The Royal Australasian
College of Physicians

RACP Submission (2016): Consultation Paper on the Pricing Framework for Australian Public Hospital Services, 2017/18

Introduction

The Royal Australasian College of Physicians (RACP) welcomes this opportunity to provide feedback to the Independent Hospital Pricing Authority (IHPA) regarding its Consultation Paper on the Pricing Framework for Australian Public Hospital Services 2017-18.

The RACP has a strong commitment to safety and quality in healthcare and to policies that support the translation of high quality care into clinical practice, including policies which can reduce the incidence of adverse events such as sentinel events and Hospital Acquired Complications (HAC). These may include the funding reform models proposed in the Consultation Paper. However we approach these issues from the perspective that these funding models should be seen as only one of many policy tools to ensure that already available clinical knowledge about reducing adverse events and improving safety and quality is translated into daily clinical practice.

Due to the tight timeframe this submission concentrates on the proposed funding reform models for sentinel events and HACs. In particular, the following proposals are presented in the Consultation Paper:

- For sentinel events, it has been proposed that any public hospital episode of care (admitted or otherwise) with a sentinel event would not be funded in its entirety.
- For HACs, three possible options have been presented for consideration:
    - Under Option 1, HAC related diagnoses would be ignored during the DRG assignment process, ensuring that a HAC does not result in a higher complexity DRG being assigned. This will result in some episodes not getting additional funding due to the occurrence of a HAC.
    - Under Option 2, HAC rates would be measured for each hospital and funding would be adjusted accordingly based on differences in HAC rates. This could take the form of for instance reduced funding for hospitals with the highest quartile HAC rates or reduced funding to all hospitals with above average HAC rates.
    - Under Option 3, the National Efficient Price (NEP) for all hospitals would be calculated excluding all episodes of care with HACs, resulting in a lower NEP. **But** this would be combined with either (a) funding incentives for hospitals with the lowest HAC rates or (b) the savings from the lower NEPs being returned to the States to be invested in safety and quality programs.

This submission begins with an overview of general principles for consideration. It then goes on to review findings from the latest research on three related and relevant areas for consideration, namely the impact of similar proposals in the US, key findings from behavioural economics in designing financial incentive schemes and the importance of supportive non-punitive approaches for increasing safety and quality and healthcare. The submission then concludes with some recommendations regarding the sentinel event and HAC management options presented in the Consultation Paper.

General principles and conceptual framework

What the Consultation Paper refers to as sentinel events and HACs are essentially two kinds of adverse events - incidents in which harm results to a person receiving health care. The Consultation Paper treats these two categories of adverse events as differing in terms of magnitude of harm and preventability. It defines sentinel events as ‘a subset of adverse events that result in death or serious harm to a patient and occur due to systems and process deficiencies’ and ‘wholly preventable’. By contrast, the Consultation Paper regards HACs as amenable to clinical risk mitigation strategies which can reduce but ‘not necessarily eliminate’ the risk of HACs.

The Consultation Paper also distinguishes between ‘pricing’ versus ‘funding’ based approaches. The distinction is important because it has implications for assessment of the likely feasibility and effectiveness of the approaches being proposed. The distinction is as follows:

- A ‘pricing’ based approach would involve excluding particular episodes of care associated with adverse events prior to the calculation of the National Efficient Price (NEP), resulting in a lower ‘quality adjusted’ NEP that is then used as a basis for funding all hospitals. In other words, a ‘pricing’ approach evenly distributes the costs of adverse events through the hospital system – all hospitals are equally affected through a reduction in the NEP that they would receive for episodes of care regardless of their performance in reducing adverse events.
- By contrast, under a funding based approach, episodes of care involving adverse events would still be included in the calculation of the NEP. However adjustments in funding would then be made ***ex post***. In other words, a funding based approach would make adjustments to how the NEP is applied to particular hospitals, allowing for better targeting of funding adjustments. The Consultation Paper also distinguishes between two different approaches under a funding based approach, namely **episode-level funding** approaches and **hospital-level funding** approaches.
    - Under episode-level funding approaches, a decision can be made not to apply the NEP to particular individual episodes of care. Obviously this still affects individual hospitals based on the composition of their episodes of care.
    - Under hospital-level funding approaches, funding adjustments in terms of the application of the NEP are made at the hospital level based on their falling into a particular class (e.g. being in the highest or lowest quartile in terms of HAC rates).

This assessment of these two approaches, which has informed our feedback on the specific options presented for consultation, are that:

- A pricing based approach is the blunter instrument of the two and may be insufficiently well targeted to affect hospital performance as intended, insofar as a lower ‘quality adjusted’ NEP would be applied to all hospitals equally regardless of their performance. Hence in general, a funding based approach is to be preferred. (We note that Option 3 offers a variation which combines these two approaches).
- Of the two funding based approaches, a hospital-level funding approach is more complex to implement but could potentially be more effective and equitable in its application than a simple episode-level funding approach.

