Factors contributing to opioid errors in specialist palliative care services: A multi-incident analysis

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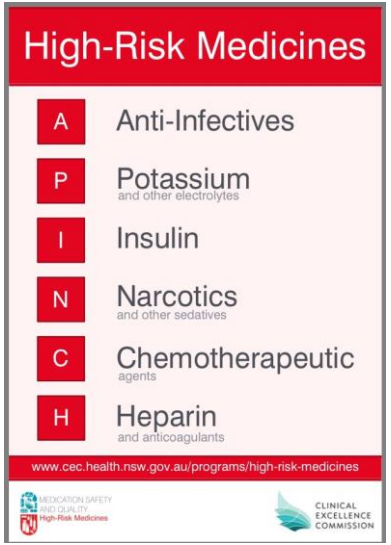
Medication errors in palliative care

- A quarter of palliative care clinicians report medication errors occur frequently in the palliative care setting and consider them to be a leading cause of error[1]
- Medication safety with **opioids**, specifically, identified as a palliative care patient safety priority[2,3]



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2. Dy, S. M. (2016). Patient Safety and End-of-Life Care: Common Issues, Perspectives, and Strategies for Improving Care. *American Journal of Hospice and Palliative Care*, 33(8), 791-796.
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Opioid errors in palliative care[1]

- Opioid errors account for approximately one-third of all reported medication errors
- Opioid administration errors are most commonly reported error type
- One-third of opioid errors result in patient harm requiring clinical intervention

Opioid errors in inpatient palliative care services: a retrospective review

Nicole Heneka,[1] Tim Shaw,[2] Debra Rowett,[3] Samuel Lapkin,[4] Jane L. Phillips[5]

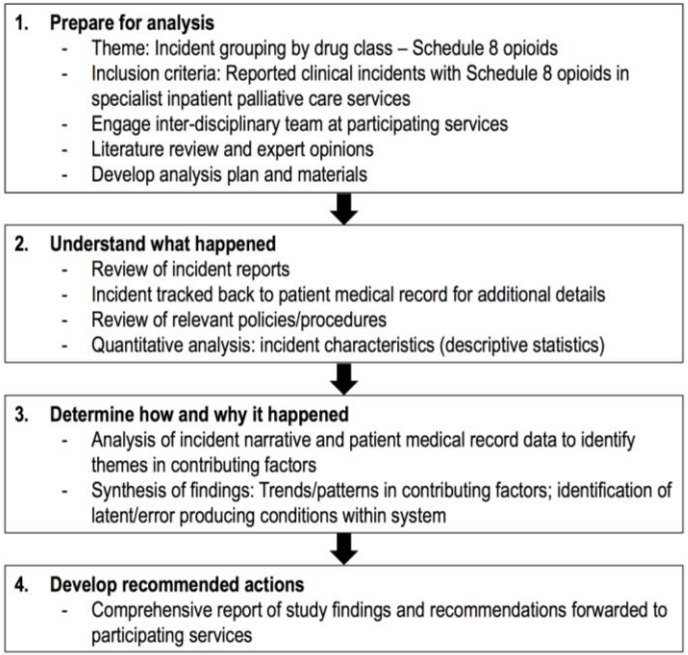
1. Heneka, N., Shaw, T., Rowett, D., Lapkin, S., & Phillips, J. L. (2018). Opioid errors in inpatient palliative care services: a retrospective review. *BMJ Support Palliat Care*, 8(2), 175-179. doi:10.1136/bmjspcare-2017-001417

Opioid error contributing factors[1]

- Design: Multi-incident analysis study
  - Simultaneous reviewing of multiple clinical incidents with a common theme (Schedule 8 opioids) to identify patterns/trends in incident characteristics and contributing factors
- Setting: Palliative care inpatient services (n=2) in New South Wales
  - Service 1: 43 beds; Service 2: 20 beds
- Review period: Three years (2013-2015)

1. Heneka, N., Shaw, T., Rowett, D., Lapkin, S., & Phillips, J. L. (2018). Exploring factors contributing to medication errors with opioids in Australian specialist palliative care inpatient services: a multi-incident analysis. *Journal of Palliative Medicine*, 21(6), 825-835. doi:10.1089/jpm.2017.0578

