

Infection Control: **Root Cause Analysis (RCA)**

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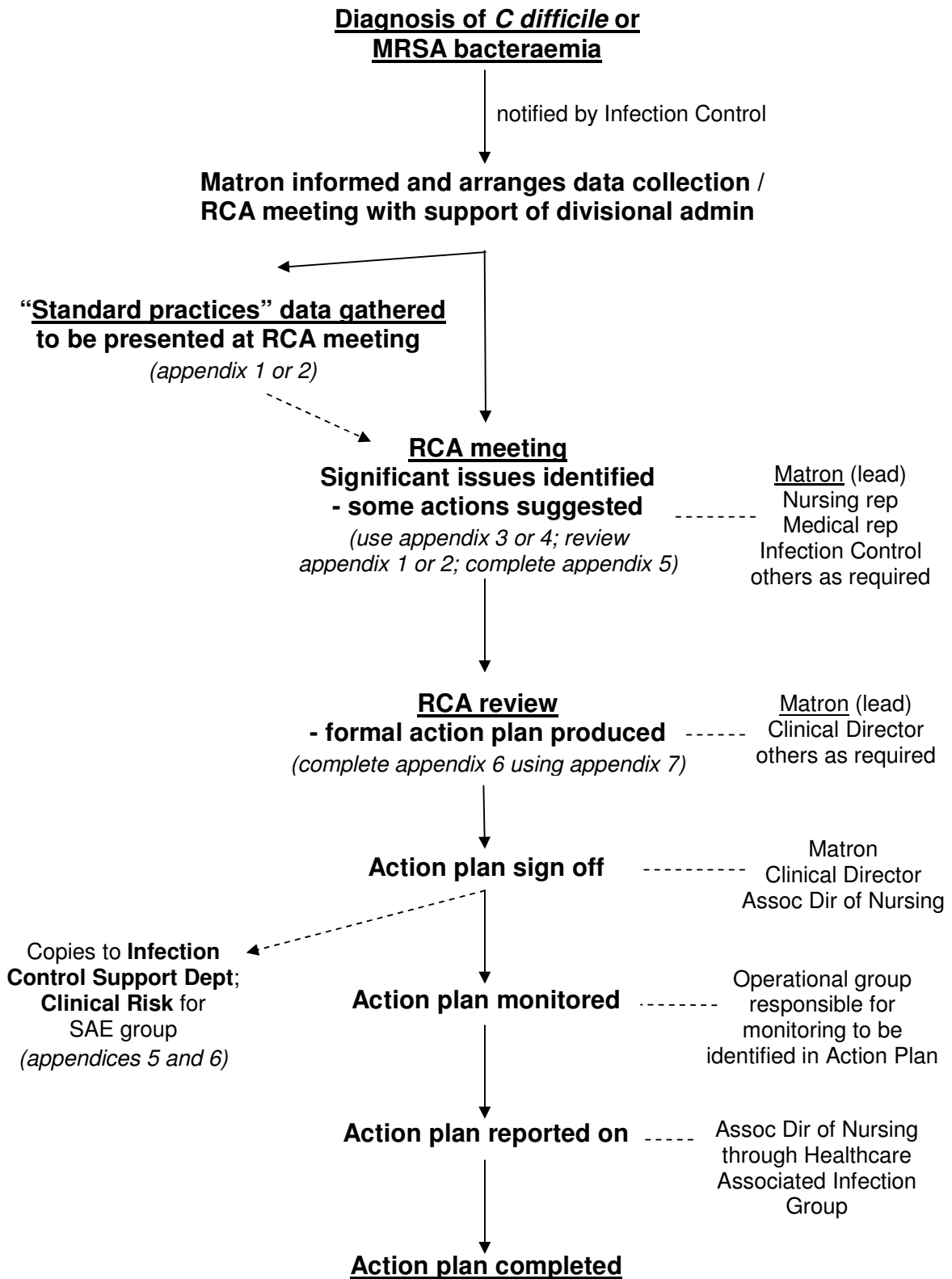
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RCA flowchart



Appendix 1: Trigger questions for MRSA-related RCAs

These questions are designed to help those undertaking the RCA and may lead the discussion to those areas that have been found to be important in other MRSA bacteraemia cases (and also MRSA infection at a venflon site). However, it is not mandatory to ask all questions and formal responses do not need to be recorded unless pertinent. It is the responsibility of each RCA review panel to ensure that they undertake the investigation most appropriate for the patient concerned.