The RACP understands that regardless of which approach is ultimately adopted, IHPA has been directed to take account of ‘different patient complexity levels or specialisation across jurisdictions and hospitals’ in order to ensure that hospitals are not unfairly penalised if they experience higher costs due to factors that are largely outside their control, such as demographic factors specific to the populations they serve. The implication of this consideration is that special adjustments may be needed when ranking the performance of particular hospitals which are likely to shoulder a higher burden of complex care. This is an essential precondition of any future reform as failing to take account of these factors would result in unfairly penalising particular hospitals and the populations they serve. Expanding on this point (that factors outside a hospital’s control should be calibrated for), we specifically recommend that a hospital’s case mix should be calibrated against complexity as identified in the DRG, and for particular case mixes to have special arrangements if they have a baseline unavoidable rate of complications e.g. transplant surgery and peritonectomy surgery.

Lessons from the research literature and recent initiatives

This section reviews findings from the latest research on three related and relevant areas for consideration, namely the impact of similar financial incentive schemes in the US, key findings from behavioural economics in designing financial incentive schemes and the importance of complementary non-punitive approaches towards increasing safety and quality and healthcare.

The evidence on financial incentives for reducing adverse events

As noted previously, the options being proposed for treatment of sentinel events and HACs are slightly different. The approach proposed for sentinel events is an episode-based funding approach, and it was chosen in preference to a pricing approach because, as the incidence of sentinel events is minimal (there were only 102 in 2014), removing episodes associated with sentinel events from the calculation of the NEP would make a negligible difference.

By contrast the proposed options for treating HACs are a mixed bag. Option 1 is also an episode-based funding approach but one involving reduced funding rather than complete non-payment; Option 2 involves adjusting funding between different hospitals based on their performance; while Option 3 is a hybrid that combines a pricing-based approach of setting a lower 'quality adjusted NEP' and redistributing the money saved back either to high performing hospitals or safety and quality programs.

However, regardless of the form that these approaches take, they can all be characterised as financial incentives based approaches for reducing adverse events, where financial incentives refer not only to additional payments for improved performance but also disincentives (i.e. reduced payments) to penalise poor performance.

In 2013, IHPA commissioned a literature review on integrating safety and quality into hospital pricing systems including through the use of incentive schemes. This review is highly relevant and is cited in the Consultation Paper, and concluded that:

> '… much of the current research literature reviewed reflects poor research designs with inadequate controls making attribution of the effects uncertain. The conclusion is that there is insufficient international evidence at present to support the 'off the shelf' adoption of any existing pricing model that incorporates financial incentives and/or sanctions for quality and safety.' [1]

The review authors concluded that if financial incentives are to be used to increase safety and quality in healthcare (such as by reducing adverse events) their design should take into account the following considerations:

- Incentives have to be substantial to have any impacts.
- Incentives should ideally be delivered at the level of the clinical department to have any effect.
- The impact of any proposed model needs to be modelled and carefully evaluated both prior to it being implemented and at regular intervals. The modelling and evaluation should include consideration for regional disparities.
- Incentives need to focus on engendering improvement across all hospitals rather than just rewarding hospitals/services that are already performing well.
- Potential perverse incentives need to be taken into account.
- Methodologies for risk adjustment need to be developed and incorporated.

These considerations are highly relevant particularly if we consider some recent additions to the literature since 2014.There are a number of highly pertinent US studies that have tried to assess the impacts of the 2008 decision of the US Centre for Medicare and Medicaid Services (CMMS) to cease reimbursement for a list of for preventable HACs (known as hospital acquired conditions in the US rather than hospital acquired complications).

Eight of these studies attempted to measure the impact of the 2008 CMMS decision on the incidence rates of some selected HACs. These studies did not track all the conditions targeted for

[1] Eagar K, Sansoni J, Loggie C et al. (2013) A Literature Review on Integrating Quality and Safety into Hospital Pricing Systems. Centre for Health Service Development, University of Wollongong.

non-payment by the 2008 policy but have tended to focus on one or more of the following conditions:

- central line–associated bloodstream infections (CLABSI) including vascular catheter-associated infections (VCAI)
- catheter-associated urinary tract infections (CAUTI)
- pressure ulcers, and
- in-patient falls.

Of these eight studies, four found that the policy had no statistically significant impact on these events (these studies are discussed in greater detail in **Appendix 1**)[2].

Of the remaining four studies which did detect a statistically significant impact, one reported a discrepancy between a recorded reduction in billing rates for VCAIs and CAUTIs versus no change in the national administrate surveillance datasets for these conditions and concluded that the non-payment policy had merely resulted in a change in billing and coding rather than a change in clinical behaviour leading to an actual reduction in those conditions.[3]

For the remaining three studies which reported more positive effects from the non-payment policy in improving clinical behaviour and leading to a reduction in the incidence of selected HACs:

- One study found the non-payment policy only had an impact on the lowest quartile hospitals (in terms of profitability) in reducing the rate of CLABSIs but did not have an impact on the highest quartile hospitals which had already recorded reduction in their rate of CLABSIs prior to the 2008 policy[4]. This suggested and is consistent with the hypothesis that financial incentives (or disincentives) have to be substantial to have any impact as the authors hypothesised that the lowest quartile hospitals were responsive because they had the most to lose from not reducing their HAC rates.
- One study looked at the impact of the non-payment policy on four conditions – CLABSIs, CAUTIs, inpatient falls and pressure ulcers[5]. Of these four conditions, only CLABSIs and CAUTIs were responsive to the non-payment policy but inpatient falls and pressure ulcers were not. The researchers explained this difference as being attributable to the fact that pressure ulcers and inpatient falls are generally more amenable to reductions by improving hospital processes than are CLABSIs and CAUTIs.
- One study looked at the impact of the non-payment policy on VCAIs and CAUTIs and found an impact on VCAIs but not on CAUTIs[6]. This was explained as being due to VCAIs being more expensive to treat than CAUTIs, and so the threat of not being compensated for VCAIs-associated episodes was a greater motivating factor in reducing the rate of VCAIs.

