# Comparing Current Post-Cardiac Surgery Delirium Management Practices to the National Institute for Health and Clinical Excellence (NICE) 2010 Clinical Guideline on Delirium: Diagnosis, Prevention, and Management

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## Background

- Between 3 to 47% of cardiac surgery patients develop postoperative delirium.
- Delirium, an acute, multifactoral, confusional state causes a temporary global disorder in cognition and is deemed a major complication as it is known to increase morbidity and mortality as well as increase length of stay, decrease quality of life (patient/family distress and caregiver burden), and potentiate the need for a new admission to long-term care.
- Recommendations on delirium risk factors, evaluation tools and treatment options were released by the National Institute for Health and Clinical Excellence (NICE) in 2010.
- The post-cardiac surgery delirium rate in 2010/2011 at the Royal Columbian Hospital (RCH) was 2.5% (21/856).
- Prevention of the multiple contributors to delirium are addressed in Reimer-Kent's Postoperative Wellness Model© (Developed in 1995 by Jocelyn Reimer-Kent, RN, MN, Cardiac Surgery, Clinical Nurse Specialist).
- This model supports rapid surgical recovery and has been foundational to the cardiac surgery program at RCH since 1996.

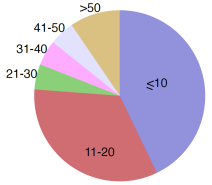

## Purpose

- Examine how closely the current delirium practices in the RCH Cardiac Surgery Program adhere to the NICE recommendations for the diagnosis, prevention, and management of delirium.

## Method

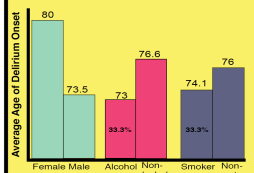
- Reviewed the NICE Clinical Guideline on Delirium.
- Developed a data collection tool based on the NICE Clinical Guideline on Delirium.
- Conducted chart audits on 21 cardiac surgery patients who had documented delirium in 2010/2011.
- Compared the RCH Cardiac Surgery Program delirium practices to the recommendation in the NICE Clinical Guideline on Delirium.
- Recommended changes to practice.

## Length of Postoperative Stay (Days)




| Length (Days) | Range | Mean | Median | Mode |
|---|---|---|---|---|
| Onset | 0-5 | 1.8 | 2 | 1 |
| CSICU Stay | 1-22 | 3.8 | 2.5 | 1 |
| Postoperative Stay | 5-153 | 26.8 | 12 | 8 |

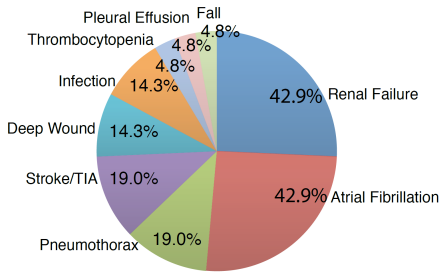
## Risk Factors for Postoperative Delirium




- 71.4% Male; 28.6% Female.
- 40.1% had a history of cognitive impairment.
- Non-smokers and non-alcohol consumers required higher surgery status* and acquired postoperative delirium.

*Surgery Status : Emergency > Urgent Priority I > Priority II > Priority III > Elective

## Co-existing Postoperative Complications




## Postoperative Progress

| Activities | Expected POD | Average POD | N |
|---|---|---|---|
| Mobilization* | 1 | 2 | 21 |
| Off Oxygen** | 2 | 6 | 21 |
| Initial Defecation | 3 | 3 | 21 |
| Urinary Catheter Removal | 2 | 3.6 | 20 |
| First Meal | 1 | 1 | 21 |

*71.4% continued physical activities during the delirium episode.
**On average, extubation was done in less than one day.

