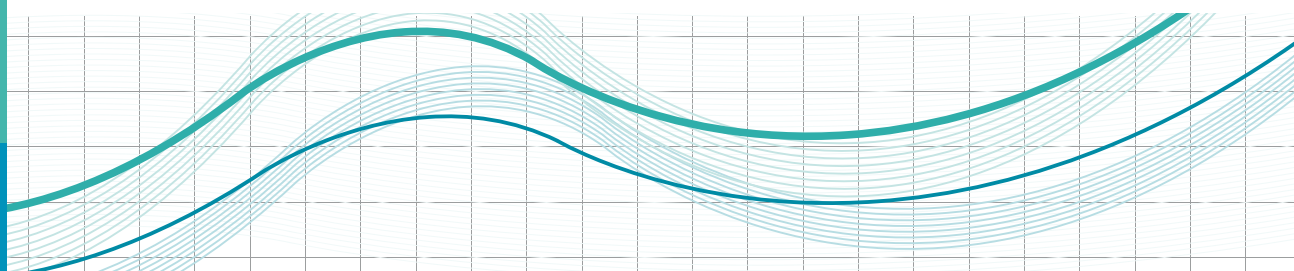


Insights into Care

Data Quality Supplement

An Assessment of the 2009
NSW Health Patient Survey

May 2010



SUMMARY

This supplement to the Bureau of Health Information's public report *Insights into Care: Patients' Perspectives on NSW Public Hospitals* summarises the results of our review of the strengths of the 2009 NSW Health Patient Survey program, the quality of the resultant survey data and opportunities through this Survey to better support performance reporting to clinicians, the community and NSW Parliament. Our focus was surveys for adults who received care in public hospitals and stayed one or more nights (overnight patients) and those who visited these facilities for tests, surgery and other procedures (day only patients). Due to the technical nature of this narrative, a glossary of terms is provided.

The collection and use of patient survey data aligns with NSW initiatives to strengthen the public health system by measuring, monitoring and improving patient care experiences. Since 2007, the NSW Department of Health has conducted the largest patient experience survey program in Australia and one that rivals or exceeds the size of major survey initiatives in Europe and North America.

The NSW Department of Health commissioned two firms to conduct the 2009 cross-sectional mailed survey to create performance estimates at the hospital, area health service and state levels. The survey design was a random sample, stratified by hospital based on hospital volumes, but was not stratified to reflect the age or gender structure of the population. Therefore, the case-weights calculated take account of differences in response rates and hospital volumes but not of age and/or gender response bias. The Bureau's staff verified

the case-weights. The recruitment strategy and the response rate were good. This supplement includes suggestions to support improvements in sampling, recruitment and case-weight methods.

The NSW Department of Health used patient survey questionnaires developed by NRC+Picker from the United States, which are based on qualitative research regarding the dimensions of care that are important to patients. As such, the questionnaire has good face and content validity. We found insufficient information in the public domain, however, to be able to assess the robustness of the survey questionnaire in terms of sensitivity, specificity and reliability.

The 2009 patient survey data for overnight and day only patients have been deemed by the Bureau to be of sufficient quality for performance measurement and public reporting.

The survey questionnaire for overnight and day only patients is lengthy and the creation of a short version might increase response rates and, thereby, reduce response bias. Statistical methods such as factor analyses could be conducted to identify a briefer set of questions that can measure care experiences and improve internal reliability and construct validity. A survey that includes a more limited set of questions about care experiences would create the opportunity to ask patients about the impact of care on health (i.e. health outcomes) as well as unintended complications (e.g. healthcare associated infection).

The NSW Health Patient Survey 2009

Strengths	Largest patient survey in Australia and one that rivals or exceeds the size of major survey initiatives in Europe and North America.
	Survey questionnaire is from an internationally recognised organisation.
	Supports performance estimates at the hospital, area health service and state levels.
Opportunities	Develop a shorter survey that measures care experiences that matter most to patients. Shortening the survey questionnaire would create the opportunity to ask patients about the impact of care on their health and about unexpected complications. This information is essential to assess the performance of the hospital system in NSW.
	This Data Quality Supplement report outlines suggestions to improve survey sampling, recruitment and case-weight methodologies.