[2] Lee GM, Kleinman K, Soumerai SB, et al. Effect of nonpayment for preventable infections in U.S. hospitals. New England Journal of Medicine. 367(15):1428-37, 2012 Oct 11; Meddings J, Reichert H, Rogers MA, et al. Under Pressure: Financial Effect of the Hospital-Acquired Conditions Initiative-A Statewide Analysis of Pressure Ulcer Development and Payment, J Am Geriatr Soc. 2015 Jul;63(7):1407-12; Schuller K, Probst J, Hardin J, et al. Initial impact of Medicare's nonpayment policy on catheter-associated urinary tract infectionsby hospital characteristics. Health Policy 115 (2014) 165–171; Vaz LE, Kleinman KP, Kawai AT, et al. Impact of Medicare's Hospital-Acquired Condition policy on infections in safety net and non-safety net hospitals. Infection Control & Hospital Epidemiology. 36(6):649-55, 2015 Jun.

[3] Kawai AT, Calderwood MS, Jin R, et al. Impact of the Centers for Medicare and Medicaid Services Hospital-Acquired Conditions Policy on Billing Rates for 2 Targeted Healthcare-Associated Infections. Infection Control & Hospital Epidemiology. 36(8):871-7, 2015 Aug.

[4] Calderwood MS, Vaz LE, Tse Kawai A, et al. Impact of Hospital Operating Margin on Central Line-Associated Bloodstream Infections Following Medicare's Hospital-Acquired Conditions Payment Policy. Infection Control & Hospital Epidemiology. 37(1):100-3, 2016 Jan.

[5] Waters TM, Daniels MJ, Bazzoli GJ, et al. Effect of Medicare's Nonpayment for Hospital-Acquired Conditions Lessons for Future Policy. JAMA Intern Med. 2015;175(3):347-35

[6] Peasah SK, McKay NL, Harman JS, et al. Medicare Non-Payment of Hospital-Acquired Infections: Infection Rates Three Years Post Implementation. Medicare and Medicaid Research Review 2013 3(3)

Although the three studies provide some prima facie evidence that financial incentives, whether in the form of tapered reductions or non-payment, could reduce the incidence of adverse events, caution is still needed in interpreting these results because these same studies suggest that:

- Some adverse events are significantly more responsive to financial incentives (or disincentives) than others. This suggests that more research is needed into whether the current list of sentinel events and HACs used by IHPA are actually amenable to being reduced through clinical risk mitigation strategies.
- At least two of the studies also show that the changes in clinical practice are premised on the healthcare service providers being at risk of losing significant amounts of funding if they are unable to reduce the rate of adverse events. This raises the question of whether the risk being placed on particular providers in order to incentivise clinical change to reduce adverse events is proportionate or whether less punitive measures are also needed to facilitate this (the two are also not mutually exclusive, as discussed in a later section).

It is also relevant to consider the findings of a number of other studies which did not focus directly on the impacts of the policy on HAC rates but looked at other impacts or considered the question of preventability of HACs in general. Of the four studies that we reviewed:

- Two studies identified a number of HACs that are intrinsic to particular patient populations[7].
- One study conducted interviews with administrators of 'safety net hospitals' following the policy and found that very few hospitals had implemented new care practices in response to the policy and had instead focused on documenting conditions that are present for patients on admission[8].
- One study documented discrepancies between the claims data on CAUTIs compared to the surveillance data and concluded that current US claims data were not valid data sets for comparing hospital-acquired CAUTI rates for the purpose of public reporting or imposing financial incentives or penalties[9]

The findings of these studies reinforce the caveats discussed earlier and suggest additional ones:

- Not all HACs or sentinel events will be equally amenable to reductions through policy incentives.
- Better investment in data collection and measurement and better hospital information systems is a precondition of an effective financial incentive scheme. Otherwise the initiative may prompt changes in how hospital activity is coded rather than the desired change in clinical behaviour.

Lessons from behavioural economics

It is important that financial incentives do not become the sole motivator for clinical change. There is a growing body of evidence from the field of behavioural economics which suggests that, in some cases, financial incentives can have perverse or counter-intuitive effects. For instance, there is some evidence that extrinsic motivators, such as monetary incentives or punishments, can undermine intrinsic motivation[10]. This means that the provision of a financial incentive or disincentive may merely end up substituting for or weakening the intrinsic motivations people had to undertake particular activities. For instance, an intrinsic motivation for physicians may be the sense of pride and professionalism that comes from a job well done. Financial incentives must therefore be designed in a way that works with these intrinsic motivations rather than against them.