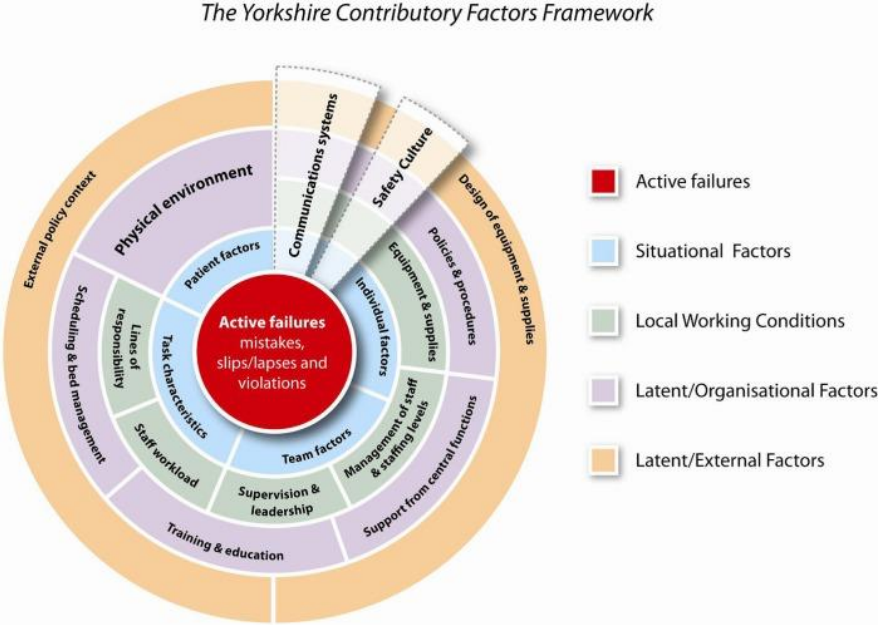
Methods: Multi-incident analysis[1]



1. Incident Analysis Collaborating Parties. (2012). Canadian Incident Analysis Framework. Retrieved from Edmonton, AB: Canadian Patient Safety Institute: http://www.patientsafetyinstitute.ca/en/toolsResources/IncidentAnalysis/Documents/Canadian Incident Analysis Framework.PDF

Data analysis

- Contributing factors categorised per the Yorkshire Contributory Factors Framework[1]
- Identifies multiple levels of contributory factors to clinical incidents in accordance with a systems approach to patient safety



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Active failures[1]

Slip: failure to execute an action due to misdirection of a routine behavior (skill based, unintentional), e.g., drawing the wrong drug into an infusion.

Lapse: failure to execute an action due to a lapse in memory, resulting in the omission of a routine behavior (skill based, unintentional), e.g., forgetting to administer a dose of regular analgesia.

Mistake: an error originating from an incorrect thought process or analysis (knowledge or rule based, unintentional), e.g., ordering morphine for a patient with a known allergy to morphine.

Violation: a deliberate deviation from rules, protocols, policies/procedures etc., (behavioral choice), e.g., failing to undertake a second person check before administering a high risk medicine.

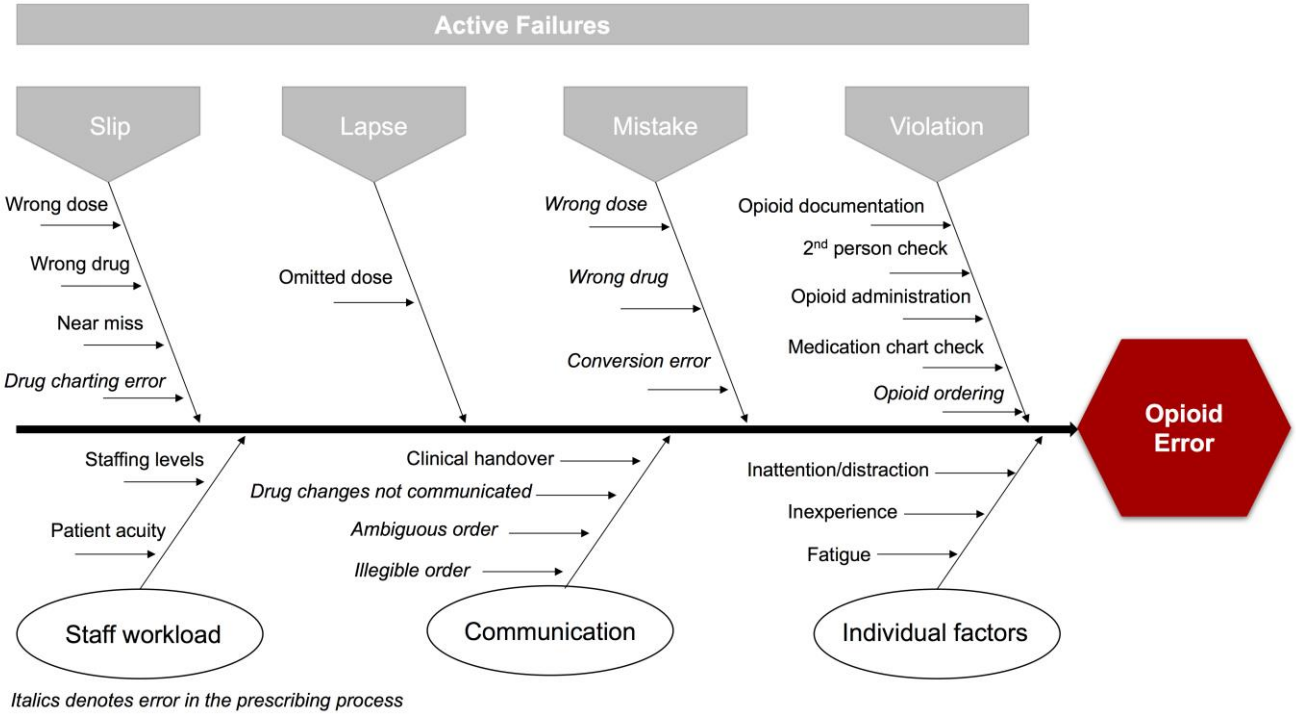
1. Reason, J. (1990). Human Error: Cambridge University Press.

