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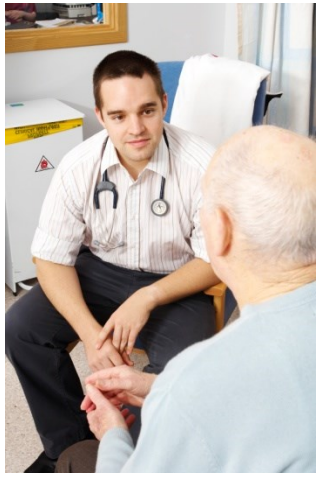
Learning from mistakes: optimum system configuration



Christine Dodd
Medication Safety &
Governance Pharmacist

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Vancomycin Wrong Route for *Clostridium difficile* infection

- Risk Description & Patient Outcome
- Chronology
- Root Cause
- Contributing factors
- Lessons Learned & Recommendations
- Sharing the Learning

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Risk Description

- Intravenous vancomycin prescribed and subsequently administered to patient requiring oral vancomycin treatment for *clostridium difficile* infection

- Patient administer x10 doses IV over weekend period
- Level of patient harm; Severe Harm STEIS
- Outcome: Patient died following surgical colectomy

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Chronology

Please Note	**This chronology includes the information relevant to the vancomycin RCA. The C.diff RCA has been investigated and reported separately.**
6th May 2016 09:35	Ciprofloxacin 500mg PO prescribed for urosepsis and advised to contact micro if patient develops diarrhoea as increased risk of *C.diff.*
15:25	Antimicrobial Pharmacist entry in notes as per Consultant Microbiologist advice: "1*) IV chloramphenicol (chest), 2) IV gentamicin (urine) 3) oral vancomycin to cover C.diff. Plus ask on-call pharmacist to review over the weekend".*
15:30	C.diff algorithm placed in medical notes by Infection Control nurse
16:00	Documented C.diff positive in medical notes and to treat with PO vancomycin 125mg QDS.
16:25	Vancomycin 125mg PO STAT dose prescribed by Dr 16:25, with a regular prescription for 125mg PO QDS administration.
16:45	Vancomcyin 125mg PO capsules amended with the intention of using the Vancomcyin injection orally by pharmacist. (N.B The route for the injection automatically defaulted to intravenous on JAC and the route was not amended to PO by the pharmacist).

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Chronology

16:45	Code “0” (drug unavailable) entered by nurse (1).
16:46	Dispensing list printed by pharmacist. Vancomycin dose and frequency crossed through by pharmacist and hand writen note requesting: *“Standard directions”* and 4 vials requested. (Route remained as intravenous and not challenged).
	4 vials vancomycin injection labelled, dispensed and checked as “temporary stock” and sent to the ward. (3 members of pharmacy team involved)
17:56	Vancomycin 125mg administered orally by nurse(1) but prescribed IV.”*Vancomycin given orally”* documented in Patient Progress Summary 20:00
21:45	Vancomycin 125mg administered IV by nurse (2)
7th May 07:32	Vancomycin 125mg administered IV by nurse (2)
08:10	Documented in Medical notes by CT1 :”*For PO vancomcyin*”
13:02	Vancomycin 125mg administered IV by nurse (3)
13:16	Further dispensing supply from Pharmacy requested by ward staff. Intravenous route of administration on the dispensing list was changed to PO by screening pharmacist, but the intravenous route remained unamended within the electronic prescription. 5 further vials of vancomycin injection were dispensed and labelled with instructions for oral administration. (3 further members of pharmacy team involved)

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Chronology

18:24 & 23:10	Vancomycin 125mg administered IV by nurse (4)
	"We have questionned the dosage of vancomycin - to continue" documented in Patient Progress Summary on that date.
8TH May 08:25	Documented in medical notes by CT1:"*On IV chloramphenicol and PO vancomycin. Plan 1) Continue IV and PO antibiotics."*
09:30 & 14:18	Vancomycin 125mg administered IV by nurse (3)
19:06	Vancomycin 125mg administered IV by nurse (5)
9th May 00:43	Vancomycin 125mg administered IV by nurse (4)
08:32	Vancomycin 125mg administered IV by nurse (6)
12:00	Incident identified during *clostridium difficile* RCA by Antimicrobial Pharmacist AH.
12:49	Vancomycin 125mg IV discontinued by prescriber
12:50	Documented in Medical notes. *"IV to PO Vanc for C.diff".* Vancomycin changed to PO treatment on EPMA.

Root Cause

- Human factors – failure by pharmacist to re-read amended prescription on EPMA and to amend route of administration
- EPMA configuration not supportive of pharmacy practice – preventable incident

Contributing Factors

- Amendments to in-patient prescriptions on JAC by pharmacist have automatic verification

Missed Opportunities

- Pharmacy team: to identify, clarify with nursing staff and resolve the error
- Nursing staff: to effectively challenge/escalate concern or consult medical notes
- Surgical team: to review prescribed treatment on EPMA
- Learning from near miss incidents: same incident with the same pharmacist had been reported May 2015 via dispensary near miss system

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Actions

- Pharmacy practice of using intravenous vancomycin injection orally as 1st line treatment stopped with immediate effect
- Vancomycin capsules to be used as 1st line
- EPMA bundle created for vancomycin injection to be given orally if liquid formulation required
- Share the learning – FY1, Pharmacists, Sisters & Matrons, Clinical Governance

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Actions

- Regular review of dispensary near miss data by MSO
- To consider implications for other injections used orally
- To include incident in Human Factors training
- Ward Sisters to encourage EPMA prescription review by medics during daily patient review
- To escalate to NHS Improvement
- JAC job request for in-patient prescription changes by pharmacist to require verification
- To encourage pharmacists to formally report EPMA configuration related errors

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Thank you

Any Questions?