[7] Lidor AO, Moran-Atkin E, Stem M, et al. Hospital-acquired conditions after bariatric surgery: we can predict, but can we prevent? Surg Endosc. 2014 Dec;28(12):3285-92; Molena D, Mungo B, Stem M, et al. Prevalence, impact, and risk factors for hospital-acquired conditions after major surgical resection for cancer: a NSQIP analysis. J Gastrointest Surg. 2015 Jan;19(1):142-51.

[8] McHugh M, Van Dyke K, Osei-Anto A, Haque A. Medicare's payment policy for hospital-acquired conditions: perspectives of administrators from safety net hospitals. Medical Care Research & Review. 68(6):667-82, 2011 Dec

[9] Meddings JA, Reichert H, Rogers M, et al. Effect of nonpayment for hospital-acquired, catheter-associated urinary tract infection: a statewide analysis. Annals of Internal Medicine. 157(5):305-12, 2012 Sep 4.

[10] Frey, B.S. and Jegen, R. (2001) "Motivation Crowding Theory" Journal of Economic Surveys 15(5):589–611

If it is decided to progress with policies to support financial incentives playing a role in inducing behavioural change, there are various ways in which their impacts can be augmented independent of the size of the reward (or penalty) being set:[11]

- 'Loss aversion' – there is evidence that people react more strongly to the same situation when it is framed in terms of losses rather than gains. This has implications for the design of incentive schemes. For instance, it suggests that the prospect of losing a given amount of money may be a greater motivating factor than the prospect of gaining that same amount of money.
- 'Relative social ranking' – this means that people care about how they compare with others, especially when those people are their peers. This insight is applicable to clinicians who may care about their standing with their peers. This is obviously not mutually exclusive with providing a financial incentive to improve performance but suggests that the size of the incentive itself may be secondary to the comparison. This insight can explain for instance why audit and feedback, particularly when it is explicitly combined with peer comparisons that rank the participating clinicians, have been found to have strong motivating impacts in bringing about the desired behaviour change.[12]
- 'Mental accounting and salience' – this refers to the evidence that a financial incentive is stronger if presented and labelled distinctly and explicitly rather than folded into regular compensation for an activity. This insight may have particular implications for funding incentives for reducing HACs as it suggests that there should be some means of identifying clearly that particular changes to funding are due to a hospital's performance in better managing adverse events.

The importance of complementary non-punitive policies to increase safety and quality

The continued instances of adverse events in hospital, whether these take the form of sentinel events or HACs, cannot be wholly explained by a lack of knowledge on how to minimise the risk of these events. The knowledge is 'out there'; the problem is that systematic means of reducing the risks of these events have not been routinely or widely put into practice. This is fundamentally a problem of translational or clinical implementation, and financial incentive schemes should be seen as only one of many policy tools available to address this problem. There are others which are well documented in the literature on translation into practice and which are being developed even today. Two examples stand out.

Recent research from Norway has found that simply by implementing a standardised means of monitoring adverse event rates in medical record systems, the Norwegian health system was able to achieve significant reductions in the first two years of monitoring.[13] Thus greater transparency alone was sufficient to induce performance improvements in reducing adverse events, perhaps for the 'intrinsic motivation' reasons discussed previously.

More recently and closer to home, the Victorian Health Minister has released a commissioned report entitled 'Targeting zero: supporting the Victorian hospital system to eliminate avoidable harm and strengthen quality of care'.[14] The report comes with recommendations on how to reduce adverse events including the introduction of regular departmental monitoring of sentinel events and a common set of broader safety and quality performance indicators across public and private

[11] E. J. Emanuel, P. A. Ubel, J. B. Kessler et al., "Using Behavioral Economics to Design Physician Incentives that Deliver High-Value Care," Annals of Internal Medicine, published online Nov. 24, 2015.
[12] Meeker D, Linder JA, Fox CR, et al. Effect of Behavioral Interventions on Inappropriate Antibiotic Prescribing Among Primary Care Practices: A Randomized Clinical Trial. JAMA. 2016 Feb 9;315(6):562-70. doi: 10.1001/jama.2016.0275.
[13] Deilkås ET, Bukholm G, Lindstrøm JC, Haugen M. Monitoring adverse events in Norwegian hospitals from 2010 to 2013. BMJ Open 2015;5:e008576.doi:10.1136/bmjopen-2015-008576
[14] Stephen Duckett, Maree Cuddihy, Harvey Newnham 2016, 'Targeting zero: supporting the Victorian hospital system to eliminate avoidable harm and strengthen quality of care'.

hospitals. Other recommendations include suggestions for improving clinical governance, investing in modern data management systems and identifying underperforming hospitals. These measures are aimed at creating a robust culture of safety and quality.

There are other such examples which can be identified from the literature but these are only two of the most recent. None of these approaches are inconsistent with the use of financial incentives but suggest an additional dimension that needs to be considered in assessing the models proposed in the Consultation Paper.

Assessments of Consultation Paper Options

Management of sentinel events

On the proposal for non-payment of episodes associated with sentinel events, the RACP accepts that as a general principle, hospitals should not charge for follow up care associated with sentinel events. Nonetheless in light of the highly equivocal evidence we are sceptical that denying payment for episodes of care associated with sentinel events would be effective in inducing clinical change. Even the most favourable evidence on the effectiveness of financial incentives in changing clinician behaviour shows that these incentives have to be of a large magnitude to induce behavioural change.

