



HEALTH QUALITY & SAFETY  
COMMISSION NEW ZEALAND

*Kupu Taurangi Hauora o Aotearoa*

## Breakthrough series collaborative on safe use of opioids in hospitals

October 2014 to March 2016

### **Information for DHB hospitals**

July 2014

## Contents

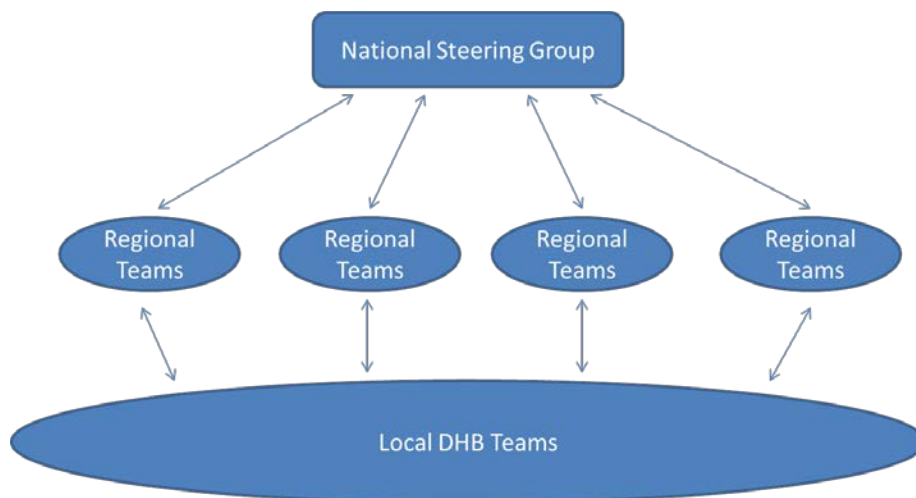
1.	Introduction.....	3
2.	Purpose.....	4
3.	Opioids .....	4
	Cost of opioid ADEs.....	5
4.	Formative approach.....	5
5.	The collaborative .....	6
	a) Collaborative project structure .....	6
	Overall Commission management and leadership .....	6
	National steering group .....	6
	Regional and local project groups .....	6
	b) Collaborative methodology.....	7
	Creating will.....	8
	Ideas.....	8
	Execution.....	8
	c) Funding.....	8
6.	Scope .....	9
7.	Measurement and Evaluation .....	9
8.	Expected outcomes and benefits.....	9
9.	Roles and responsibilities of local DHB teams .....	10
	DHB local clinical lead .....	10
	DHB local project lead .....	10
10.	Quality improvement charter.....	10
11.	Summary of milestones .....	11

## 1. Introduction

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The Health Quality & Safety Commission (the Commission) will partner with district health boards (DHBs) in implementing a national breakthrough collaborative on the safe use of opioids in DHB hospitals. This will commence in October 2014 and will run for a period of 18 months through to April 2016.

The collaborative will be based on the Institute for Healthcare Improvement (IHI) model for improvement. It will be run and driven from a regional level<sup>1</sup>, with oversight by the national steering group. DHB teams will drive the projects locally.



The collaborative will involve four learning sessions, supporting local DHB action periods when agreed interventions are tested. The collaborative will enable DHBs to learn from each other in a collaborative environment, share their experiences and trial improvements that identify best practices. The initial phase will focus on the development of the collaborative approach, understanding the uniqueness of each DHBs environment and sharing best practice from around New Zealand and overseas.

The goal of the Collaborative will be to reduce harm from opioids in DHB hospitals, and to build capability within DHBs in medication safety and quality improvement. It is expected the collaborative will also deliver a bundle of care and develop appropriate process and outcome measures. Any process and outcome measure for opioids developed as a result of this work may be placed into our overall measurement framework. A decision on whether they are viable quality and safety markers will be made in May 2016.

Clinical leadership is important to the success of this collaborative. The Commission is currently recruiting for a clinical lead for the collaborative. The clinical lead will be responsible for engaging with the sector and building strong clinical leadership and

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<sup>1</sup> The Northern Region will be run through *First, Do No Harm*.

networks. The clinical lead will also provide advice to the steering group and provide leadership support as required to the collaborative participants.

