



Brighton and Sussex
University Hospitals
NHS Trust



Investigating a Root Cause Analysis in IV Therapy

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Summary

- Overview of carrying out an RCA in IV
- Identification of the need for RCA
- Who and how Investigations are done
- Reporting the RCA
- Implementations of recommendations
- Monitoring of the action plan

Importance of Root Cause Analysis (RCA) in IV Therapy

- RCA is a retrospective review of a patient safety incident
- Undertaken to identify
 - ❖ WHAT
 - ❖ HOW and
 - ❖ WHY it happened
 - ❖ What to do to reduce or avoid a recurrence

The importance of an RCA....

- The analysis is then used to
 - Identify areas for change
 - Recommendations and
 - Sustainable solutions to help minimise recurrence of the incident type in the future
 - Ensure that management is adhering to standards

Getting Started

- Need to classify the Incident
- Establishing a core investigation team
- Scoping the incident

(NPSA)

Levels of RCA investigation

- **Level 1- Concise Investigation**

- No, Low, Moderate harm incidents
- People Local incident can investigate

- **Level 2-Comprehensive Investigation**

- Actual or potential 'Severe or Death' PSI outcomes
- High level of detail/MDT/expert opinion/Independent advice

Level 3- Independent Investigation

Like Level 2 – high public interest

But commissioned and conducted by those independent to the organisation.

Identification and investigation of Incidence in the Trust

- Blood Cultures (BC) from pathology
- Infection Prevention Team (IPT)
- Datix
- Request ward manager to investigate
- This should be completed within 7 days
- Patient informed - Duty Of Candour (DOC)

Investigations

- The RCA toolkits will be provided by the IPT
- Interview all staff involved in the case
- A review of all patient records and documentations
- All the investigations will be recorded chronologically
- After completion the lead investigator will inform IPT

Reporting the RCA

- The Investigating lead will arrange for a meeting to report the RCA. The IPT, patient's consultant, and microbiologist must be in attendance
- The lead will inform team of findings - RCA
 - Gaps, if any, of care will be identified
 - Contributing factors, if any
 - Identify the root cause and make recommendations and action plan

Reporting RCA

- Reported to Infection Prevention Action Group (IPAG) within 4 weeks
- IPAG meets every Friday to discuss any Infection related issues in the Trust
- It is chaired by the Chief Nurse/DIPC
- Decides if it was Trust apportioned or non-Trust apportioned
- Approve or add to the recommendations made in the RCA

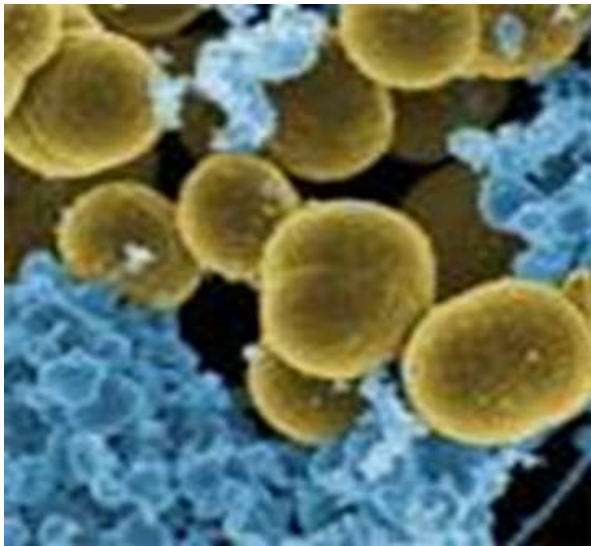


(Image from Google)

Case study 1



Methicillin Sensitive Staphylococcus Aureus (MSSA) bacteraemia



Case study

Why the case study?

- MSSA from a Peripheral Vascular Catheter (PVC)
- Epic 3 Guidelines (2013)
- Direct relevance in Trust Practices



(Google Image)

EPIC 3 Guidelines (2013)

- A recent update of a Cochrane review found no evidence to support changing catheters every 72–96 hours prevents/reduces infection, consequently, healthcare organisations may consider moving to a policy whereby catheters are changed only if clinically indicated. This would provide cost savings and spare patients the unnecessary pain of routine re-siting of devices in the absence of clinical indications
- To minimize peripheral catheter-related complications, the insertion site should be inspected at each shift change and the catheter removed if signs of inflammation, infiltration or blockage are present

Case Study 1

A 67 year old gentleman was admitted to Emergency department with a fall, dehydration, pyrexia and mild confusion. He had a history of Chronic Obstructive Airways Disease (COPD) and heart failure. A Peripheral Vascular Catheter (PVC) was inserted and he was started on slow IV fluids and oral antibiotics for suspected chest infection. As he was mildly confused and pulling at his PVC, the nurses applied a bandage. He was then moved to a short stay ward for the night and then onto a ward the next day.

Case study 1

No further IV fluids were prescribed as he was starting to take oral nutrition but the PVC was not removed.

On the 3rd day the patient complained of pain from the PVC site. Upon taking the bandage off the PVC site was red, inflamed slight discharge was noted.

The PVC was removed, the site swabbed and blood cultures taken. It was reported back that the patient had MSSA bacteraemia possibly from the PVC.

Being Open

Patient and family informed
Duty Of Candour (DOC) that
treatment is for
Staphylococcus
bacteraemia due
to PVC infection
(within 10 days
post
investigation)



Treatment

Patient commenced on IV antibiotics to treat the MSSA bacteraemia and stayed a further 7 days and also went home on oral antibiotics to completed the course.