We believe that other measures such as more regular monitoring of sentinel events, promoting greater awareness among clinicians of clinical risk mitigation strategies and providing feedback on their performance are likely to be more effective in promoting the needed culture and clinical practice change.

Management of HACs

Table 1 below summarises our views of the strengths and weaknesses associated with each of the proposed options for managing HACs and outlines the significant caveats we would attach to any support we might consider for these options.

The key points and recommendations we wish to highlight from Table 1 are that of the options presented:

- Option 1 is the weakest because it relies on a coding change and may simply induce changes to medical coding in hospitals rather than the desired clinical change.
- We are open to supporting one of the remaining three options (Options 2, 3a and 3b) but, because these are potentially more challenging to implement, any support would be conditional on appropriate government investments in improving the medical information systems of hospitals, improving the rigour of data collection, standardising measurement of HACs and working to raise the awareness of the need to improve safety and quality in healthcare.
- Each of these remaining options (after option 1 has been eliminated) has their own strengths and weaknesses.
    - Option 2 makes the best use of ‘behavioural economics’ based competitive mechanisms, namely loss aversion and relative social ranking effects, to incentivise clinicians. However one strong objection to option 2 is that the hospitals that get penalised the most because they are the poorest performers may simply suffer even more reduced capacity to implement a better safety and quality culture to reduce HACs. One means of addressing this (which we note in the below table under ‘caveats’) is that financial disincentives (i.e. funding reductions) for poorer performers should be phased in over time, with hospitals given advance warning and sufficient time to improve their safety and quality record.
    - These objections also apply to a lesser degree to Option 3a which proposes rewarding the better performers rather than penalising the poorer performers. While

these rewards may have motivating effects, they may simply end up entrenching the initial advantages of the better resourced hospitals which are likely to have lower HAC rates to begin with.

- Option 3b is in a slightly different category as it contemplates redistributing the cost savings that would come from a lower 'quality adjusted' NEP to State governments to invest in quality and safety initiatives. The main advantage of this approach is that it can build on existing safety and quality initiatives in the States which run hospitals. This is also potentially the most equitable of the approaches proposed assuming that all of the cost savings from a lower 'quality adjusted' NEP are returned to these programs.

We would be willing to work with IHPA to further develop one of these three options conditional on our caveats being met and on being provided with more specific details on each of these options.

Option	Strength	Weakness	Support	Caveats
1. HAC associated diagnoses ignored during DRG assignment	Relatively determinate and low funding impact ($148 million)	One dimensional approach May invite undue focus on medical coding changes without changing clinical practice Does not encourage or facilitate government collaboration and investment in better information systems compared to the other options.	No	n.a.
2. Adjust funding based on differences in HAC rates between hospitals e.g. hospitals with highest or above average HAC rates get reduced funding (i.e. **financial penalties for poor performers**)	Hospital level funding approach could encourage investments to improve hospital information systems to facilitate better hospital benchmarking Has the potential to be multidimensional and facilitate collaboration between government agencies and hospital system. Exploits 'loss aversion' effects which may augment incentives. Exploits relative social ranking effects between clinicians working in different hospitals or local health networks which may augment incentives.	Without other institutional supports this may simply reduce the capacity of poorer performing hospitals to improve their safety and quality Impact on funding is less determinate but potentially greater depending on where the threshold is set and quantum of funding adjustment applied	Yes, potentially	Greater certainty over funding impacts and more specifics over where the threshold for 'poor' HAC results will be set and quantum of funding adjustment made. Commitment by government to needed investments in better hospital information systems and standardised measurements to facilitate a rigorous benchmarking process. Commitment in terms of investment in safety net 'safety and quality' training programs once the worst performing hospitals are identified to ensure they do not simply have their capacity destroyed by financial penalties. 'Phase in' of financial penalties (i.e. funding adjustments') so that for the first few rounds the worst performing hospitals are given

				'notice' of their poor performance and opportunity to reduce their HAC rates. Investment in a rigorous process to ensure that particular hospitals which serve challenging patient demographics are not penalised for factors beyond their control. A hospital's case mix should be calibrated against complexity as identified in the DRG and particular case mixes might need special arrangement if they have a baseline unavoidable rate of complications.
3.a Lower NEP from excluding all episodes of care with HACs + redistribution of cost savings into financial incentives for hospitals with lower HAC rates (i.e. **financial rewards for good performers**)	Hospital level funding approach could encourage investments in better hospital information systems to facilitate hospital benchmarking Has the potential to be multidimensional and facilitate collaboration between government agencies and hospital system Exploits relative social ranking effects between physicians working in different hospitals or local health networks which may augment incentives	Impact on funding is less determinate but potentially greater depending on proportion of pool to be redistributed May simply entrench advantages of better resourced hospitals which are likely to have lower HAC rates	Yes, potentially	Greater certainty over funding impacts and in particular a guarantee that the full cost savings from lower NEP will be redistributed back into the health system as financial incentives Commitment by government to needed investments in better hospital information systems and standardised measurements to facilitate a rigorous benchmarking process Investment in a rigorous process to ensure that particular hospitals which serve challenging patient demographics are not unfairly classified as poor performers for factors beyond their control. A hospital's case mix should be calibrated against complexity as identified in the DRG and particular case mixes might need special arrangement if they have a baseline unavoidable rate of complications.
3.b Lower NEP from excluding all episodes of care with HACs + cost savings from this returned into States' safety and quality programs	Has the potential to be multidimensional and facilitate collaboration between government agencies and hospital system Less likely to entrench advantage of better resourced hospitals which may partly contribute to differences in HAC rates Exploits federal structures to ensure that	Lack of pro-competitive inducements found in Options 2 and 3a Less incentive for governments to invest in better benchmarking and information collection systems as this approach is not so reliant on benchmarking of hospital performance	Yes, potentially	Greater certainty over funding impacts and in particular a guarantee that the full cost savings from lower NEP will be redistributed back into the health system as financial incentives. Commitment by government to needed investments in better hospital information systems and standardised measurements to