The expectation is that all DHBs will participate in the collaborative. It is acknowledged that various DHBs are at different stages of their understanding and implementation of the collaborative model and their monitoring of opioid-related harm.

## 2. Purpose

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The purpose of this document is to provide you with information on the breakthrough series collaborative on safe use of opioids in hospitals (the collaborative). This document outlines the scope, describes the collaborative methodology, describes accountabilities and responsibilities, provides an overview of expectations and describes the benefits for your DHB in taking part in this collaborative.

## 3. Opioids

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It is widely agreed from evidence and experience that as a class of medicines opioids are extremely useful. They are very effective analgesics, and it could be argued that without them, modern treatments, particularly many surgeries, could not be performed. However, they are not without adverse effects, and are known to cause considerable harm.

The extent of this harm has been demonstrated internationally and locally and is the reason that opioids have been at the top of the high-risk medicines list since 1989<sup>2</sup>. The harms include potentially life-threatening over-sedation and respiratory depression (leading to respiratory arrest if not recognised and corrected). Other common adverse effects associated with prescribed opioid therapy include nausea, vomiting, constipation, delirium, hallucinations, falls, hypotension, aspiration pneumonia, and addiction. Opioids have particular characteristics that exacerbate their high-risk including:

- many look alike or sound alike names and products – which can lead to errors in prescribing, dispensing and administration
- multiple different routes of administration can cause errors
- patients needing to be closely monitored for signs of respiratory depression and sedation
- interactions with other sedating medicines.

Opioids were the number one medication class causing harm when measured in the New Zealand Quality of Healthcare study (1998) and more recently in a study in three DHBs (2013)<sup>3</sup>. In both studies just over 17 percent of adverse events were caused by opioid use in hospitals.

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<sup>2</sup> Institute for Safe Medication Practices (ISMP). ISMP's List of High-Alert Medications. <http://www.ismp.org/tools/highalertmedications.pdf> (last accessed July 2014).

<sup>3</sup> Seddon, ME, Jackson A, Cameron C et al. The Adverse Drug Event Collaborative: a joint venture to measure medication-related patient harm. NZMJ 25 January 2013, Vol 126.

## **Cost of opioid ADEs**

American studies have found that opioid-related adverse drug events (ADEs) increased the length of hospital stay (LoS).

Two studies reviewed ADE rates and LoS in surgical patients.<sup>4,5</sup> The first, a retrospective study of 40,368 adult surgical patients, showed that opioid-related ADEs increased the average length of stay (LoS) by 10 percent ( $p < 0.001$ ) compared to non-ADE controls. Overall 1.8 percent (726 patients) had an opioid-related ADE.

In the second paper a national hospital database was reviewed to assess the impact of opioid-related ADEs on post-operative surgical patients. It found that among the 319,898 surgeries, 12 percent of patients experienced an opioid-related ADE. These patients had an increased LoS: 7.6 vs 4.2 days ( $P < 0.0001$ ).<sup>5</sup>

Another paper examined orthopaedic surgery. A retrospective review of a random sample of 402 patients<sup>6</sup> found high rates of opioid-related ADE (54 percent experienced one opioid-related ADE, 24 percent experienced two ADEs and 7 percent experienced three or more ADEs) and there was a linear relationship between the number of ADEs and increased LoS. The LoS increase for two ADEs was 15 percent ( $p = 0.02$ ), three ADEs 40 percent ( $p < 0.001$ ) and four ADEs 82 percent ( $p < 0.001$ ).

This increased LoS has additional financial cost for the hospital as well as emotional and financial costs to the patient. Reducing harm from opioids could be expected to reduce these costs.

## **4. Formative approach**

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There is no bundle of evidence-based interventions to implement to reduce opioid-related harm. Instead some potential interventions for the collaborative have been collated from a range of international patient safety campaigns, internationally recognised agencies and networks. The interventions have also been informed by opioid-related quality improvement initiatives already underway in New Zealand DHBs.