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## Delirium Interventions

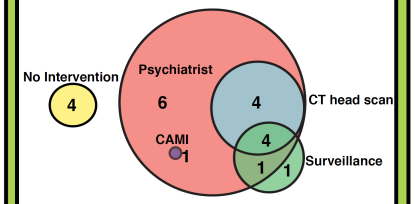
### Pharmacological

| | Taking NSAID | eGFR >60ml/min | NSAID Protocol |
|---|---|---|---|
| Yes | 8/21(38.1%) | 5/8 | 4/8 |
| No | 13/21(61.9%) | 3/13 | |

| Postoperative Medications | # of patients |
|---|---|
| Acetaminophen | 21 (100%) |
| Antiplatelet | 21 (100%) |
| Anticoagulant | 21 (100%) |
| Sleeping Medications | 18 (85.7%) |
| Haloperidol | 10 (47.6%) |
| Loxapine | 6 (28.6%) |
| Seroquel | 1 (4.8%) |
| Opioid | 9 (42.9%) |

During the delirium episode: 76.2% and 42.9% continued to recieve acetaminophen and opioid, respectively.

### Non-pharmacological




Only 4 (19.0%) patients received Psychiatrist, CT head scan and Surveillence as delirium interventions.

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## Recommendations

**Risk Factor Assessment and Management**

- NICE Clinical Guideline on Delirium recommends that patients at risk of delirium (e.g., age >65, present/past cognitive impairment, and/or severe illness) be assessed within 24 hours of admission for clinical factors* contributing to delirium and be managed by a multidisciplinary team as necessary.
- The Reimer-Kent Postoperative Wellness Model© addresses these clinical factors* in a preventative manner.

*Clinical factors: cognitive impairment/disorientation, dehydration/constipation, hypoxia, immobility/limited mobility, infection, pain, multiple medication, poor nutrition, sensory impairments, and sleep disturbance.

- According to the RCH cardiac surgery delirium management plan, all postoperative patients are to be assessed for delirium every shift and PRN and managed by a multidisciplinary team including support from the department of Psychiatry.
- There was evidence that Psychiatry was involved in 76.2% of patients with delirium.
- **Recommendation** – continue this practice.

**Documentation of Diagnostic Tool Use**

- NICE Clinical Guideline on Delirium recommends using a tool such as the Confusion Assessment Method Instrument (CAMI) to diagnose delirium.
- According to the RCH cardiac surgery delirium management plan, the CAMI is to be used to assess for the presence of delirium every shift and PRN.
- There was evidence that the CAMI assessment results were poorly documented (only in 1 chart).
- **Recommendation** – improve documentation of CAMI use/results.

**Pharmacological Intervention**

**Postoperative Delirium Management – Haloperidol**

- NICE Clinical Guideline on Delirium recommends the administration of Haloperidol to treat delirium.
- According to the RCH cardiac surgery delirium management plan, if a patient meets the CAMI criteria for delirium, they are to receive Haloperidol and this medication is embedded in pre-printed orders so nurses can start treatment at the first signs of delirium.
- There was evidence that identifying delirium did not lead to treatment.
- **Recommendation** – determine the rationale for withholding Haloperidol and explore what strategies are needed to ensure its immediate use once delirium is identified.

**Postoperative Pain Management – Non-opioids and Opioids**

- NICE Clinical Guideline on Delirium states that opioids such as morphine are not contraindicated (moderate quality evidence to show no significant effect of morphine of the incidence of delirium) and should not be withheld in delirium patients with acute pain, as ineffective postoperative pain relief is also a powerful contributor to delirium as opposed to a low dose opioid.
- According to the RCH cardiac surgery pain management plan patients are to receive around-the-clock non-opioids [acetaminophen +/- a non-steroidal anti-inflammatory drug (NSAID)] and an immediate release opioid (morphine 1 to 4 mg IV or 5 to 10 mg PO) for pain that is more than mild. It also stipulates that the outlined pain management should be continued during episodes of delirium.
- There was evidence that only 42.9% of patients continued to receive an opioid during an episode of delirium.
- **Recommendation** – determine the rationale for withholding an opioid and explore what strategies are needed to ensure its appropriate use once delirium is identified.
- There was evidence that 38.1% of patients with delirium qualified for a NSAID, yet not all these patients received this non-opioid.
- **Recommendation** – determine the rationale for withholding NSAIDs and explore what strategies are needed to ensure its appropriate use both as a potential preventive measure for delirium and for ongoing pain prevention once delirium is identified.
- There was evidence that 76.2% of patients with delirium received acetaminophen.
- **Recommendation** – determine the rationale for withholding acetaminophen and explore what strategies are needed to ensure its appropriate use both as a potential preventive measure for delirium and for ongoing pain prevention once delirium is identified.