	governments that own and operate hospitals in question (i.e. the States) get a say in safety and quality investments Can build on existing safety and quality programs at State level such as the one just announced for Victoria			facilitate a rigorous benchmarking process which could aid in design of safety and quality programs. Investment in a rigorous process to ensure that particular hospitals which serve challenging patient demographics are not unfairly classified as poor performers for factors beyond their control. A hospital's case mix should be calibrated against complexity as identified in the DRG and particular case mixes might need special arrangement if they have a baseline unavoidable rate of complications. Commitment to cooperation between Commonwealth and States

Conclusion

Consistent with our previous submissions, the RACP acknowledges that financial incentive mechanisms could potentially play a role in improving safety and quality in hospitals by reducing the incidence of adverse events such as sentinel events and HACs. However, IHPA should proceed with caution as a review of the most recent evidence of a similar financial incentive based policy to reduce adverse events in the US provides only equivocal evidence for their effectiveness. In particular, this recent evidence finds that:

- Financial incentives (including disincentives) have to be above a certain threshold to have an impact on clinical behaviour.
- Not all adverse events are equally amenable to reductions through policy incentives because not all adverse events are equally amenable to clinical risk reduction strategies.
- There needs to be better investment in data collection and measurement and better hospital information systems as a precondition of making a financial incentive scheme work.

The RACP also recommends that IHPA look more closely into more recent findings in behavioural economics if it wishes to go down the path of designing financial incentives to reduce adverse events. These findings caution against exclusive reliance on financial incentives in case they 'crowd out' more intrinsic norms and motivations such as a sense of professionalism and the need for clinical excellence. That said, we believe it would be possible to design financial incentive schemes that complement these intrinsic motivations if proper institutional settings, structures and systems are in place, including a supportive culture that promotes safety and quality and appropriate medical information systems that can feedback performance data to clinicians. Taking a bigger picture view, the problem of reducing the incidence of adverse events is fundamentally a problem of translational or clinical implementation, and financial incentive schemes should be seen as only one of many policy tools available to address this problem.

Bearing these considerations in mind, the RACP would be willing to work with IHPA to further develop one of the three options proposed in the Consultation Paper that involve hospital-level funding reforms (Options 2, 3a and 3b). Each of these options has the potential to be multi-dimensional in approach and facilitate collaboration between governments and the hospital sector, while encouraging better investments by government in appropriate benchmarking and information

systems. This is conditional on our caveats (as outlined in Table 1) being met for each of these and on more specific details being provided on these options. We look forward to further consultation with IHPA on these options.

