Inadvertent post-operative long-term opioid use

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Background and suggestions for action

1. Opioids don't significantly improve pain or function for arthritis pain, and in fact may worsen both. Reducing opioid prescribing for this indication is not depriving patients of pain relief, it is preventing iatrogenic worsening of function and adverse medication events.

   https://www.ncbi.nlm.nih.gov/pubmed/29509867

2. If patients have been using opioids prior to presenting for their joint arthroplasty, then pain and functional outcomes are inferior, and complications are increased.

   https://journals.lww.com/jbjsjournal/Abstract/2017/05170/Impact_of_Preoperative_Opioid_Use_on_Total_Knee.1.aspx

   https://journals.lww.com/jbjsjournal/Abstract/2011/11020/Chronic_Opioid_Use_Prior_to_Total_Knee.5.aspx

3. Opioid use for longer than 30 days is associated with an increased rate of new onset depression, with the correlation being to duration in some studies and also to dose in others.

   Patients with chronic noncancer pain and depression are more likely than those without depression to receive opioids, convert to long-term use, take them at higher morphine equivalent doses (MEDs), and misuse and or abuse opioids. Mental illness and opioid use go hand in hand. Regional Australia has similar to higher rates of depression to metropolitan areas but significantly higher rates of suicide.

   http://www.annfammed.org/content/14/1/54.full

4. Peri-operative opioid use in regional areas: interim analysis of our data from peri-operative joint arthroplasty patients from the Hunter New England area (John Hunter/Coffs Harbour/Taree) shows around 50% of patients presenting for joint arthroplasty are using regular opioids pre-operatively despite no evidence of benefit for this indication and abundant evidence of harm, including worse surgical outcomes.

   Of those patients who are using pre-operative opioids 65% of our initial cohort are still taking them at least 3 months after surgery. This inadvertent long-term use is strongly correlated with the presence of pre-operative anxiety and depression.

   Of the opioid naïve patients presenting for their joint replacement surgery 35% remain on opioids at 3 months in the Hunter New England vs 15% in a Sydney metropolitan cohort.

   Please note that this is interim data from John Hunter, Taree and Coffs Harbour public hospitals. Lingard, Maitland and Gosford private hospitals have now agreed to be part of this study, so we will have pre- and post-op data for public and private patients by individual orthopaedic surgeons across the Hunter New England by the end of data collection to act as our baseline.

   https://www.ncbi.nlm.nih.gov/pubmed/29137580

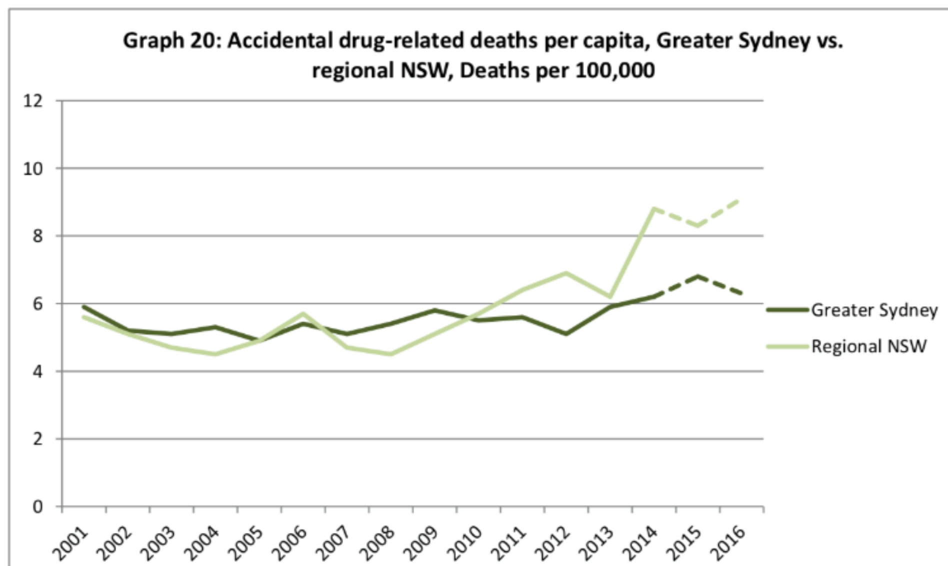
Patients and GPs may overestimate the benefit and underestimate the harms associated with opioids for arthritis. If a patient is booked for an arthroplasty, then GPs and patients are likely to think that there is a planned endpoint for use… that they will stop them when the joint gets replaced. If they live in regional areas and especially if they have anxiety or depression, then the majority do not cease after the joint replacement. (Study in progress, Collins et al.)

