



Submission to the Independent Hospital
Pricing Authority regarding:

The Consultation Paper on the Pricing
Framework for Australian Public Hospital
Services 2017-18

Submitted by

LORICA HEALTH PTY LIMITED

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Executive summary

Lorica Health is an active participant in the Australian health care market through its commercial relationships with 30 of 33 private health insurers and a range of public sector payers, providers and regulators. We develop healthcare analytics software that improves the fairness and efficiency of the Australian health care system and we welcome the opportunity to contribute to this topic via our consultation response enclosed. The direction taken by IHPA on this issue has the potential to deliver significant improvements to system performance if appropriately implemented. Our experience suggests that the strategic coordinated use of analytics and technology to continually inform policy and drive positive change is one of the most effective ways to improve the delivery of high quality health care.

As outlined in the consultation document, population health is a broad concept which cannot be comprehensively addressed through the way in which acute and sub-acute services are paid and funded, in part because these services have only a weak influence on the overall health of a given population (Schroder, SA (2007) *We Can Do Better NEJM*. 357:1221-8). As such we support a holistic view be taken to the topic of safety and quality in so far as it supports population health outcomes. More than just allowing the health system to continue growing at 3% pa (albeit more efficiently) this presents an opportunity to move towards paying for better health outcomes in the broadest sense of the term.

Under this aspiration, the need to distribute key performance metrics to all participants in an efficient, timely and secure manner is paramount, especially as more data is released and more stakeholders are included in its distribution (eg non-hospital services, private services, etc). A Software as a Service (SaaS) approach is best placed to deliver such a sector-wide solution, while still retaining control and security of such sensitive data. Examples exist in practice – eg 3M's market leading grouper software and Lorica Health's own proprietary products being used by private health insurers and Government payers to eliminate fraud, waste, abuse and errors in healthcare markets. Over time, safety and quality will need to incorporate validated measures of low value care (ie unnecessary procedures and hospital activity), and ultimately, patient health outcomes. In this context, starting the design process for a "learning health system" with a fully imagined vision of full system integration is a necessary, but insufficient driver of longer term policy success.

Finally, we encourage IHPA to remain committed to the end game in the face of inevitable implementation challenges. At its core, hospitals must be incentivised to ensure that their actions do no harm to patients. While there is a clear need for the delivery mechanism to appropriately accommodate differences in patient complexity between hospitals, sufficient evidence now exists that hospitals, clinicians and administrators each have influence on safety and quality outcomes such that incentives and penalties should be imposed when outcomes are not aligned with expectations.

2. Case studies

Summarised below are two case studies from Lorica's professional experience working with public and private sector payers in the area of safety and quality in healthcare and its impact on pricing. These case studies have been included here to describe key concepts such as software delivery, safety and quality measurement tied to negotiated price outcomes and actionable reporting of safety and quality information that we believe are highly relevant to the consultation and associated policy response of IHPA and Government.

Case study A: I+PLUS

Lorica Health has developed the I+PLUS clinical analytics platform which offers rich and responsive analysis in support of benchmarking, contracting and management of health service delivery. I+PLUS provides advanced and granular insights into provider performance derived from the application of claims-scoring and predictive modelling.

I+PLUS has been developed to support filtering of data by patient characteristics, treatments, DRGs, hospital peer groups and other factors, such that we can present results that compare 'like with like'. In addition, we have incorporated widely used risk scores and adjustments in an attempt to describe relative patient risk.

Hospital quality metrics

In 2015 Lorica Health worked with key Australian health care quality regulators (IHPA and the Commission for Safety and Quality of Healthcare) and payers to develop a method for identifying Hospital Acquired Complications (HACs) in hospital claims data and relate this back to the relevant hospitals and clinicians.

*Through this process we observed the **positive effect that clear and reliable presentation of quality metrics back to clinicians and providers can have**. Clinicians and providers are inherently driven to provide the best possible care to the community and acknowledge the utility of using such insights to improve how this is achieved. However, it is important to note that data and benchmarking must be developed and shared at an **actionable level in order to drive lasting change**. In practice this means that hospital level reporting is only valuable if quality measures can be broken down by ward, specialty, clinical team and lead surgeon. Our experience suggests that measures which do not push below the hospital level do not lead to actionable insights and thus result in limited improvements.*

Case study B: NeMo

Since 2015 Lorica has been championing the use of transparent measures of clinical quality to underpin payment and negotiation in the private sector while continue to partner with the Commission and IHPA on their ongoing development of public sector solutions.

In response to market demand, Lorica has developed a product named NeMo which automates and standardises private hospital contract negotiations through software. A key functionality of NeMo is to use the current set of Hospital Acquired Complications (HACs) as data points supporting contract negotiation representing a view of the patient outcomes and care being delivered.

Negotiation and Contract management

Through our ongoing work with private sector payers we have learnt that the use of HACs to inform pricing conversations can be very powerful tool if used appropriately. In particular, appropriate benchmarking requires relevant peer grouping of hospitals to allow for significant differences in casemix, cost base and profile. Even after making such adjustments there is considerable variation between hospitals indicating the potential for improvement in the lower performing hospitals.