INTRODUCTION

This Data Quality Supplement summarises the results of the Bureau of Health Information's review of the strengths of the 2009 NSW Health Patient Survey, the quality of the resultant survey data and opportunities to better support performance reporting to clinicians, the community and Parliament. Due to the technical nature of this supplement, a glossary of terms is provided.

To create this supplement, the Bureau's staff reviewed documents that the NSW Department of Health provided on our request, interviewed staff involved in managing the patient survey and analysed the 2009 data. Our focus was surveys for adults who received care in public hospitals (overnight patients) and those who visited these facilities for tests, surgery or other procedures (day only patients). Patients who received mental health, cancer or rehabilitation services were excluded from these data, as they were eligible to participate in other patient surveys. The patient survey is one of many initiatives implemented by the NSW Department of Health to understand and improve patient and caregiver experiences.

Does the NSW Health Patient Survey measure what matters?

In 2007, the NSW Department of Health contracted IPSOS/Eureka in Australia and NRC+Picker in North America to conduct a cross-sectional patient survey. Between 2007 and 2009, the NSW Department of Health and these firms conducted the largest patient survey program in Australia and one that rivals or exceeds the size of major survey initiatives in Europe and North America.^{1,2}

The collection and use of patient survey data align with NSW and other initiatives to improve patient care experiences.

- In 2007 the NSW Minister for Health established the *State Health Plan: Towards 2010* that articulates the vision, goals and strategic directions of the public health system. One of the seven strategic directions was to "create better experiences for people using health services" and one strategy

to gauge success was to "measure, report and improve customer satisfaction through annual patient satisfaction services and widespread local monitoring of patient experience".³

- In 2008, the NSW government's response to the *Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals* was articulated in *Caring Together: The Health Action Plan for NSW*. One of the six major strategies in *Caring Together* was a commitment to creating better experiences for patients. Between 2007 and 2010, the NSW Department of Health has committed to undertake an array of initiatives to create better experiences for people using health services and to measure and report on progress.
- Between 2007 and 2010, the importance of creating better care experiences for patients has become a hallmark of the Australian Charter of Healthcare Rights,⁴ a proposed National Safety and Quality Framework⁵ and intergovernmental commitments.⁶

Opportunities to improve

In 2009, over 20,000 overnight and day only patients across NSW completed questionnaires to share their firsthand experiences with care. The questionnaire for day only patients included 88 questions, while the questionnaire for overnight patients included 99 questions. Lengthy questionnaires pose a time burden on patients, increase the resources required to administer a survey and result in a large amount of information for healthcare workers to distil to uncover the most important care experiences that matter to patients or need to be the focus of improvement efforts.

The patient survey questionnaire could include a more limited set of questions about care experiences by focusing on measuring the dimensions of care most associated with patients overall views on quality in NSW.

- In order to create a shorter version of the survey to focus on these dimensions, scientific methods such as factor analyses could be used to identify a briefer set of questions and improve construct validity. In 2002, researchers at Picker Europe used patient experiences survey data from five countries to identify a core set of 15 questions for inclusion in questionnaires of overnight patients to support national and international benchmarks. When combined, the 15 questions demonstrate good internal reliability as well as face and construct validity.⁷
- At the same time, a long version of the questionnaire could be implemented with a small percentage of patients in NSW to ensure that a comprehensive set of data remains available to monitor any shift in the care experiences that underlie patient views on overall quality of care. The short version could be used for a survey sample from which to derive performance measures for hospitals, while the long version could be used to obtain results representative of area health services and to monitor the factors that underlie patient perspectives on quality of care.
- A survey that includes a more limited set of questions about care experiences would create the opportunity to ask patients about the impact of care on health (i.e. health outcomes) as well as unexpected complications (e.g. healthcare associated infection). Patient-reported outcomes are very difficult to measure with existing information systems in NSW (and elsewhere), are a valid source of information regarding outcomes in different clinical areas⁸ and have been used elsewhere to inform efforts to improve the beneficial impact of health services.^{9,10}

Does the NSW Health Patient Survey use robust survey methods?