The end result is handing people from the regional areas the loaded gun of a long-term opioids. These drugs are initiated more often for people with depression, they cause new depression, they make existing depression treatment-resistant, and hand those with depression a weapon with which to accidentally or intentionally kill themselves. Sydney has had stable death rates compared to other state capitals, but the death rates are rising rapidly in regional NSW.

Today, the typical drug-related death is a man aged 40+ using a combination of pharmaceutical opioids and benzodiazepines and is increasingly likely to be living in regional Australia. In 1999, the typical drug-related death was a man in his early thirties using heroin or morphine, more likely in a metropolitan setting (*Australia's Annual Overdose Report 2018*, The Pennington Institute).

Accidental drug-related deaths per capita, metro vs. regional: NSW, VIC, QLD, WA

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greater Sydney	5.9	5.2	5.1	5.3	4.9	5.4	5.1	5.4	5.8	5.5	5.6	5.1	5.9	6.2	6.8	6.3
Regional NSW	5.6	5.1	4.7	4.9	5.7	5.7	4.7	4.5	5.1	5.7	6.4	6.9	6.2	8.8	8.3	9.1

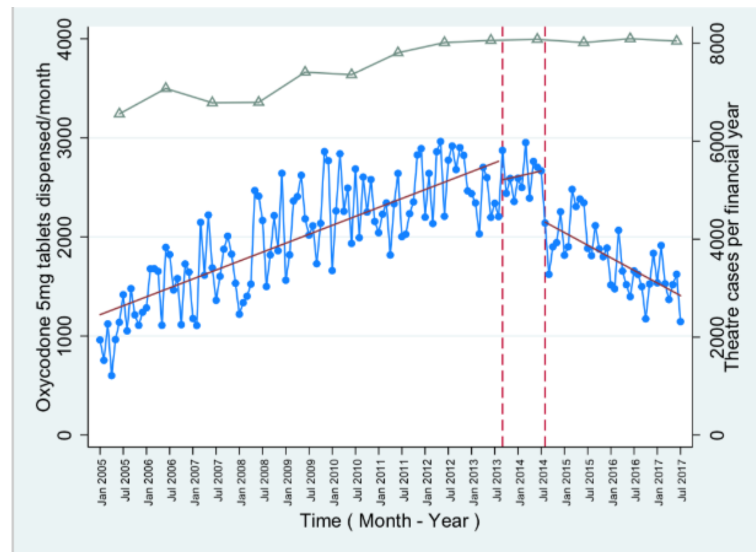


Suggestions for action:

Medical profession

a) Public hospitals – we know what works

In our project at St Vincent's Public, Sydney, we identified personal audit feedback as the key mechanism, and junior doctors as our key doctors, and increased adherence to guidelines by over 60% at minimal direct cost and overall cost saving to the hospital. Submitted for publication Stevens et al (copy attached).



Time series of monthly oxycodone prescriptions (left y-axis). Theatre cases per financial year shown on the right y-axis.

In order to give individual prescribing feedback to junior doctors we worked with eHealth NSW who produced the Pharmalytics system which is being made available throughout NSW. These sorts of data systems that produce clinically available and highly accessible prescribing information are vital to changing prescriber behaviour within public hospitals. This system is designed around feeding audit data back to clinicians.

b) Preventing inappropriate initiation and long-term use in the community

To change prescribing behaviour in regional areas we should initially target orthopaedic surgeons.

Joint arthroplasty is an occasion with large leverage potential, standardised outcomes, and evidence for harm and worse surgical outcomes with pre-operative opioids. Patient and GP behaviour may be altered if booking for an arthroplasty came with instructions to wean opioids. General Practitioner direct education has had no or minimal effect on prescriber behaviour and death rates in regional areas despite large efforts by the national prescribing service.

Orthopaedic surgeons may be the key medical people here.

If orthopaedic surgeons treat pre-operative opioid consumption in the same way as they treat pre-operative smoking and request that the GP supervise pre-operative weaning it may have a larger impact than direct GP education, which has been ineffective in a number of projects. Optimising impending joint replacement outcome can be used by GPs as incentive for patients to wean opioids pre-op.