Initial management following hospital admission

1. What date was the patient admitted to hospital?
2. Was the patient known to be MRSA positive?
3. If not known to be MRSA positive, was the patient known to be at high risk of carrying MRSA e.g. nursing home or residential care; >2 hospital admissions last 12 months; leg ulcer; urinary catheter etc
4. Was the MRSA risk assessment undertaken and documented within the medical notes?
5. Was MRSA screening undertaken for this patient - was this appropriate?
6. Where was the patient placed initially (e.g. side room) – was this appropriate?
7. Was there possible contact with other MRSA patients?
8. Were invasive procedures undertaken on this patient following (eg IV cannula or urinary catheter inserted)? Was this intervention appropriate? Is there evidence that the interventions were performed to an appropriate standard in the medical notes?
9. If the patient had invasive devices, were these appropriately monitored (e.g. VIP scoring)?
10. If the patient started antibiotics, was this in keeping with trust guidelines? Did the potential benefit of antibiotic treatment outweigh the potential risks?
11. If started on antibiotics, were appropriate samples taken before starting treatment e.g. two sets of blood cultures prior to IV therapy, MSU if possible UTI etc?
12. Was a blood culture sample taken by a trained and assessed staff member?
13. Was there a “valid date” for any antibiotic prescribing?
14. Is there evidence of appropriate review of prescribing, particularly in the light of patient response and culture results?

Start of symptoms of MRSA infection

15. When did symptoms start at the presumed focus of MRSA infection and is it documented well in the medical records?
16. Is there an assessment of disease severity in the medical notes (e.g. local signs and symptoms; systemic upset including temperature, WCC, CRP etc)?
17. Were appropriate sample sent to the lab promptly for testing?
18. If the patient was already known to MRSA positive, is this reflected in the medical notes?
19. Was reasonable empirical treatment given?

Diagnosis of MRSA infection

20. If the patient was in a “bay”, was the bed area thoroughly cleaned and documentation present in the notes to reflect this?
21. Were other patients in the bay screened for MRSA? Was this appropriate?
22. If not already happened, following the positive lab report, how quickly was the patient moved into a side room?
23. If not already happened, following the positive lab report, how quickly was treatment specific for MRSA commenced?
24. Was the MRSA treatment in keeping with trust guidelines?
25. Is there evidence of appropriate review of the patient’s progress in the medical notes?
26. Did the patient receive MRSA ‘suppression treatment’ during their stay? Was this appropriate?
27. Did the patient/relatives/carers receive any information about MRSA?
28. If the patient was discharged, was the letter to the GP sufficient to enable them to continue to give appropriate care?
29. If the patient died, who completed the death certificate and was the cause of death discussed with the supervising consultant and infection control?
30. Do the views expressed by the patient or their representative suggest better ways of doing things?

Appendix 2: Trigger questions for Clostridium difficile RCAs

These questions are designed to help those undertaking the RCA and may lead the discussion to those areas that have been found to be important in other C difficile cases. However, it is not mandatory to ask all questions and formal responses do not need to be recorded unless pertinent. It is the responsibility of each RCA review panel to ensure that they undertake the investigation most appropriate for the patient concerned.

Prior to undertaking the RCA, please refer to pages 6, 10 and 11 of the *Clostridium difficile* policy

Initial management following hospital admission

1. What date was the patient admitted to hospital?
2. Where did the patient come from?
e.g. nursing home, residential care (increased risk of *Clostridium difficile*)
3. Was diarrhoea and vomiting risk assessment undertaken and documented within the medical notes?
4. Has the patient had *C difficile* within the last 12 months? Was this reflected in the medical notes?
5. Does the patient have pre-existing risk factors?
e.g. bowel carcinoma, crohns, colitis, previous antibiotic use, taking proton pump inhibitors, recent bowel surgery, recent hospital admissions, chemotherapy
6. Where was the patient placed initially – was this appropriate?
7. Was there possible contact with other *C difficile* infected patients?
8. Was the patient weighed on admission? Evidence of malnutrition?
9. If the patient started antibiotics, was this in keeping with trust guidelines? Did the potential benefit of antibiotic treatment outweigh the potential risks?
10. If started on antibiotics, were appropriate samples taken before starting treatment
e.g. two sets of blood cultures prior to IV therapy, MSU if possible UTI *etc*?
11. Was there a valid end date for any antibiotic prescribing? Was this correct?
12. Is there evidence of appropriate review of prescribing, particularly in the light of patient response and culture results?