Appendix A

1. Studies of the impacts of the US CMMS non-payment policy on rates of adverse events

Paper	Approach	Conclusions
Calderwood MS, Vaz LE, Tse Kawai A, et al. Impact of Hospital Operating Margin on Central Line-Associated Bloodstream Infections Following Medicare's Hospital-Acquired Conditions Payment Policy. Infection Control & Hospital Epidemiology. 37(1):100-3, 2016 Ja	Interrupted time series design to evaluate the impact of the HAC policy on quarterly central line–associated bloodstream infections (CLABSI) rates reported by hospitals in the lowest (greatest annual loss) and highest (greatest annual profit) quartile. Sample was 358 acute care hospitals participating in Preventing Avoidable Infectious Complications by Adjusting Payment (PAICAP) and reporting CLABSI data on the National Healthcare Safety Network.	For hospitals with OMs in the highest quartile, CLABSI rates were already declining prior to the HAC policy and continued to decline at a similar rate following the policy. In contrast, **for hospitals with OMs in the lowest quartile, CLABSI rates appeared to decline following the policy relative to the pre-policy period. This suggests that the policy may have affected hospitals operating at a financial loss differently than hospitals operating at a financial profit.** A limitation in analysis is the small number of hospitals reporting CLABSI data before July 1, 2007. Current findings suggest that the HAC policy may have improved reported CLABSI rates in a subset of US hospitals operating at a financial loss at the time of policy implementation.
Kawai AT, Calderwood MS, Jin R, et al. Impact of the Centers for Medicare and Medicaid Services Hospital-Acquired Conditions Policy on Billing Rates for 2 Targeted Healthcare-Associated Infections. Infection Control & Hospital Epidemiology. 36(8):871-7, 2015 Aug.	Interrupted times series design to assess whether hospital-acquired conditions policy was associated with changes in billing rates for vascular catheter-associated infections (VCAI) and catheter-associated urinary tract infections (CAUTI). Sample was 569 acute care hospitals. **Notes that previous studies were unable to take account of whether the infections were hospital acquired**. The three states in this study sample required hospital reporting of present-on-admission codes prior to implementation of the CMS HAC policy in October 2008.	**Policy was associated with an immediate drop in billing rates for VCAI and CAUTI** (odds ratio for change at policy implementation for VCAI, 0.75 [95% CI, 0.69-0.81]; for CAUTI, 0.87 [0.79-0.96]). In the post-policy period, there was a decreasing trend in the billing rate for VCAI and a levelling-off in the billing rate for CAUTI (post-policy odds ratio per quarter for VCAI, 0.98 [95% CI, 0.97-0.99]; for CAUTI, 0.99 [0.97-1.00]). Discordant findings between NHSN and billing data with respect to the impact of the CMS HAC policy may be compatible with 2 explanations, including overall lack of validity of billing codes and changes in hospitals' coding and billing practices. Among Medicare patients, the CMS HAC policy appeared to be associated with decreases in billing rates for VCAI and CAUTI. In actuality, the policy may not have had its intended impact of reductions in these targeted healthcare-associated infections, because prior work demonstrated that rates based on hospital surveillance did not change following implementation of the CMS HAC policy.
Lee GM, Kleinman K, Soumerai SB, et al. Effect of nonpayment for preventable infections in U.S. hospitals. New England Journal of Medicine. 367(15):1428-37, 2012 Oct 11	Interrupted time series analysis to examine changes in trends of two HACs targeted by CMS policy (central catheter–associated bloodstream infections and catheter-associated urinary tract infections) vs an outcome that was not targeted by the policy (ventilator-associated pneumonia). 398 hospitals in study sample. **This analysis was limited to 398 of the 1166 hospitals participating in the**	No evidence that the 2008 CMS policy to reduce payments for central catheter–associated bloodstream infections and catheter-associated urinary tract infections had any measurable effect on infection rates in U.S. hospitals. Models showed significant decreases in rates of central catheter– associated bloodstream infections during the periods before implementation of the policy (4.8% per quarter) and after implementation (4.7%

	National Healthcare Safety Network, and the findings were limited by the small sample size and low response rate.	per quarter), with no measurable effect of the CMS policy on either the trend in the post-implementation period vs the pre-implementation period. Results for CAUTI were similar. 3 possible explanations proposed for this: policy only led to changes in billing practices; infections targeted were already areas of focus so incremental effect was small and financial incentives at stake were too small.
Meddings J, Reichert H, Rogers MA, et al. Under Pressure: Financial Effect of the Hospital-Acquired Conditions Initiative-A Statewide Analysis of Pressure Ulcer Development and Payment, J Am Geriatr Soc. 2015 Jul;63(7):1407-12	Retrospective before and after study was conducted to assess how often and by how much hospital payments decreased as a result of the 2008 pressure ulcer payment changes. Data used was more than more than 2.4 million annual adult discharges in 2007 and 2009.	Total financial effect of the 2008 HACI payment changes for pressure ulcers was negligible. Within the small (<0.4%) payment decrease that occurred, the largest proportion resulted from non-payment for Stage I and II, unstageable, and stage-not-specified ulcers, the overwhelming majority (90.5%) of which was due to non-payment for present-on-admission ulcers—effectively a price cut unrelated to the care delivered. This payment change was more than 200 times as great as the reduction for hospital-acquired Stage III and IV ulcers—the pressure ulcers described in CMS information material. The total financial effect of the 2008 HACI payment changes for pressure ulcers was inconsequential, resulting in no significant financial penalty for hospitals and no significant savings for Medicare. Most payment decreases occurred by removal of comorbidity payments for present on- admission pressure ulcers other than Stage III and IV.
Peasah SK, McKay NL, Harman JS, et al. Medicare Non-Payment of Hospital-Acquired Infections: Infection Rates Three Years Post Implementation. Medicare and Medicaid Research Review 2013 3(3).	Pre-post, retrospective, interrupted time series study. Compared rates of hospital-acquired vascular catheter-associated infections (HA-VCAI) and catheter-associated urinary tract infections (HA-CAUTI) before and after implementation of the new policy using administrative hospital discharges data. Data came from the administrative hospital discharges data maintained by the Florida Agency for Healthcare Administration.	There was a reduction in VCAI post-policy, but not CAUTI. The reduction in VCAI was substantial, suggesting that hospitals in Florida might have responded more strongly to the non-payment policy for VCAI, which is more expensive to treat than CAUTI.
Schuller K, Probst J, Hardin J, et al. Initial impact of Medicare's nonpayment policy on catheter-associated urinary tract infectionsby hospital characteristics. Health Policy 115 (2014) 165–171	Rates of CAUTIs were analysed by patient and hospital characteristics at the hospital level on a quarterly basis, yielding 20 observation points. October 2008 was used as the intervention point.	Since the announcement of the policy change in 2005, the rate of CAUTIs has continued to steadily incline until it dropped in 2007 and then again in 2009. The first initial drop in 2007 could be associated with additional surveillance and prevention programs to reduce the rates of CAUTIs. The spike in 2008 could be related to the implementation of the policy change and the mandatory reporting associated with it. There was no significant change in rate of CAUTIs associated with Medicare's non-payment policy. Non-teaching and urban hospitals incurred a greater declining rate of CAUTIs compared to their counterpart The use of administrative data, improper coding of CAUTIs at the hospital level, and the short time period post-policy implementation were all limitations in this study.
Vaz LE, Kleinman KP, Kawai AT, et al. Impact of Medicare's Hospital-Acquired Condition policy on infections in safety net and non-safety net hospitals. Infection	Interrupted time-series design to evaluate impact of policy on central line–associated bloodstream infection rates. **The study purposely chose to use NHSN data in order to focus on**	The Centers for Medicare and Medicaid Services Hospital-Acquired Conditions policy did not have an impact, either positive or negative, on already declining rates of central line-associated bloodstream

