

**Evidence Check**

# Surveying patient experiences in smaller facilities

An **Evidence Check** rapid review brokered by the Sax Institute for the Bureau of Health Information. August 2014.

**This report was prepared by:**

Deniza Mazevska and Jim Pearse.

August 2014.

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**Enquiries regarding this report may be directed to the:**

Manager  
Knowledge Exchange Program  
Sax Institute  
[www.saxinstitute.org.au](http://www.saxinstitute.org.au)  
[knowledge.exchange@saxinstitute.org.au](mailto:knowledge.exchange@saxinstitute.org.au)  
Phone: +61 2 91889500

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# Surveying patient experiences at smaller facilities: an Evidence Check rapid review

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# 1 Introduction

The NSW Bureau of Health Information (BHI) commissioned an evidence check to identify appropriate methods for collecting patient experience information in smaller facilities.

The BHI is interested in whether similar tools and processes to those currently used by the BHI for measuring patient experience in large- and/or medium-sized health facilities are also being used effectively to measure patient experience in small health facilities in other settings. The Evidence Check is also intended to identify aspects of patient experience which are particular to small facilities and which may require specific survey questions. The BHI wishes to understand strategies used in other Australian jurisdictions and/or internationally to achieve robust and valid data, and the findings of any studies related to this area. The review report will inform the development of a Smaller Facilities Patient Experience strategy for the NSW Patient Survey Program.

The Evidence Check is being conducted at the beginning of the survey development process and will inform the scope, questionnaire design and sampling strategies. The information will in the first instance be used by the BHI's Patient Survey team and the survey contractor.

## 2 Background

The BHI manages the NSW Patient Survey Program on behalf of the Ministry of Health and Local Health Districts (LHDs). The BHI has committed to the development of a strategy for the collection of information from patients attending smaller facilities.

In the past, surveys were sent to patients of all health facilities across the state. However, the results for some facilities were never reported, due to the small sample from those facilities. When the program was redeveloped, the BHI and the Strategic Advisory Committee agreed to boost sample numbers where possible. They also decided to exclude smaller facilities from the main surveys which include the Adult Admitted Patient Survey, the Emergency Department Survey, the Admitted Children and Young Patient Survey and the Outpatient Survey.

Currently, tertiary, major and district hospitals (peer groups A, B and C) are included in the main surveys. Smaller facilities (peer groups D and F) such as small rural hospitals and multipurpose services, as well as several small specialised facilities in metropolitan areas, are excluded.

As the number of patients in small facilities is low, it can be challenging to achieve an adequate sample size for meaningful reporting. In addition, the service mix provided by small facilities tends to differ from that provided by larger facilities. Although it might be possible to use small area (domain) estimation methods to report results where sample sizes are inadequate, the context of this review is to consider methods that would not require small area methods, but could be used to report using standard survey methods (if a survey is recommended).

# 3 Review questions

The specific questions specified by the BHI for the Evidence Check are:

1. How are survey methods currently used to assess patient experience in small health facilities?
2. How are survey methods most effectively used for assessing patient experience in small health facilities settings?
3. Which other measurement methods are currently used in assessing patient experience in small health facilities settings?
4. What are the domains of patient experience that have been measured in small health facilities settings?

# 4 Scope/definitions

The BHI is interested in measuring and reporting on patient experience in small facilities that would not be compromised by sample size, and reflects the service mix of these smaller facilities.

The BHI has provided the following definitions for the key concepts used in this Evidence Check:

- *Small health facilities (SHF)* – these are predominantly small facilities, often in rural areas, plus some small and/or specialised facilities in metropolitan areas (for example, facilities offering rehabilitation, dialysis) (see NSW Hospital Peer Groups for classification of NSW Health Facilities). Typically, small health facilities vary considerably in their service delivery models. Facilities to be considered for inclusion as part of the small facilities project are peer groups D (Community acute hospitals with or without surgery), E (Ungrouped acute other), and some F (includes Nursing homes, Multipurpose services, sub-acute, palliative care, rehabilitation and other ungrouped).
- *Patient experience* – this is broadly defined to include all aspects of subjective patient experience related to healthcare received in small health facilities, and post-discharge experience where relevant.
- *Surveys* – these are broadly defined to include probability-based surveys, censuses and other survey types, and all modes of data collection (paper-based, telephone, face to face and internet). The scope includes surveys that are used, or are intended to be used, for ongoing, health system-wide assessment and monitoring of patient experience.