Start of diarrhoea

13. When did the patient commence with diarrhoea and was it documented in the medical records?
14. Is there an assessment of diarrhoea severity in the medical notes (*e.g.* frequency, stool consistency, systemic upset including WCC, CRP *etc*)?
15. Was a sample sent to the lab promptly for testing?
16. If the patient was in a “bay” was the bed area thoroughly cleaned and documentation present in the notes to reflect this?
17. Was a stool chart / fluid balance chart initiated?
18. Did the patient complain of abdominal pain or display signs of distension?

19. Was the patient immediately moved into a side room?
20. Was empirical treatment for *C difficile* given?
21. Were other antibiotics or other high risk medications ceased?

Diagnosis of C difficile infection

22. If not already happened, following the positive lab report, how quickly was the patient moved into a side room?
23. If not already happened, following the positive lab report, how quickly was *C difficile* treatment commenced?
24. Was the *C difficile* treatment in keeping with trust guidelines?
25. If not already happened, following the positive lab report, how quickly were existing medications reviewed?
26. How were other clinical teams on the ward made aware of this new diagnosis?

Treatment of C difficile infection

27. Was the side room cleaned twice daily with hypochlorite solution and was this recorded?
28. What method of hand hygiene was promoted? How?
29. If the patient did not respond to treatment after 3 days, was the consultant microbiologist involved in the patient’s treatment?
30. Were doses of treatment ever missed, eg through patient refusal or medical condition? Is this reflected in the medical notes?
31. Is there evidence of appropriate review of the patient’s progress in the medical notes?
32. Did the patient/relatives/carers receive any information about *C difficile*?
33. If the patient was discharged, was the letter to the GP sufficient to enable them to continue to give appropriate care?
34. If the patient died, who completed the death certificate and was the cause of death discussed with the supervising consultant and infection control?
35. Do the views expressed by the patient or their representative suggest better ways of doing things?

Appendix 3: MRSA bacteraemia RCA - Review of standard practices

Organisational environment

<i>Policy</i>	<i>Was there any breach of policy, if so, what? Is the policy appropriate, if not, why?</i>
<i>MRSA policy</i>	
<i>Screening policy</i>	
<i>Isolation policy</i>	
<i>Cleaning & decontamination policy</i>	

Practice environment

<i>Saving Lives audits</i>	<i>Date of last audit</i>	<i>Compliance score</i>	<i>Elements of non compliance</i>
<i>CVC insertion</i>			
<i>CVC continuing care</i>			
<i>PVC insertion</i>			
<i>PVC continuing care</i>			
<i>Urinary catheter insertion</i>			
<i>Urinary catheter continuing care</i>			
<i>Surgical site infection</i>			

Hand hygiene

When was the last hand hygiene audit undertaken?

What is the level of compliance with hand hygiene?.....

Are hand hygiene facilities readily available?.....

.....

.....

Are all staff compliant with Trust dress code?.....

.....

.....

Cleaning and equipment decontamination

When was the last "environmental audit for inpatient area"?

What was the score?

What is the frequency/audit trail for equipment decontamination?

.....

.....

.....

Are roles, responsibilities and accountabilities for equipment decontamination clear (Y/N)?.....
.....

Personal Protective Equipment (PPE)

What was the compliance score for the PPE element in the last Infection Control audit?.....
.....

Care environment activity

Was the environment staffed to its full establishment?.....
.....

What was the ratio of permanent /temporary staff?.....

Is the environment clean and free from clutter?

.....

Is bed spacing adequate to deliver clinical care?.....

.....

What are occupancy rates?

How many other MRSA patients were there around this time?

.....

Clinical area.....

Name of person completing form

Signature.....

Date

Appendix 4: C difficile RCA - Review of standard practices

Organisational environment

Policy	Was there any breach of policy, if so, what? Is the policy appropriate, if not, why?
<i>C difficile policy</i>	
<i>Cleaning & decontamination policy</i>	

Practice environment

Audits	Date of last audit	Compliance score	Elements of non compliance
<i>C difficile Saving Lives bundle</i>			
<i>Antibiotic prescribing audit</i>			

Hand hygiene

When was the last hand hygiene audit undertaken?

What is the level of compliance with hand hygiene?.....

Are hand hygiene facilities readily available?.....

.....

Are all staff compliant with Trust dress code?.....

.....

.....

Cleaning and equipment decontamination

When was the last "environmental audit for inpatient area"?

What was the score?

How do you know if bed space was clean before admission?

.....

Is enhanced cleaning available 24/7? (Y/N)

.....

If no, what arrangements are in place out of hours?

.....

.....

What is the frequency/audit trail for equipment decontamination?

.....

.....

Are roles, responsibilities and accountabilities for equipment decontamination clear (Y/N)?