In May 2009, survey questionnaires were mailed to a random sample of day only (18,458) and overnight (26,017) patients who were discharged in February 2009 from public hospitals. Good recruitment strategies were used – two mail reminders were sent to patients (June and July) and a final return date for all completed questionnaires was scheduled (July). Patients were given the opportunity to use a free telephone service for assistance, information and translation help.

The focus was on recruitment of enough participants to ensure sufficient statistical power to create performance measures for hospitals, area health services and the state. The sampling design of the survey was a stratified random sample, stratified by hospital. Neither the sampling strategy or the case weight methods recognised the age, gender or morbidity profile of hospitals and participants. Thus, response bias cannot be adequately assessed.

In 2009, response rates for day only (49%) and overnight (46%) patients were good. By comparison, response rates in Victoria for a similar inpatient survey were 40 and 39 percent in 2007-08 and 2008-09, respectively.^{11,12} Inpatient survey response rates were 64, 63, 59 and 59 per cent in the National Health Service in England between 2002 and 2006.¹³

In 2009, case weights were calculated on the basis of hospital volume to adjust for variation in responses across facilities. The Bureau's staff verified the case weights assigned in 2009 and used them in its analyses. Due to the above-mentioned data limitations for the sample frame, no case weight adjustments could be made to account for variation in responses across age, gender or morbidity groups.

In August 2009 the process and outcomes of the NSW Patient Survey were evaluated by the NSW Department of Health. A NSW Health Patient Survey Governance Committee established by the Department adopted all 25 recommendations for improvement.

The Department of Health staff report that the 2010

NSW Health Patient Survey will transition from the annual February collection of patient data to continuous collection throughout the year, where possible. Patients will be given the option to complete the Survey by telephone or online. The results will be distributed to each hospital using a web based application and the general public will be able to access aspects of the results through the World Wide Web. These changes will improve access to data by health service managers, frontline staff and the public.

Opportunities to improve

The sampling strategy has been designed to recognise that hospitals across NSW have very different service volumes; it does not recognise differences in the demographic and health status of patients who visit different hospitals. Since the age, ethnicity and health of patients influence the likelihood that they will complete a survey or report positive experiences with care, one way to further minimise response bias is to use a sampling strategy and/or case weight methods that accounts for these patient characteristics.

The response rates for this survey are good but might be improved if a shorter version of the questionnaire were used and through consideration of additional recruitment strategies.¹⁴

Does the NSW Health Patient Survey use a robust survey questionnaire?

The NRC+Picker patient survey questionnaire measures dimensions of care identified in qualitative research as important to patients.¹⁵ Thus, it has face and content validity.

The Bureau has determined that the design of the 2009 day only questionnaire has resulted in caveats for five of the 88 questions that should be made known to analysts.

- In the 2009 day only questionnaire, question eight

asks “Before your admission, did you have any tests?” If yes, patients proceed to answer questions nine to 13. If patients did not have a test, they were asked to proceed to question 14. Instead, these patients should have been asked to proceed to answer question 13 which asks “Did you have to wait too long to schedule your procedure?” The result is that the only patients asked “Did you wait too long to schedule your procedure” were those who had a test before their hospital day admission.

- In the 2009 day only questionnaire, question 42 asked if patients “Were ever in any pain”. If not, they were asked to proceed to question 52. Instead, these patients should have been asked to proceed to answer question 48. Questions 48 to 51 relate to a survey module on the topic of hand hygiene. The result is that only patients who had pain would have known to answer questions 48 to 51 about hand hygiene.

There seems to be little research evidence in the public domain to establish the survey questionnaire’s concurrent validity, reliability, sensitivity and specificity.