The Commission has formed an expert faculty to inform the collaborative on interventions. The expert faculty will also agree the percentage reduction in harm that the campaign will aim for. The faculty includes palliative care specialists, pain practitioners, anaesthetists, medication safety, and quality improvement specialists. Some of these experts will also go onto the national steering group.

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<sup>4</sup> Oderda GM, Said Q, Evans RS, et al. Opioid-related ADE in surgical hospitalizations: impact on costs and length of stay. *The Annals of pharmacotherapy* 2007;**41**(3):400-6 doi: 10.1345/aph.1H386[published Online First: Epub Date]

<sup>5</sup> Oderda GM, Gan TJ, Johnson BH, Robinson SB. Effect of opioid-related AEs on outcomes in selected surgical patients. *Journal of pain & palliative care pharmacotherapy* 2013;**27**(1):62-70 doi: 10.3109/15360288.2012.751956[published Online First: Epub Date]

<sup>6</sup> Pizzi LT, Toner R, Foley K, et al. Relationship between potential opioid-related adverse effects and hospital length of stay in patients receiving opioids after orthopedic surgery. *Pharmacotherapy* 2012;**32**(6):502-14 doi: 10.1002/j.1875-9114.2012.01101.x[published Online First: Epub Date]

Evidence for any one of the interventions identified is modest and is the reason why we are undertaking a formative collaborative, during which the most effective interventions will be identified and tested. At the end of the collaborative it is expected that we will have a best practice 'bundle' for the safe use of opioids with 'how to' guides that will enable uptake and spread across the sector.

The effectiveness of the breakthrough collaborative will be monitored through a range of structural, process, balance and outcome measures. The balance measures will ensure that a focus on the safe use of opioids will not negatively impact on appropriate pain management for patients.

## 5. The collaborative

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### **a) Collaborative project structure**

The following groups will need to be in place for the duration of the collaborative.

#### **Overall Commission management and leadership**

The collaborative will have a full time project manager, an improvement advisor (0.6 FTE) and a clinical lead (0.2 FTE) to lead, support, and manage the collaborative.

#### **National steering group**

A national steering group will provide overall guidance and leadership to the collaborative. This group will have overall accountability for the collaborative and will review progress / results and communicate across the system. The group will meet on a quarterly basis. The national steering group will consist of the following:

- clinical lead (collaborative)
- clinical lead (medication safety)
- national project manager
- national improvement advisor
- other appointed clinical specialists from the expert faculty.

#### **Regional and local project groups**

For successful implementation of this national collaborative, DHBs will be encouraged to establish regional project management groups to oversee and drive the collaborative in their region. These groups will be supported by the national project manager, improvement advisor and clinical lead where required. It is recommended that the regional teams comprise the following:

- regional clinical lead
- regional improvement advisor (as appropriate)
- regional project coordinator.

The regional teams will drive the collaborative initiatives with oversight by the national steering group.

The role of the regional clinical lead should be to:

- provide clinical leadership to the regional participants
- advocate for and promote the collaborative
- attend monthly meetings
- provide support and encouragement to regional teams engaged in the collaborative
- build strong clinical leadership and networks across the sector.

The local DHB implementation teams will drive the project locally and will receive training in improvement science. It is recommended that the local team comprise the following:

- local clinical lead
- local improvement advisor /quality improvement specialist
- local project lead
- consumer.