(Image from Google)



Bacteraemia RCA Tool

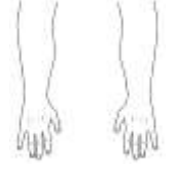

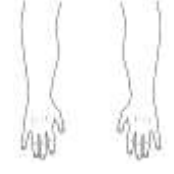
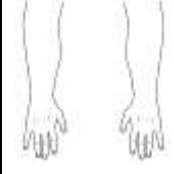
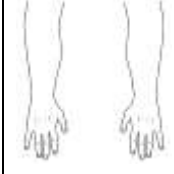
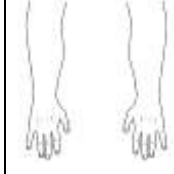
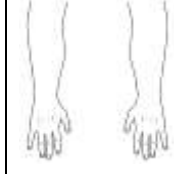
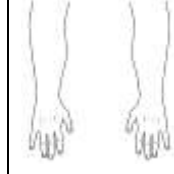
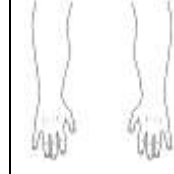
3a: Contributory Factors (TICK RELEVANT BOXES)

1. Communications and team working		6. Policy and protocol	
2. Training, skills and knowledge		7. Care pathway	
3. Workload and staffing resources		8. Patient-derived risk factors	
4. Environmental conditions		9. Treatment-derived risk factors	
5. Hand hygiene audit scores		10. Equipment and utilisable Resources	
11. Availability of single rooms		12. Other	

RCA

- Review of documents
 - PVC care bundles incomplete
 - Not all Insertion documentation was completed
 - PVC was not removed despite Trust policy.
 - Visual Infusion Phlebitis (VIP) score still documented as 0 even after MSSA diagnosis

PVC care bundles (Insertion)

Date/Time									
Rationale for cannula insertion:									
Position?									
Care plan adhered to? Y (yes) or N (no)									
Gauge of cannula:									
Cannula number:									
Sign & staff no:									

Visual Infusion Phlebitis (VIP) Score:

I.V site appears healthy	0	No signs of phlebitis. Plan - Observe cannula
One of the following is evident: slight pain or redness near IV site	1	Possible first signs of phlebitis. Plan – resite cannula
Two of the following are evident: Pain near IV site, erythema or swelling	2	Early stage of phlebitis. Plan – resite cannula
All of the following are evident: Pain along path of cannula, erythema & induration	3	Medium stage of phlebitis. Plan resite cannula & consider treatment
All of the following are evident & extensive: Pain along path of cannula, erythema, induration and palpable venous cord	4	Advanced stage of phlebitis or start of thrombophlebitis. Plan resite cannula & consider treatment
All of the following are evident & extensive: Pain along path of cannula, erythema, induration and palpable venous cord, pyrexia	5	Advanced stage of thrombophlebitis. Plan – initiate treatment & resite cannula

Recommendations

- Training and educational needs of ward nurses:
 - how to use the VIP score charts
 - ANTT during PVC insertion
 - Use of the newly revised PVC care bundle
- ANTT Policy

Recommendations

- PVC assessment to be part of bedside handover and to be documented on the handover sheets
- Review of the wards hand hygiene audits
- Appoint a ward Infection Control Link Nurse
- IV Team to assist in the above training and recommendations

Monitoring

- The Lead in RCA reports back to IPAG or DIPC
- Audits are done by IPT or designated persons
- Recurrences closely monitored
- The Trust needs to develop more robust monitoring tools

The problem with RCA

- <http://qualitysafety.bmj.com/content/early/2016/06/23/bmjqs-2016-005511.full>
(accessed 02/05/2017)

(Feerally et al 2016: BMJ)

Sakichi Toyoda

(Google images)



The 5 whys

- My car will not start. (the problem)
- Why? – The battery is dead.
- Why? – The alternator is not functioning.
- Why? – The alternator belt has broken.
- Why? – The alternator belt was well beyond its useful service life and has never been replaced.
- Why? – I have not been maintaining my car according to the recommended service schedule.

(google webpage)

Case study 2

A patient who was receiving 4 hourly intravenous antibiotics for endocarditis was started on the the wrong antibiotics. The drug was prepared by 2 nurses as per Trust policy. The drug chart was not available as it was in pharmacy to order more medication for the next dose.

Investigation

- Starts with Datix
- Send back to manager to investigate - 2 weeks
- Classify the Incident
- Establish the core investigation team
- Scope the incident

(NPSA)

Investigation Findings

- There was no drug chart during preparation of the medication
- Two nurses did not verify the identity of the patient.
- The drug chart was not available
- Two nurses did not check the infusion pump.
- Two nurses did not verify the some of the 5 'Rs'.
- Limited stock of medication on on the ward.
- There was lapse in care.

5 whys

Problem: Wrong drug partially administered

- Why: Lack of verification of patient identity & medication
- Why: Drug chart in pharmacy
- Why: To facilitate more medication
- Why: No further stocks on the ward
- Why: Failure to stock/order medication on time

Recommendations

- Stock the wards with regular medication
- Staffing the unit
- Nurses to dual check drugs as per policy

Be aware

- RCA's are a Retrospective account.
- Investigation by same team
- More than one contributing factor – not linear
- Responsibility for taking clinical practice – no blame culture
- Implementation of the recommendations

Summary

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References

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Thank you

Any questions?