Results – Patient demographics

Table: Patient demographics – reported clinical incidents with opioids

		N=73	(100%)
Gender	Male	38	(52.1)
	Female	35	(46.7)
Age (years)	Mean (*SD*)	72.2	*(±11.1)*
	Median (IQR)	74.0 (18)	
Cancer diagnosis	Yes	63	(86.3)
	No	10	(13.7)
Primary reason for admission	Symptom management	43	(58.9)
	End of life care	12	(16.4)
	Pain control	11	(15.1)
	Respite	5	(6.8)
	Palliative rehab	2	(2.7)
Length of stay (days)	Mean (*SD*)	23.3	*(±20.0)*
	Median (IQR)	17.0 (23)	
Died during admission	Yes	51	(69.9)
	No	22	(30.1)

Opioid error contributing factors



1. Heneka, N., Shaw, T., Rowett, D., Lapkin, S., & Phillips, J. L. (2018). Exploring factors contributing to medication errors with opioids in Australian specialist palliative care inpatient services: a multi-incident analysis. *Journal of Palliative Medicine*, 21(6), 825-835. doi:10.1089/jpm.2017.0578

Active failures (66%, n=53)

- Violations (42%)
  - Non-compliance with medication management policy
- Slips and lapses (30%)
  - Slips: wrong dose and wrong drug errors
  - Lapses: omitted dose errors (all)
- Mistakes (21%)
  - Prescribing processes, e.g., conversion error, wrong dose, wrong drug

Communication systems (17%, n=13)

- Communication during clinical handover
  - Failure to document/handover changes to administration route
- Written communication
  - Ambiguous orders/poor handwriting

'Patient presented to unit with fentanyl patches insitu. Patient was becoming intolerant to fentanyl and was rotated to another oral opioid, however nil documentation in progress notes of request to remove fentanyl patch noted. Found to still have patches on body when there was a verbal order to remove. On review of medication chart, order to remove patch was written over initial order, the modified request is unclear.' ID_20

Individual factors (12%, n=9)

- Inattention/distraction
- Inexperience
- Fatigue
- Underpinned by staff workload

'Regular subcutaneous morphine 5 mg due, subcutaneous hydromorphone 5 mg given instead. Nurses involved stated they had given several subcutaneous hydromorphone injections prior to this patient and did not pay sufficient attention to this (patient's medication order).' ID_43

Staff workload (10%, n=8)

- Increased workload due to staffing levels and/or high unit workload
- Increased workload contributed to errors regardless of staff experience
- Patient acuity

'Suspected wrong drug used in subcutaneous infusion pump – morphine instead of fentanyl. Two experienced staff involved in incident, neither staff member had a history of medication errors. Ward extremely busy at time of incident with more than normal requirements of breakthrough analgesia required for multiple patients.' ID_19

Multiple factors

'At 2300 patient was given 20mg breakthrough of oxycodone instead of 10mg. The wrong strength of medication was taken out of the cupboard and used. The shift was busy and the medication was not checked correctly against the order as outlined in the policy. Was also night shift and staff were fatigued.' ID_30

- Active failure: violation
- Situational factors: individual factors (fatigue)
- Local working conditions: staff workload

Error mitigating factors

- A number of incident reports highlighted the nurses' role in preventing/intercepting opioid errors
- Incident reports also suggested nurses initiated additional checks of opioid orders that were considered 'unusual' before administration

'Patient was admitted to ward from [external service], according to the medical discharge summary and medication chart from [external service], patient was on regular hydromorphone 0.75 mg per oral q4h, however, regular hydromorphone 7.5 mg per oral q4h was ordered by doctor. Nurse A and I double checked the dose given at [external service] and advised doctor who corrected the order on the medication chart.' ID_54

Considerations

- Medication errors are widely under-reported and dependent on clinicians' recognition of, and willingness to report, the incident
- Incident reports are often skewed towards 'active failures' and do not consider the 'systems' factors which may contribute to error
- Information in the incident narrative is often limited, restricting identification of contributing factors

Implications for future research

- To support safe opioid delivery in palliative care, it is essential to better understand the factors and conditions which may give rise to error:
  - Conditions which underpin active failures
  - Relationship between workload and rates of opioid error
  - Role of opioid safety and reporting culture
  - Palliative care clinicians' perceptions of factors contributing to opioid errors

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Thank you!

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