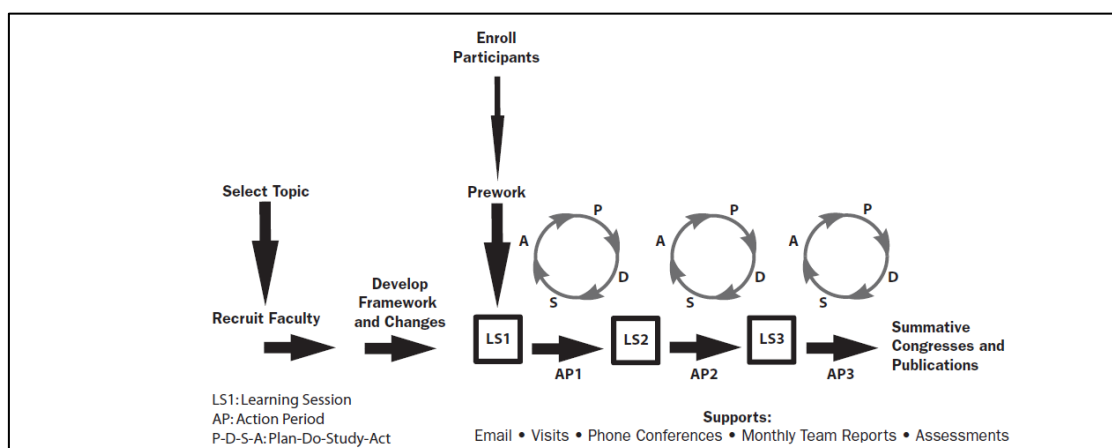
The coaching and support from the national project manager, improvement advisor and clinical lead will be at the individual DHB level as well as with the regional teams.

The national project manager and improvement advisor will work with all DHBs to support learning, implementation and measurement.

### **b) Collaborative methodology**

The Commission will use the IHI's breakthrough collaborative methodology<sup>7</sup> as a basis to focus the attention of DHB staff on the safe use of opioids (see figure 1).

*Figure 1: Key elements of a breakthrough collaborative*



A breakthrough series collaborative is a short-term (6–18 month) learning system that brings together a large number of teams from hospitals or clinics to seek improvement in a focused topic area. A collaborative includes:

<sup>7</sup> *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement*. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. (Available on [www.IHI.org](http://www.IHI.org))

- pre-work
- team coaching
- face-to-face and ‘virtual’ meetings in which teams learn from both experts and each other (national and regional as required)
- monthly reporting and assessments
- ongoing support from experts and peers during action periods, when organisations apply the learning and implement iterative tests of change.

The collaborative will trial interventions from an agreed list, decided on by an expert faculty including palliative care specialists, acute pain practitioners, medication safety and quality improvement specialists. As evidence for any one of these interventions is modest, the collaborative will be formative in nature with the aim of identifying the most effective interventions as a ‘bundle’. Participants will be encouraged to undertake rapid cycles of change (Plan-Do-Study-Act) using the interventions from the list, with reference to the local priority issues they identify. In addition to the listed interventions, the collaborative may identify others, for example non-pharmacological agents to prevent constipation.

As part of making sure the action periods stay on track, teams in this collaborative will report monthly progress on their Plan-Do-Study-Act cycles, using a 1–5 scale, where ‘1’ represents no progress and ‘5’ signals outstanding performance. The aim for all teams is to advance at least two-thirds of the way to their goals within one year.

Based on experience in more than 65 collaboratives, IHI has identified the elements most strongly associated with teams that achieve a ‘5’. These elements include the following.

### Creating will

- Support of leadership for the improvement project and the resources to do the improvement work.
- A clear understanding of how the improvement aligns with the organisation’s strategic priorities.
- A team with capable leadership and champions.

### Ideas

- Selection of high-leverage, evidence-based ideas.

### Execution

- Active and frequent testing of ideas.
- Using real-time measurement at the outset to guide the testing.

Each team typically sends three of its members to attend learning sessions, with additional members working on improvements in the local organisation.

## **c) Funding**

The Commission will pay for the travel and reasonable accommodation costs for two DHB collaborative participants per DHB to attend the two-day national learning sessions, which may be held in different locations around the country. Travel costs for two staff per DHB to



attend their regional learning session zero's will also be paid by the Commission. It is recommended that DHBs pay for at least one other collaborative staff member to attend these learning sessions.

## 6. Scope

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Ideally, each participating DHB will review their own baseline of opioid harm using the ADE/Global Trigger Tool, as a standardised tool. In addition, events from pharmacy reporting systems, complaints, and local incident/ event reporting will be used to identify local areas of concern.

Each participating DHB will decide which area(s) or ward(s) of the DHB will be participating in the collaborative.

