Quality indicators in healthcare: the good, the bad, and the ugly

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Introduction

The Canadian healthcare system is a top priority of both federal and provincial governments [1] and many Canadians consider that it helps define us as a nation [1]. We spend 12% of our GDP on the healthcare system and provincial governments direct 33%-46% of their budgets to healthcare [2].

The cultural and financial importance of our healthcare system makes it imperative we measure its quality. Measurement ensures accountability and lets us focus improvement efforts where it's most necessary. In recent years, there has been increasing pressure to direct healthcare payments based on so-called 'big dot' indicators such as hospital mortality rates, emergency department length of stays, and all-cause readmission rates [3].

While valid reasons exist to measure healthcare quality, the technical challenges of measurement are significant. Most current healthcare indicators focus on provider and process issues (e.g. emergency department length of stay) rather than on patient issues (e.g. did patient's care result in optimal health status?). This results in legitimate concerns regarding the ability of our current measures to truly gauge healthcare quality.

In this editorial, we will discuss the use of healthcare indicators to measure quality with the hope of stimulating innovation. We have organized our considerations into 'the good', 'the bad', and 'the ugly'.

The good

Making people and organizations accountable for specific quality indicators promotes at least two positive behaviors. First, it focuses individuals and organizations on concerns important to the public. For example, when governments focus on

readmission rates as an indicator, it ensures healthcare organizations will, in turn, address 'continuity of patient care' – a factor contributing to readmissions and which is important to the public. Thus, setting targets allows governments to promote actions reflecting societal values.

Second, setting targets promotes collaboration. Organizations often create multidisciplinary teams to address quality problems since no single group can adequately address performance issues. For example, reducing emergency department length of stay requires physicians to work with nurses and other hospital employees (such as laboratory and diagnostic imaging technicians) to ensure maximum efficiency. Government attention to indicators also promotes productive collaboration across sectors and organizations.

The Bad

Indicators can also be counterproductive. Quality indicators are based on the assumption that they conceptually and statistically reflect an attribute of healthcare excellence [4]. Unfortunately, this premise is not true – or at least unproven – since most indicators are chosen based on what *can* be measured rather than what *should* be measured.

Hospital readmission rates serve as an example. Many health systems use this indicator because it is measurable and because some re-admissions reflect imperfect care. However, we have shown that most readmissions are due to 'unavoidable' issues such as disease progression or social factors [5]. While risk-adjustment methods can be used to remove the influence of non-care related factors, these approaches are imperfect and can lead to unreliable performance rankings [6].

This concern has at least three significant consequences. First, investments to improve performance will be misspent if directed by indicators and not 'true' quality. Second, 'poor' performance based on indicators is demoralizing to individuals and organizations who legitimately work towards solving 'true' quality problems. Third, indicator-based incentives will lead to unjust resource distribution if they do not reflect 'true' quality.

The ugly

Finally, undue attention to improving indicator performance could pervert behaviors. The use of indicators to guide funding decisions could bias data capture by healthcare providers. Most quality indicators are derived from data based on subjective assessments. For example, assigning diagnostic codes to hospital encounters relies on doctors documenting diagnoses and analysts assigning codes – both of which are determined to a certain extent by subjective criteria. Providers knowledgeable about the impact of coding on indicator performance could ensure data capture that favours their institution. For example, the most efficient way to reduce a hospital's risk-adjusted mortality is to 'up-code' the factors contributing to risk. In fact, several studies suggest this phenomenon explains many improvements in indicator performance over time [7]. Such behavior is arguably fraudulent and does nothing to directly improve patient care.

Clinicians or administrators might react to indicators in a way that increase patient risk. For example, hospital administrators might put pressure on providers to prematurely discharge patients to avoid exceeding an arbitrary emergency department wait-time target. An administrator or clinician who does not have a holistic view of quality might feel such decisions are justified given the negative consequences (for the institution)

associated with poor performance on the indicator. Such actions would adversely affect patient care, ironically, in an effort to improve indicators designed to measure quality.

Conclusion

The health system is currently in a difficult situation: while 'true' quality measures are needed, the current approach is inadequate. While it is not an option to avoid measurement or wait for perfect measures, we should acknowledge that current approaches cannot meet public expectations. For this reason, we suggest several actions.

First, we need a better understanding of the limitations of current indicators. This includes critical analyses of the association of indicators with 'true' quality attributes. Such analyses will maximize the fairness of any incentives and minimize unintended consequences. Second, providers need to be fully engaged in measurement, analysis, and interpretation of indicator data. Providers know their business and should provide the leadership on how to measure quality. Current approaches in which governments and academics independently define standards are doomed to fail.

In order for these recommendations to be met, the health system needs to increase investment in performance measurement systems. The current state where we measure ***what we can*** instead of ***what we should*** is inadequate especially in light of our large investments in healthcare services. Rather than focus on indicators per sé, we recommend investing on the measurement infrastructure. Specifically, the funding should focus on electronic data systems designed to support clinical workflow, databases to integrate the data derived from operational systems, and the training of highly qualified people who are able to analyze and interpret the healthcare data.

Collectively, Canadians greatly value the healthcare system. During times of fiscal restraint, it may seem incongruous to suggest increasing investment into performance measurement. However, the return on this investment may be sufficient to preserve or even increase overall quality while simultaneously reducing overall spending.

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