ESSAY QUESTION 1

Of the last 20 cases of colic that have had a laparotomy in your clinic, 50% have developed incisional infections. Culture of the discharge from these incision sites has persistently revealed a methicillin resistant form of *Staphylococcus aureus* (MRSA), all of the same type as assessed by pulsed filed gel electrophoresis.

1. What is MRSA and why is it an important pathogen? (40%)
2. Describe how you would approach this outbreak of MRSA in terms of (60%)
   a) controlling the outbreak ,and
   b) preventing further spread of infection

ANSWER:

Mark	Range	Description	Example of key attributes for this question

A1
A2
A3
	90 – 100
	80 – 89
	70 - 79
		Outstanding performance
		
		– An unusually good grasp of the subject both in details and in its wider context, regularly displaying independence of thought and critical judgement
		
		– Always answers the questions, shows evidence of wide and discriminating reading and uses imaginative and appropriate examples
		
		– Well argued and lucidly presented
		
		– Often shows flair
			Question1:
			• Detailed description of MRSA including how resistance is carried genetically
			• Understands the risks to horses and potential risk to human health
			• Clearly understands distinction between nosocomial and community acquired MRSA
			• Knows and can critically appraise the literature pertaining to MRSA in horses and has basic understanding of relevant literature in humans
			
			Question 2:
			• Clear understanding of the risk factors for spread of MRSA as derived from experience in human hospitals and more limited experience from equine units
			• Antibs??
			• Sets in place a very clear and organised plan in relation to these risk factors involving the following key areas:
			  ○ Patient to patient transfer
			  ○ Colonised horse to patient transfer
			  ○ Colonised staff member to patient transfer
			  ○ Environmental transfer
			• Answer should include **reasoned discussion** of subjects such as cessation of clinical activities, assessing clinical practice (clothing, hand hygeine etc), disinfection procedures, tracing of in-contacts, isolation of infected and colonised horses, environmental sampling, horse sampling, human sampling, culture methods, likely costs involved etc.

B	60 – 69	A very substantial answer
		– A very good grasp of the subject and some ability to show independence of thought and critical judgement
		– May have a few errors, but should show awareness of the wider context
		– Always answers questions set, using relevant examples; the amount of relevant data presented may be impressive but there may be a failure to draw the right kinds of conclusions from this material
		– Well expressed
			Question 1:
			• Good understanding of MRSA including basic knowledge of how resistance is carried genetically
			• Understands the risks to horses and potential risk to human health
			• Comments on distinction between nosocomial and community acquired MRSA
			• Has some limited knowledge of tthe literature pertaining to MRSA in horses
			Question 2:
			• Understand the main risk factors for spread of MRSA as derived from experience in human hospitals and more limited experience from equine units
			• Sets in place a reasonable plan in relation to these risk factors involving the following key areas:
			  ○ Patient to patient transfer
			  ○ Colonised horse to patient transfer
			  ○ Colonised staff member to patient transfer
			  ○ Environmental transfer
			• Answer should include subjects such as cessation of clinical activities, assessing clinical practice (clothing, hand hygeine etc), disinfection procedures, use of antibiotics, tracing of in-contacts, isolation of infected and colonised horses, environmental sampling, horse sampling, human sampling, culture methods etc..

			• In comparison to A above, candidate will mention only some of the above and form less reasoned opinions on the suitability and logistics of such changes to hospital practice

C	50 – 59	– A good understanding of the subject but one which is generally limited to received opinions and basic information
		– Shows little in the way of personal insight and is generally unadventurous
		– May have quite a few factual errors
		– Addresses question set but may not fully understand it and may digress occasionally
		– May show signs of 2.1 quality in patches but miss a crucial issue demanded by the question
		– May be awkwardly expressed and plodding in manner
			Question 1:
			• Basic understanding of MRSA and its role in disease of humans and horses
			• Notes the risks to horses and potential risk to human health
			• Has some limited knowledge of the literature pertaining to MRSA in horses
			Question 2:
			• Sets in place a basic hygiene plan with limited insight into the peculiarities of MRSA as a specific pathogen (i.e. generic answer for infection control). May comment on only some of the following key areas:
			  o Patient to patient transfer
			  o Colonised horse to patient transfer
			  o Colonised staff member to patient transfer
			  o Environmental transfer
			• Answer should include subjects such as cessation of clinical activities, assessing clinical practice (clothing, hand hygeine etc), disinfection procedures, use of antibiotics, tracing of in-contacts, isolation of infected and colonised horses, environmental sampling, horse sampling, human sampling, culture methods etc..
			• In comparison to B above, candidate will mention only limited aspects of plan and show **minimal opinion** on the suitability and logistics of such changes to hospital practice.

D	40 –49	Answers will show a limited to very limited knowledge of the subject, although basic information will be provided – Will probably have quite a lot of factual errors, and may not really understand the question set – Will not tackle the question seriously, and may consist of superficial and short answers or merely notes – Awkwardly expressed and poorly structured	**Question 1**: Minimal knowledge of MRSA; possibly only aware that it is an emerging pathogen in equine practice/hospitals but providing no more discussion than that. Not aware of the means of resistance or the difference between nosocomial and CA MRSA **Question 2**: • Does not clearly mention/describe the key areas that must be tackled for infection control • May produce a generic infection control plan that lists items such as *isolation of infected cases* but shows little insight into why and the difficulties of implementing such plans • May have factual errors: e.g such as environment of no risk to horses, or humans no risk to horses
E	30 – 39	Characterised by error, misunderstanding, and irrelevance – Very insufficient answer to the question set, though with apparent awareness of what the question was about – Poorly expressed	**Question 1**: • Basic knowledge of MRSA **Question 2**: • Lists of control points rather than any discussion • Minimal points, e.g. only mentions cleaning the stalls and no mention of on-going control measures • Several or serious errors in the text: e.g. suggest that we should be using vancomycin in all these cases
F G H	20 – 29 10 – 19 0-9	Characterised by error, misunderstanding, and irrelevance – Clear misunderstanding of the question set and/or clear failure to answer it At lower end, an answer which provides no indication of what the candidate knows and understands about the question set	NO/MINIMAL ANSWER

		– Normally reserved for blank script books and answers of only a few lines	