Note that this Evidence Check makes a distinction between population-based surveys of patient experience and those where the samples for the surveys are drawn from patients having attended a particular hospital. Although the former were not excluded from the search strategy, this Evidence Check focuses on the latter. This is because the questions for this Evidence Check specifically relate to problems of obtaining a sufficient number of completed responses from particular small facilities, and not from the general population.

# 5 Conceptual view of the 'problem'

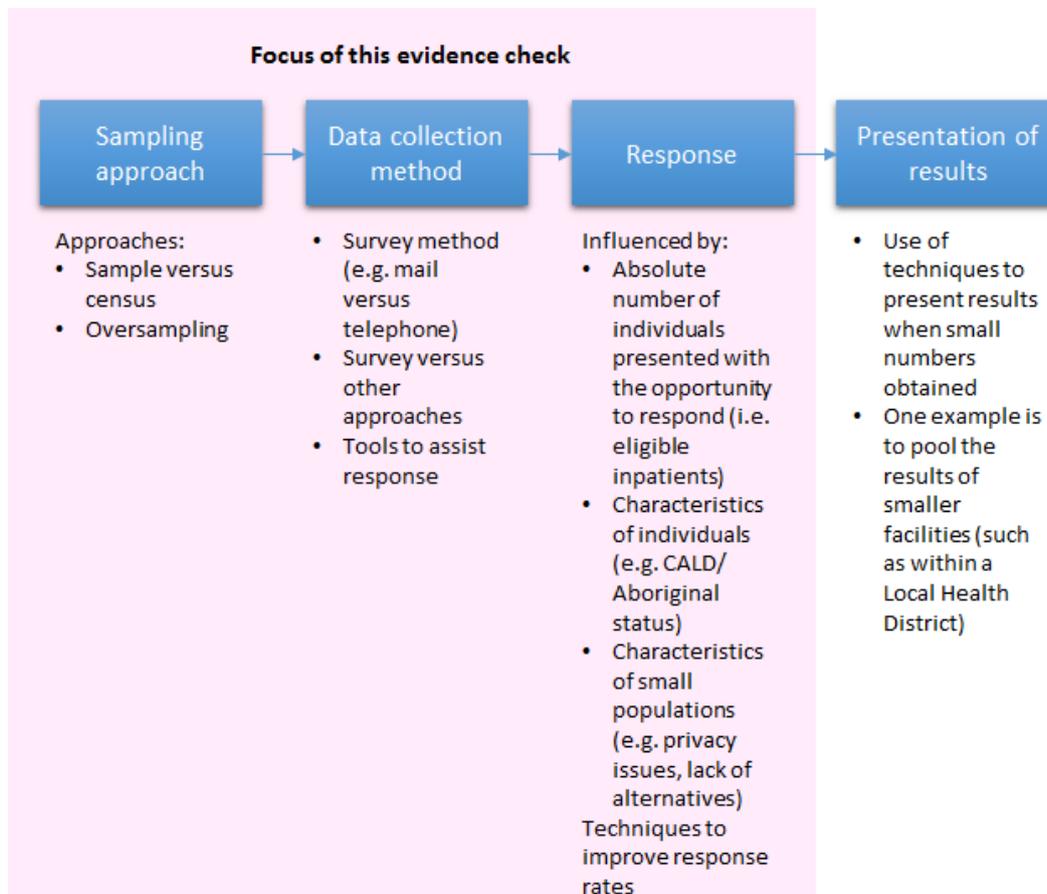
Figure 1 shows some of the key processes involved with measuring patient experience. There are opportunities to increase numbers at each of the steps involved in the process as well as to use techniques to report results when small numbers are obtained for any particular facility. As a starting point, it is relevant to emphasise that this Evidence Check is about obtaining patient experience responses from a large enough group of patients from specific facilities for statistical robustness of the results reported for the facility.

Therefore, this Evidence Check focuses on:

- Approaches to sampling that can make available a larger number of patients whose experiences will be sought
- Approaches to collecting data that may enhance participation
- Techniques used to improve response rates.