Software delivery has been critical to the success of NeMo as it allows dynamic data loads and updating of measures along with giving the user the ability to tie payment/funding information to quality and safety in real time. This software enhancement has taken the place of processes that were formerly run manually and with spreadsheets. Our customers have commented on the lower error rates and faster turnaround times, which have come in addition to more robust user control and data security.

*Finally, through our experience we have observed that **some hospitals do not report the Condition Onset Flag (COF)** accurately or even at all in their data. This may be due to historical neglect but must be rectified if HACs are to influence pricing and funding decisions in future (and also to set retrospective benchmarks or targets). We recommend vigilant monitoring by IHPA going forward with targeted and random coding audits tied to significant financial penalties for non-compliance.*

3. The role of transparency, technology and fairness

This section responds to the questions and themes proposed in Section 11 of the Consultation document relating to pricing and funding for safety and quality.

Option 1 - Remove the HAC so that it does not contribute to the DRG assignment.

Contextually, IHPA indicates that only 15% of admissions with a HAC would have received a downgraded DRG in the 2014/15 financial year. We believe that this would represent an unsatisfactory outcome as it does not provide a material incentive for hospitals to modify practice in order to improve patient safety. If the financial penalty at risk is not material to a given hospital, then there is no hard incentive for the hospital to take action to actively improve quality and safety. Reducing HAC rates within a hospital will likely require significant investment in data, reporting, system, people and process improvements. Data capture, reporting and measurement will need to be improved and made available at a clinician level. This information then needs to be actioned both by clinicians and administrative teams collectively (people and process) in order to review current processes and identify, test and roll out improvements. Such an undertaking will rarely get off the ground without material financial incentive.

Option 2: Funding adjustments made on the basis of differences in HAC rates across hospitals

As discussed previously we believe that hospital level metrics represent only the first step to achieving better safety and quality in healthcare. We agree that hospital level reporting is easier to implement than episode level reporting and some questions of risk adjustment become less material when hospital level activity is grouped and benchmarked sensibly.

However, in order to incentivise real change within a hospital the financial penalties would need to be severe. Additionally, given the starting point within public hospitals today, it is highly likely that IHPA and the Commission would need to support within-hospital investigation through providing detailed access to quality and safety data ***in a form that can be quickly and rapidly used by a non-technical audience throughout the hospital.*** Simply providing additional data loads does not assist a hospital to rapidly integrate new information into reports or set up internal operational structures, processes and people in such a way as to act on this data.

On the topic of risk adjustment, we support the need to allow for differences in the complexity of patients to ensure that clinicians and hospitals are not adversely penalised due to their unique case mix. This must be counterbalanced against the fact that in some cases procedures should never have been performed on high risk individuals, and as such "risk adjustment" should not mitigate the financial incentive or disincentive to do no additional harm to these patients.

Option 3: A quality-adjusted NEP with funding incentives for hospitals with the lowest HAC rates

This is our preferred option as it allows flexibility around financial penalties which can be used to phase in the new measures and also punish appropriately poor performance (so as to incentivise change).

Two key challenges arise out of this approach however. Firstly, without a careful phase in period this approach will hit the poor performing hospitals quickly and significantly and likely make it harder for them to invest in improved performance. There may be an opportunity for IHPA or the Commission to allow poor performing hospitals to apply for grants to invest in specific programs expected to improve outcomes. These programs would be monitored and tracked for compliance and in order to share successful programs more broadly. Indeed, it is recommended that forums be established where the best performing hospitals are able to share their learnings and programs with other hospitals within their benchmark groups (in order to ensure appropriateness of programs).

Other issues for consideration

Creating a “learning health system” requires appropriate support for future innovation in care across all settings. There is a risk that overly prescriptive and mal-adaptive quality measures and / or financial penalties may restrict the ability for top performing hospitals and clinicians to innovate. We recommend IHPA consider the possibility of “safe harbour” arrangements where proven top performers are granted a controlled ability to trial innovative new techniques without risk of financial penalty.

Additionally, it should be noted that where safety and quality measures do not adequately measure safety and quality (due to possibly measurement or data issues) or don’t appropriately allow for differences in patient risk profile or hospital type, the integrity of the pricing and funding system may be undermined. In such a situation clinicians and hospital staff will lose confidence in the system and improvements in patient outcomes will not occur. There is a need to establish standards of quality measurement and data collection, these standards need to be created between all industry stakeholders and a process established for regular review, updating and audit of these measures and their associated data capture.

Software as a Service (SaaS) platforms

Based on our experience, we believe that a nationally available software solution delivered via the web would be the most appropriate platform on which to deliver information, clinical measures and outcomes of the pricing and funding determinations of IHPA. A range of cost, timing and control issues are relevant in this decision.

Software as a Service option:

Under this option a web browser user portal is established with validated registration and 2-factor authentication for approved users. Such a solution can be developed rapidly and reflects contemporary best practice (for example, 3M have recently moved a similar approach for their industry-standard DRG grouper software). From an administration and useability perspective it allows more efficient support and version control than alternative options.