## 7. Measurement and Evaluation

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As described above, each participating DHB will need to review their own baseline of opioid harm. DHBs will be required to consistently measure their progress using a measurement for improvement principle. These measures will be assessed throughout the collaborative to identify if they would make appropriate long term measures (process and outcome measures).

Collaborative participants will assess the viability of the manual collection of data with the aim of developing valid, reliable measures without undue strain on the health care sector workforce. The national project team will discuss with the local DHB teams what assistance they need in this process to ensure data collection is as easy and streamlined as possible.

## 8. Expected outcomes and benefits

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The collaborative will focus the attention of staff within DHB hospitals on safe and effective use of opioids and build their expertise and knowledge through practical application.

Participants will:

- receive guidance and instruction on the theory and practice of quality improvement
- collectively reflect on lessons learned
- have milestones for their individual DHBs' improvement
- benefit from direct access to each other and experts in the field of improvement and pain management (eg, palliative care and acute pain specialists)
- be supported and encouraged through learning sessions, webinars, conference calls, mentoring visits and emails.

The main aim of the collaborative will be to reduce harm from opioids in all DHB hospitals. The percentage reduction in harm that the collaborative will aim for will be agreed by the expert faculty.

As there is no universally accepted bundle of evidence-based interventions to implement to reduce harm from opioids, the goal of the collaborative is also to identify the most effective interventions. At the end of the collaborative, the Commission is aiming to have a best practice 'bundle' for the safe use of opioids with 'how to' guides that will enable uptake across the sector.

The collaborative will also increase the capacity and capability within DHBs in improvement science and breakthrough series collaborative improvement methodology, and will create a re-usable clinical network for further work to decrease harm from high-risk medicines.

## 9. Roles and responsibilities of local DHB teams

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### DHB local clinical lead

The local DHB clinical lead is absolutely pivotal to this initiative and although the time commitment in terms of 'hands on' is relatively insignificant at approximately one day a month, the support and positive influence for the initiative in terms of success is significant.

The local clinical lead will:

- advocate for and promote the campaign and participation in the collaborative
- support the DHB project leader in achieving the agreed aims and objectives
- contribute to the development of interventions
- actively remove barriers that could inhibit progress.

### DHB local project lead

Collaborative sponsors and leads from each DHB are encouraged to attend the collaborative learning sessions as well as encouraging other key stakeholders who would benefit from attending and are likely to influence and drive the initiative.

The local project lead will:

- be responsible for driving the collaborative
- motivate staff within the unit to innovate and participate
- problem solve in collaboration with the local, regional and national teams
- attend learning sessions
- drive measurement for improvement data collection
- celebrate successes.

A commitment from the clinical director/head of department is critical to the process as well as support and leadership from the area/charge nurse manager.

## 10. Quality improvement charter

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It is recommended that each of the DHB project leads develops a quality improvement charter in relation to the collaborative initiative/s. It is an important component of the collaborative as it lays the foundation of the project. The charter should describe what the project is, how you will approach it, and list the names of all stakeholders.

A quality improvement charter template will be available from the Commission and assistance with development of this can be supplied by the national project manager and improvement advisor where required.

## 11. Summary of milestones

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### June – July 2014

- Recruitment process for national improvement advisor, project manager and clinical lead.
- Begin stakeholder engagement (ongoing).
- Initial launch planning (ongoing).
- Expert faculty membership finalised.

### August – September 2014

- Resources/tools/education programme developed (ongoing).
- Education programme finalised and approved.
- Local implementation teams (LITs) identified and finalised.
- First meeting of expert faculty.

### October – November 2014

- *Open for better care* campaign forum.
- Resources/tools/education programme developed and approved.
- Learning session zero regional workshops begin October 2014.
- LITs – pre-work begins.

### November 2014 – January 2015

- LITs pre-work undertaken.

### February 2015

- Learning session one.

### June 2015

- Learning session two.

**November 2015**

- Learning session three.

**March 2016**

- Final collaborative webinar.

**May 2016**

- Collaborative evaluation complete.