.....

What disinfectant was used for equipment decontamination?.....

.....

.....

Personal Protective Equipment (PPE)

What was the compliance score for the PPE element in the last Infection Control audit?

Care environment activity

Was the environment staffed to its full establishment?

What was the ratio of permanent /temporary staff?.....

Is the environment clean and free from clutter?

Is bed spacing adequate to deliver clinical care?.....

What are occupancy rates?

How many other C difficile patients were there around this time?

Name of person completing form

Signature.....

Date

Appendix 6: Final Report/Action Plan

Name: Hospital No: DOB:	Root Cause Analysis – MRSA / <i>C difficile</i> Report / Action plan	
Clinical area:		
Date Prepared:	Participants in RCA	

1. Summary of Report / principal findings:

Outcome:

2. Issues around nursing care:

3. Issues around medical care:

4. Good practice identified:

5. Care environment issues:

6. Operational group responsible for monitoring action plan:

7. Action Plan:

Action	By Whom	Date(s) for Review / Completion

Action Plan sign-off

Prepared by;
Name of matron (*or deputy*).....

Signature.....

Date

Name of Clinical Director

Signature.....

Date

Name of Associate Director of Nursing

Signature.....

Date

Appendix 7: SMART Objectives

Formulating and monitoring a good action plan – being *SMART*!

For an Action Plan to be successful, all the actions need to be well chosen; it must be possible to tackle the issues that have been highlighted, and we should be confident that doing so would make a difference to the quality of care. We also need to have actions that we can monitor so that we know when the work has been completed (or not). This has been a weakness in some local RCA Action Plans to date.

The section below shows how the idea of SMART objectives might fit into the RCA process.

SMART - stands for Specific, Measurable, Achievable, Relevant, and Timely

- **Specific** means avoiding woolly aspirations like “*improve hand washing*”. You need to look beneath the surface and find out what is wrong with hand hygiene. Do staff actually know when they are supposed to wash their hands? Is it that staff are using poor technique? If they are not doing enough of it, is it because there are problems with accessing hand wash basins? If so, why? So, rather than saying “improve hand washing” you might say “all medical & nursing staff based on ward X to have an update of hand washing; this will cover ‘when to wash hands’ and the best practice technique”. **Specific** also means saying who is going to do it – otherwise it really won’t get done. In our example above, you might therefore say it will be the responsibility of Consultant X to arrange timing of sessions for medical staff, Matron Y to arrange timing of sessions for nursing staff, and infection control link nurse Z to deliver those educational sessions.
- **Measurable** means that your action can be measured. This obviously allows you to know where you are in working towards your target but also to let you know when you have achieved success. In the example above, you can measure the number of staff who have been given a time for their session and you can measure the number who have completed the training. Having measurable targets also improves your ability to provide feedback. For example, if the timetable of sessions for all medical staff goes up on a notice board, but there is nothing in place for nursing staff, this puts pressure on the matron to pull their finger out! And if training is going well it lets people know that they are giving their time to something that is really happening.
- **Achievable** is about not setting yourself up to fail. How many other targets have you got on the go at the moment and where would this new one come on your list of priorities? How ambitious is your target? You might manage a world first, but you would be far more likely to achieve something that has already been tried and tested somewhere else. Is it within your power to achieve your goal or are you critically dependant upon the actions of someone else who isn’t really committed to this aim? Looking at our objective, for example, does your link nurse have the skills and availability of time to do all this training? Do you need to have a preliminary step where the link nurse first gets an update from the Infection Control Team or does the team first need to provide better written materials to support the training? Do you first need to find out that your link nurse will be able to do 8 of the anticipated sessions but you will need to arrange bank nurse cover to allow 3 particular sessions to go ahead?
- **Relevant** means that it is relevant to the deficiency that you have identified in the RCA and to the change that you want to achieve. This makes sure that you don’t waste your time and energy working towards putting something in place that really won’t make a blind bit of difference at the end of the day. In our example, hand hygiene is extremely topical at the moment and we could always do better, but do you really think it was the major problem in this case? Might we get a better outcome focusing junior doctor time on getting better education around antibiotic prescribing and nursing time on driving more consistent review of IV antibiotics at 48 hours?
- **Timely** means putting in some dates so that you know when and how you should be measuring success. Without a deadline it will never happen. So, in our example, we might say that we will start immediately and allow 6 weeks for the Consultant X and Matron Y to arrange the educational time table, also allowing this period for the link nurse to pull together the educational material. We will then expect the sessions to be delivered to all staff over the following 3 months.