

## What Problem is Being Solved: 'preventability' and the case of pricing for safety and quality

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### Abstract

One of the critical issues facing healthcare systems internationally is to improve safety of care. Unfortunately, safety discussions, both in hospitals and in policy documents, often quickly turn to identifying and acting on 'preventable' mishaps. But preventability is a slippery concept, which this paper discusses.

A contemporary policy response is to introduce financial incentives in hospitals and/or states to improve safety, proposed for national implementation in Australia from

1 July 2017. This has the potential to change the internal dynamic of hospitals to enhance the focus on safety. The implications for hospitals of this change are also discussed.

*Abbreviations:* COAG – Council of Australian Governments.

*Key words:* safety of care; pricing; quality.

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Healthcare systems face challenges across four domains: equitable access; safety and quality of care provision; financial and workforce sustainability; and adjusting to the previous three challenges over time. It would be a luxury to face only one problem to be solved at any one time, without having to worry about the constraints in the other domains. The essence of management is dealing with situations of conflict, be it interpersonal conflict, conflict of goals or priorities, or conflicts of constraints.

In this paper I will reflect on the problems being faced in one domain: quality and safety of care, and within that, focus on safety. I will also limit my consideration to hospital safety and particularly challenge the concept of 'preventability' of adverse events and discuss the role of pricing in addressing hospital safety.

### What is the current state?

The recent review of hospital quality in Victoria reported that in 2014-15, there were more than 600,000 additional diagnoses recorded for patients that occurred after they

were admitted to hospital (see Table 1); about one in every eight patients had some form of complication during their stay.

**Table 1: Incidence of all hospital-acquired diagnoses classified by CHADx major class, Victorian hospitals, 2014–15**

MAJOR CHADX CLASS	PUBLIC	PRIVATE	ALL
01: Post-procedural complications	34,106	17,808	51,914
02: Adverse drug events	14,858	6,402	21,260
03: Accidental injuries	6,078	2,179	8,257
04: Infections	12,846	2,694	15,540
05: Cardiovascular complications	47,304	17,984	65,288
06: Respiratory complications	23,499	8,737	32,236
07: Gastrointestinal complications	36,815	19,118	55,933
08: Skin conditions	18,196	7,509	25,705
09: Genitourinary complications	27,575	9,753	37,328
10: Hospital-acquired psychiatric states	16,959	5,934	22,893
11: Early pregnancy complications	2,710	757	3,467
12: Labour and delivery complications	76,050	20,600	96,650
13: Perinatal complications	40,458	4,424	44,882
14: Haematological complications	12,994	3,970	16,964
15: Metabolic complications	45,536	10,743	56,279
16: Nervous system complications	4,245	1,429	5,674
17: Other complications	40,535	17,563	58,098
<b>Total</b>	<b>460,764</b>	<b>157,604</b>	<b>618,368</b>

This rate is probably significantly higher than patients would expect.

These raw numbers tell an incomplete story. The language used in the previous paragraph was carefully chosen: it simply referred to additional diagnoses (now usually simplified to 'hospital acquired' diagnoses) and complications. There is a plethora of terms used to indicate 'a patient was injured' or 'a mistake was made' in the course of healthcare, a situation which has been described as 'perplexing on a good day and near impossible on a bad one'. [2] A focus on mistakes can quickly be turned by the media into a hunt for people to blame. [3]

Describing the problem is only the first step toward solving it. While the table shows all hospital acquired diagnoses, it does not attempt to identify 'preventability' of any of the complications, nor grade those complications by their sequelae, which may be great (e.g. death) or small (treated and resolved with medication).

### **Preventability is not where to start**

Adverse events are, by definition, adverse, unfortunate and harmful. Thus one is immediately (and appropriately) drawn to what might be done to reduce them. The next common leap is to attempt to identify those adverse events which could have been prevented, or defensively define most harm as 'unpreventable'. This leap, to label as 'preventable' or otherwise, is flawed. A better approach is to look at all such events, and to identify where the rate in a particular hospital differs from the system-wide average or the hospital's own past trend.

The concept of 'preventability' in discussing safety in hospitals is fraught for seven main reasons.

The first is that different definitions of preventability abound with no consistency in terms of underlying logic, most being locally derived, and with weaknesses in almost all the definitions used. [4] Second is 'the eye of the beholder' problem: that is, inter-rater reliability in assigning this status to specific cases. Typically studies cite very low rates of agreement between reviewers of medical notes [5-9] Experienced reviewers only slightly improve agreement. [10]

The third problem is a temporal one. What might be 'preventable' changes over time and with advancing medical knowledge: what was not preventable yesterday (say, an adverse drug reaction) is preventable today because of better knowledge of patient factors predisposing to such a reaction. [11] With the new knowledge, the event becomes 'preventable' where it wasn't before. By ignoring those events

currently not deemed to be 'preventable', opportunities for developing such new medical knowledge are lost.

Fourthly, 'preventable' is location or facility-specific Diagnostic technologies to identify underlying disease, for example, may not be accessible in every facility in order to make a timely clinical decision. Thus, such judgements entail an implicit imperative to prevent adverse outcomes, regardless of the economic or geographic logic of doing so. The 'first do no harm' ethic is an important one in medicine, but increasingly, patient safety interventions face the same expectations of cost-effectiveness as other clinical interventions. [12]

Fifthly, when 'preventable' is treated as a dichotomous (yes/no) variable, opportunities may be lost to reduce rates of harmful clinical outcomes, even if such outcomes are not 'preventable' in every patient. [13]

Sixthly, studies of adverse events regularly report the proportion that are 'preventable' and any 'preventable' outcomes (for example, 'preventable mortality'). Describing an adverse event as preventable, however, might lead one to believe that, absent the adverse event, the patient's outcome would have been different. [14] Adverse events often occur in very sick patients (15), and it may be impossible to determine the extent to which their prognosis was affected by the adverse event. Few studies have attempted the difficult task of estimating the 'conditional prognosis'- the prognosis without the adverse event – Hayward and Hofer [7] being an exception.