Traditional local PC “app” deployment:

An alternative option is to develop a piece of software, deployed to all relevant stakeholders for local installation within their PC / operating system environments. In this case the software would operate locally and append relevant safety and quality, pricing and funding and other measures on to existing administrative datasets.

Such an arrangement has the security advantage of not interacting with the Internet, however is much more difficult to update and maintain, is likely have compatibility issues across different operating systems and will be far costlier to support over time.

Table 1 Summary of key advantages and disadvantages – Options 1 and 2

| Category | Web based solution | App based solution |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manage usage of tool | <ul style="list-style-type: none"> Allows tool owner (i.e. IHPA) to monitor usage through user registration Ensures that most up to date HAC definitions are used by stakeholders at all times Communication to all users is centrally managed Optional data capture | <ul style="list-style-type: none"> Usage is open ended as the system is offline by definition There is no way to track users It becomes increasingly difficult over time to ensure that stakeholders use the most up to date version of the tool |
| Ease of use and customer support | <ul style="list-style-type: none"> Customer support is more rapid as issues can be viewed by support dynamically Support can be integrated through the same web | <ul style="list-style-type: none"> Tool can be used without an Internet connection Processing likely to be faster for large datasets Customer support faces |

| Category | Web based solution | App based solution |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>connection as the tool is accessed</p> <ul style="list-style-type: none"> Requires an Internet connection Uploads of large files (e.g. a large state yearly clinical data) may take 1-2 hours | <p>significant challenges</p> <ul style="list-style-type: none"> Additional complexity due to installation of software on different operating systems and configurations |
| Managing data input | <ul style="list-style-type: none"> Error messages can be instantly captured, shared and updated as common bugs or other issues become known | <ul style="list-style-type: none"> Error checking can be built into the initial product but there is limited ability to update based on experience with users |
| Licensing and IP protection | <ul style="list-style-type: none"> Not required as the HAC coding and information is centrally controlled | <ul style="list-style-type: none"> May be required to ensure that the logic linking clinical data to HACs is not gamed or otherwise misused |
| Updating changes in HAC definitions | <ul style="list-style-type: none"> Can be activated rapidly and consistently across all users Will be increasingly valuable over time as changes inevitably occur | <ul style="list-style-type: none"> Time consuming to re-launch new versions, identify correct users and manage support A good solution for a static problem |
| Data security | <ul style="list-style-type: none"> Data can be de-identified before sharing through the web to ensure privacy and security compliance Allows IHPA to monitor stakeholder usage of the tool | <ul style="list-style-type: none"> Data remains within user environment and is not accessible by Lorica Offline environment likely to be the most secure, but least flexible |

4. Lorica Health

Lorica Health creates healthcare analytics products delivered through software that provide improved fairness and efficiency to the Australian Health system. Our current customers include 30 of the 33 Private Health Insurers in Australia and a range of public payer and provider bodies.

Our products and associated services leverage a unique mix of healthcare expertise covering:

- Leading research (in both academic and commercial fields)
- Clinical knowledge
- Big data analytics capabilities
- Commercial acumen in healthcare
- Key architectural and solution components include data management, mining and visualisation, business rules, predictive modelling and network analysis.

Our solutions are built upon on a platform that embeds and maintains full coverage of all key claiming, diagnostic and treatment coding systems including the Medicare Benefits Schedule (MBS), ICD-10 (AM), AR-DRG, Classification of Hospital Acquired Diagnoses (CHADx) and Complications (HACs). In addition, our Recoveries Practice allows health funds to fully outsource their recoveries activities to an experienced and skilled recoveries team. This has the dual benefit of boosting our customers' return from recoveries, but also markedly reducing the resources required to capture them.

Contact details

Dr Paul Nicolarakis
Chief Executive Officer

t: 02 8088 4207

e: hellopaul.nicolarakis@loricahealth.com

w: www.loricahealth.com

5. Appendix: Consultation questions not previously addressed

| Section | Question | Response |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11.4.1 | Is there support for pricing and funding models for safety and quality to be applied broadly across all types of public hospitals, all services, all patients and all care settings? | Yes – it is critical that the roadmap include expansion to cover all services and care settings in order to speak to true population health and not focus narrowly on acute inpatient care where data is easily available. |
| 11.4.4 | What factors should be considered in risk adjustment for safety and quality in pricing and funding models for hospital care? | Transparency, entire continuum of care |
| 11.5.4 | Do you support the proposal to not fund episodes that include a sentinel event? If not, what are the alternatives and how could they be applied consistently? | Support |
| 11.5.4 | Do you support the proposal to include a sentinel events flag to improve the timeliness and consistency of data that is used for funding purposes? | Yes, but this must be carefully monitored over time using high level analytical techniques along with targeted audits. |
| 11.5.4 | Do you agree with IHPA's assessment of this option (not funding episodes with a sentinel event)? | Yes |