Opportunities to improve

The NSW Department of Health could require documentation to substantiate the validity, reliability and sensitivity of the questionnaire through its contractual relationship with NRC+Picker and other survey research firms.

Since the NRC+Picker survey was used in NSW and has been used in North America, there are opportunities to compare NSW to jurisdictions on that continent. Additionally, some of the questions on the NRC+Picker survey are similar to the Picker Europe survey; there are opportunities to compare NSW to jurisdictions in Europe. This would require a special purpose analyses to create fair comparisons since different jurisdictions measure care experiences among slightly different groups of patients.

Since the NRC+Picker survey was used in NSW and

another survey was used in Victoria, there have been few opportunities to compare NSW to Victoria.² More recently the Australian Bureau of Statistics has conducted a care experiences survey of the general public and will publish interstate comparisons of performance on an annual basis starting in July 2010.

Does the NSW Health Patient Survey use a robust approach to reporting results?

The NSW Department of Health has released public reports following implementation of the survey in 2007, 2008 and 2009. Those reports include statewide performance and some information about area health services and hospitals. Results have not been standardised to support comparisons between hospitals and area health services that vary in patient characteristics known to affect ratings, such as age and health status.

The Department of Health staff report that the general public will be able to access aspects of the survey results through the World Wide Web in 2010. These planned improvements aim to improve the public's access to data.

Opportunities to improve

The Bureau's report *Insights into Care: Patients' Perspectives on NSW Public Hospitals* provides an example of how the results of a complex patient survey can be distilled to provide the community with important information regarding the performance of the NSW public health system.

To support fair comparisons for the purposes of public reporting, patient ratings of care experiences should be standardised statistically to show how area health services or hospitals would rate if they served very similar populations of patients. The process of standardisation is important because different area health services and hospitals provide services to different kinds of people with different illnesses and severity of illness. These differences can affect patients' ratings of care independently of the quality of the care healthcare workers give them during their stay in hospital.

The Bureau's findings that patient characteristics are

associated with their ratings of quality of care align with results of a systematic review of international evidence.¹⁶ These findings underscore the necessity of standardisation in order to make comparisons fairer.

Graphics in the Bureau's report illustrate that there is more variation across area health services in the per cent of day only or overnight patients that offer "very good and excellent" or "excellent" ratings of overall quality of care than there is in the per cent of patients reporting "good, very good or excellent" care. This suggests that a performance measurement and management strategy would be more discriminative if it focused on "excellent" or "very good and excellent" and excluded the "good" category.

GLOSSARY OF TERMS

Case weights are numeric values used by analysts to account mathematically for the degree to which participants in the survey are representative of the underlying population.

Concurrent validity refers to the degree to which the survey results correlate with other measures of the same construct that are measured at the same time.

Construct validity refers to the different constructs or dimensions of care that the survey questionnaire attempts to measure such as access to care, staff courtesy, etc. and the degree to which they represent the totality of what is important.

Factor analysis refers to research methods used to ensure that survey questions measure different constructs. It can also be used to assess the degree to which each question adds value to the measure of each dimension or, conversely, does not add value.

Face validity refers to whether a survey, on the face of it, represents all of the types of experiences that clinicians or patients would agree influence quality of care.

Recall bias refers to the degree to which the distribution of answers to a survey is affected by respondents' memories and recollection of events.

Reliability refers to the consistency of a survey in measuring performance such as whether it obtains the same or very similar measurements of performance at two different times when actual care experience has not changed between them.

Response bias occurs when not all patients complete a survey and those that do are not representative of all patients. A robust sampling strategy, high participation rates and appropriate use of case weights in the analysis will tend to minimise this bias.

Sample frame refers to the list of people who are eligible to be recruited to participate in the survey.

Sampling strategy refers to research methods used to randomly select patients to be invited to complete a survey. This process should ensure that patients who complete the survey are as representative of all patients as possible.

Sensitivity refers to the degree to which a survey detects differences in care experiences between hospitals or area health services, or over time, when there are true differences or changes in care experiences.

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