of colonies in each sample?
- 9 Where were most MRSA bacteria found?
- 10 At which time of day were most MRSA bacteria present in the samples?
- 11
 - a) Do you think the use of copper-containing toilet seats, tap handles and door push-plates could help to prevent the spread of MRSA in hospitals?
 - b) Explain your answer.
- 12 Suggest other measures to be used in hospitals to help prevent the spread of MRSA.