Control & Hospital Epidemiology. 36(6):649-55, 2015 Jun	**clinically relevant outcomes, particularly since billing data is known to have low sensitivity and moderate positive predictive values, and may be subject to potential reporting bias**	infection in safety net or non-safety net hospitals. Safety net hospitals care for a disproportionate number of poor and minority patients who may have more comorbidities and/or psychosocial challenges.
Waters TM, Daniels MJ, Bazzoli GJ, et al. Effect of Medicare's Nonpayment for Hospital-Acquired Conditions Lessons for Future Policy. JAMA Intern Med. 2015;175(3):347-354.	Quasi-experimental study of adult nursing units from 1381 US hospitals participating in the National Database of Nursing Quality Indicators (NDNQI), a program of the American Nurses Association. The NDNQI data were combined with American Hospital Association, Medicare Cost Report, and local market data to examine adjusted outcomes. Outcomes tracked were central line–associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), hospital-acquired pressure ulcers (HAPUs), and injurious inpatient falls.	Medicare's non-payment policy was associated with an 11% reduction in the rate of change in CLABSIs (incidence rate ratio [IRR], 0.89; 95%CI, 0.83-0.95) and a 10% reduction in the rate of change in CAUTIs (IRR, 0.90; 95%CI, 0.85-0.95), but was not associated with a significant change in injurious falls (IRR, 0.99; 95%CI, 0.99-1.00) or HAPUs (odds ratio, 0.98; 95%CI, 0.96-1.01).

2. Other studies relevant to the assessment of the US CMMS non-payment policy

Paper	Approach	Conclusions
Lidor AO, Moran-Atkin E, Stem M, et al. Hospital-acquired conditions after bariatric surgery: we can predict, but can we prevent? Surg Endosc. 2014 Dec;28(12):3285-92	Patients over 18 years with a body mass index (BMI) ≥ 35 who underwent bariatric surgery were identified using the American College of Surgeons' National Surgical Quality Improvement Program (ACS-NSQIP) database (2005-2012). Patients were grouped into two categories: HAC versus no HAC patients and baseline characteristics and outcomes were compared.	Data demonstrate a strong correlation between these three HACs following bariatric surgery and factors intrinsic to the bariatric patient population. This calls into question the non-payment policy for inherent patient factors on which they cannot have impact.
McHugh M, Van Dyke K, Osei-Anto A, Haque A. Medicare's payment policy for hospital-acquired conditions: perspectives of administrators from safety net hospitals. Medical Care Research & Review. 68(6):667-82, 2011 Dec.	In 2008, Medicare implemented a policy limiting reimbursement to hospitals for treating avoidable hospital-acquired conditions (HACs). The authors conducted interviews with 60 chief quality officers and 55 chief financial officers from safety net hospitals to explore the impact of Medicare's HACs policy during its first year.	Although the policy reportedly provided additional motivation to reduce HACs, few hospitals implemented new care practices and instead focused on documenting conditions that are present for patients on admission
Meddings JA, Reichert H, Rogers M, et al. Effect of nonpayment for hospital-acquired, catheter-associated urinary tract infection: a statewide analysis. Annals of Internal Medicine. 157(5):305-12, 2012 Sep 4	Before-and-after study of all-payer cross-sectional claims data. 96 hospitals included in the sample.	Data showed that hospitals frequently requested payment for non-CAUTIs. These infections were rarely coded as hospital-acquired or catheter-associated, although surveillance data sets show that such infections are common. Thus non-payment for hospital-acquired CAUTIs lowered payment for very few hospitalizations (0.003%). Claims data are currently not valid data sets for comparing hospital-acquired CAUTI rates for the purpose of public reporting or imposing financial incentives or penalties.
Molena D, Mungo B, Stem M, et al. Prevalence, impact, and risk factors for hospital-acquired conditions after major surgical resection for cancer: a NSQIP analysis. J Gastrointest Surg. 2015 Jan;19(1):142-51	Patients who underwent surgical resection for esophageal, gastric, hepato-biliary, pancreatic, colorectal, and lung cancer were identified using the ACS-NSQIP database (2005-2012). Early surgical outcomes were compared between HAC and non-HAC patients	The development of HAC is strongly associated to pre-operative patients' characteristics and not only to sub-optimal peri-operative care, therefore suggesting that the non-payment policy might be excessively penalizing.