The final and seventh problem with the concept of 'preventability' is that it is very easy to slip from an untoward event being 'preventable' to a hunt for whose failure it was that it wasn't prevented.

Contemporary best practice in safety is to understand the complex system factors involved in patient harm and to avoid blame. Learning from adverse events should be the goal of patient safety activities. [16-19]

Having fewer adverse events is certainly better than having more of them, but best practice is more about ensuring that future adverse events are avoided than identifying and pointing a finger at the individual who slipped up on a particular occasion. A good hospital is thus one which encourages reporting of incidents, [20] embraces the failure associated with adverse events, acknowledges what went wrong and puts in place systems or training to ensure that it is unlikely to happen again.

'Good' is thus not simply having an adverse event rate below a particular threshold, but rather having a culture that accepts and learns from such events.

### The place of pricing

The Council of Australian Governments (COAG) recently (1 April 2016) endorsed a new Heads of Agreement, which included the following commitments about pricing for quality and safety:

While most healthcare in Australia is associated with good clinical outcomes, preventable adverse events or complications continue to occur across the health system. By reducing hospital acquired complications, there is potential to not only improve patient safety, but also achieve efficiencies. The Parties ... will develop a comprehensive and risk adjusted model to integrate quality and safety into hospital pricing and funding.

- a. The model will determine how funding and pricing can be used to improve patient outcomes and reduce the amount that should be paid for specified adverse events, ineffective interventions, or procedures known to be harmful.
- b. This could include an adjustment to the amount the Commonwealth contributes to public hospitals for a set of agreed hospital acquired conditions...

The Parties agree to develop the model for implementation by 1 July 2017. [21]

Although well-intentioned, the phrasing of this commitment is a complete muddle.

Sub-paragraph a, for example, states that the funding model has two distinct objectives to 'determine how funding and pricing can be used to improve patient outcomes' and how the model can 'reduce the amount that should be paid for specified adverse events'. The latter objective is a legitimate and obvious one for a funding model. The former is not so clear. A funding system can certainly provide *incentives* to improve outcomes, but in and of itself, a funding model won't improve outcomes at all.

In addition, sub-paragraph a is quite broad, referring to 'specified adverse events, ineffective interventions, or procedures known to be harmful'; these are narrowed down to 'a set of agreed hospital acquired conditions' in subparagraph b.

The logic for providing financial incentives on hospitals to reduce rates of adverse events is quite sound and many options exist for how this might be done [22-23] but pricing incentives may not be the place to start for reducing

ineffective interventions, [24] or procedures known to be harmful.

### One solution, one problem

Nobel laureate in economics, Jan Tinbergen, famously established that multiple economic problems require multiple economic instruments to solve them. [25] The same is true in health policy: rarely can one solution fix multiple problems. Unfortunately the rhetoric around the COAG meeting did not make clear why a pricing strategy was being pursued to reduce adverse events, especially when the Australian Commission of Safety and Quality in Healthcare published a very sceptical literature review on this topic in 2013. [26]

Hospitals (and their clinicians) are influenced by a range of incentives, not all of which are financial: reputation and intrinsic motivations are very important to quality improvement in the health sector. [27] The pricing incentives proposed by COAG are a signal that heads of government (or their advisers) think that more action needs to occur in safety and quality. This may be an altruistic motivation – pushing the safety and quality agenda may reduce safety failures and benefit patients – but it may equally be motivated by a desire to reduce spending, or perhaps both as the second sentence of the quoted paragraph suggests.

### The implications for hospitals

It is tempting for hospital managers to deride any policy change as a poorly thought through unnecessary imposition, or, as a reader of this series of papers might infer, a solution to a problem which may not exist. So just what is the problem being solved with a potential new pricing regime?

Certainly no one can be complacent about the series of safety and quality scandals Australia has seen in recent years, so there is a real problem affecting real people. Introducing a safety and quality component into activity based funding is a logical next step. Governments and private health insurers are upping the ante on managers.

Changing the nature of the financial incentives on health service managers is part of signalling the importance of this issue. Managers cannot say that safety and quality issues are the sole preserve and responsibility of clinicians (if that ever were a reasonable position). Poor quality will directly impact on a hospital's performance.

Poor quality care costs money, [28] and hospital acquired diagnoses add millions to the cost of the Australian healthcare system. [29-31] Introduction of financial

incentives sheets responsibility for these additional costs back to where they belong – at the local hospital.

From a clinician's perspective, the introduction of a financial incentive for higher quality adds another basis for arguing for resources to improve quality of care. The new incentives mean that it is now in the financial interest of hospitals to improve their care, reinforcing other motivations, and making it feasible for clinicians to mount a 'business case for quality' [32] and for managers to garner the attention of their boards. [33]

The renewed focus on hospital safety and quality is to be welcomed, and not criticised as another imposition. Unlike other possible policy changes, introduction of a pricing incentive for safety is soundly based, and is not simply a case of a solution in search of a problem.

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