Suggested actions around time of joint replacements:

1. Weaning pre-operative opioids where possible. This is useful to change the opioid consumption of the individual patient and also to message to GPs that if they start opioids for joint OA that the patient will be asked to wean pre-op. The GP may be less likely to initiate prescribing for subsequent patients.
2. Exercise as alternative analgesia pre-op. Not easy to support of course. The reduction in function associated with opioids preop is the opposite of prehabilitation.
3. Explicit expectation-setting around pain and analgesia for patients pre-operatively.
4. Clear post-operative opioid weaning plans for patients/rehab facilities/GPs.
5. NPS Medicinewise keen to support these. They have the expertise to manage these sorts of community-wide programs. They will be able to help development of literature and teaching to reinforce the above.

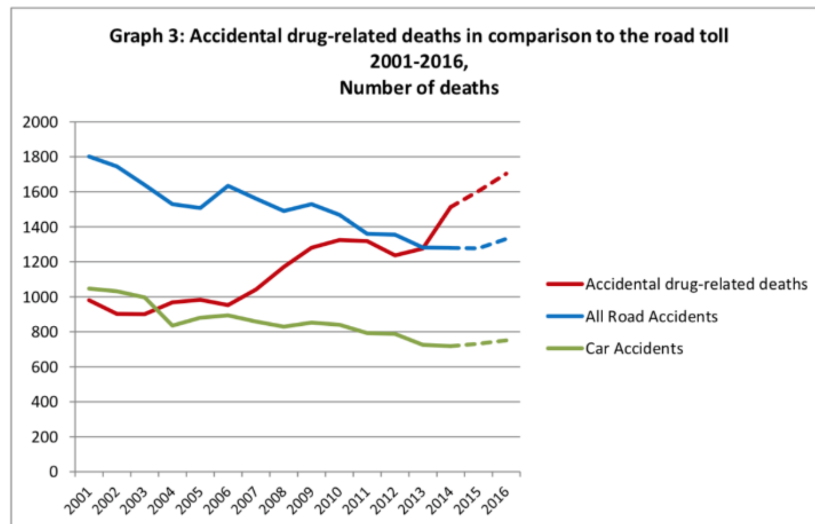
Back pain and spinal surgery show a similar pattern of heavy pre-operative use, high rates of post-operative continuation, and use correlating with anxiety and depression. I think this is a much harder problem to tackle for a large number of reasons. Lessons learned from the orthopaedic patients and doctors may inform the best way to tackle this.

Consumers

Depression in regional communities is a high-profile topic. The public need to know the link with depression, opioids and death. Educate the public to ask their GP not to give them opioids for arthritis pain. There is a massive failure to warn happening here. The money spent on educating GP's is producing a negligible result in this particular area. There are some amazing eloquent consumers with stories they are desperate to tell their fellow Australian consumers. I know many who are wanting to talk publicly.

Target regional and rural areas with an advertising campaign. Consumers have demonstrated power to determine the rates at which they are prescribed opioids. Those of Asian ethnicity in NZ consume less than 20% of the opioids of white NZ'ers. Consumers can influence the prescribing patterns of their doctors. (NZ Atlas of Healthcare Variation).

Initiation of opioids for acute pain can seem like a thoughtful, useful and innocuous intervention. For an increasing percentage of the population, especially in regional areas, it is not.



Australia's Annual Overdose Report, Pennington Institute, 2018.

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Proposed initial implementation in Hunter New England area

Funding application in progress:

NHMRC Partnership project

Partnership Projects will support connections, within the Australian context, that translate research evidence into health policy and health practice, to improve health services and processes.

The scheme aims to support the work of healthcare policy and service delivery implementation agencies by supporting the translation of research outcomes into policy and practice and the evaluation of current policy and practice to identify gaps in knowledge.

Partnership Projects will address the delivery, organisation, funding and access to services and programs that affect the health of Australians. Research may involve preventative programs, primary and community health care, hospitals, community services, the health workforce and infrastructure. This will include but not be limited to:

In relation to translating research outcomes into policy and practice:

- studies of mechanisms of knowledge transfer and exchange which will lead to improved Australian health outcomes through improved health services
- research involving preventative programs, primary and community health care, hospitals, access to services, workforce, infrastructure and funding
- utilise/apply existing evidence to develop advice
- increase reach and knowledge of how to implement through partnerships.

Proposed partners:

- South Eastern Sydney LHD - support gained
- Hunter New England LHD - next to approach
- Australian Orthopaedic Association - awaiting
- NPS Medicinewise – support gained
- Scriptwise – support gained
- UNSW as participating institution – support gained

Proposed timeline:

- July - Sept 2018. Approaches to proposed partners for initial support
- Oct - Nov 2018. Two-page outline to be developed with support of partners
- Dec 2018. Budget development
- Jan – Mar 2019. Development of grant proposal
- Mar 2019. Grant application submission