It does not focus on approaches to presenting information on patient experience when a small number of responses are obtained for any facility.

Figure 1 – Process for obtaining patient experience information and focus of this Evidence Check



# 6 Search strategy

## Initial search

Searches for scholarly articles were undertaken using PubMed and the Cochrane Library. Terms and combinations of terms were used for the search as shown in the Table below. No date restrictions were applied to the searches. However, they were limited to articles available in the English language. In addition, while undertaking the searches below and/or retrieving any articles that seemed to relate to the research questions, where the function was available, searches for related papers were also followed up. Further still, references appearing in papers retrieved were pursued if they also looked like they may relate to the research questions.

Terms/combinations*	Number of citations returned	Relevance to current Evidence Check (determined after review of title or abstract)
PubMed		
"Patient satisfaction"[Mesh] AND "Health facility size"[Mesh] AND "Methods"[Mesh]	7	<ul style="list-style-type: none"> <li>• Not relevant.</li> </ul>
"Patient satisfaction"[Mesh] AND "Health facility size"[Mesh]	272	<ul style="list-style-type: none"> <li>• None specific to the topic.</li> <li>• 14 articles were retrieved for further review based on their title or abstract.</li> </ul>
"Patient experience"[Title] AND "Health facility size"[MeSH Terms]	1	<ul style="list-style-type: none"> <li>• Not specific to the topic.</li> </ul>
"Patient experience"[Title] AND "Method"[Title]	8	<ul style="list-style-type: none"> <li>• None specific to the topic.</li> <li>• Two articles were retrieved for further review.</li> </ul>
"Patient experience"[Title] AND Measure[Title]	0	
"Patient experience"[Title] AND Rural[Title]	0	
"Patient experience"[Title]	450	<ul style="list-style-type: none"> <li>• None specific to the topic.</li> <li>• Titles were scanned and no additional articles of relevance were identified.</li> </ul>
Cochrane Library (includes Cochrane and other systematic reviews)		
"Patient experience" in Title, Abstract, Keywords in Methods studies	38	<ul style="list-style-type: none"> <li>• None specific to the topic.</li> <li>• The abstracts for five studies/reviews were extracted based on the title. However, after review of the abstract or the whole study, only one study was vaguely relevant to the</li> </ul>

Terms/combinations*	Number of citations returned	Relevance to current Evidence Check (determined after review of title or abstract)
		questions posed for this Evidence Check.

*Table 1 – Search strategy and results – published/peer reviewed literature – initial search*

\* Restricted to English in every instance.

Note: The MeSH term 'Patient satisfaction' encompasses 'patient experience' in addition to a range of other variants. The MeSH term 'Health facility size' also encompasses all variants of this term, including 'hospital size' and 'facility size'.

In addition to peer reviewed literature, a general web search was undertaken using combination of the search terms as in Table 1. This returned scholarly articles already picked up by the searches above, and one other report of relevance undertaken by a health agency in the United Kingdom (de Silva, 2013). Websites of key organisations were then searched for information on approaches to measuring patient experience, specifically in relation to the approach to managing such surveys/data collection approaches in small facilities. These websites included:

- National Health Performance Authority (NHPA) (Australia)
- Australian Commission for Safety and Quality in Health Care (ACSQHC) (Australia)
- Agency for Healthcare Research and Quality (AHRQ)
- The Centers for Medicare & Medicaid Services (CMS), specifically in relation to the CAHPS/HCAHPS system (USA)
- The Canadian Institute for Health Information (CIHI) (Canada)
- Organisation for Economic Cooperation and Development (OECD)
- Australian state and territory health departments.

Finally, key individuals were contacted for further information on their approaches. These included individuals from other states in Australia as well as international organisations (see Attachment 1 for listing).

### Subsequent search

Following a review of the initial draft of this report by the BHI it was suggested that a search of measurement of patient experience in primary care settings be undertaken to investigate whether the issue of small sample size has been documented by any studies. This search was undertaken initially of peer reviewed literature, for which the results are shown in Table 2.

Terms/combinations*	No. of citations returned	Relevance to current Evidence Check (determined after review of title or abstract)
<i>PubMed</i>		
"Patient satisfaction"[Mesh] AND "Primary health care"[Mesh] AND "Methods"[Mesh]	112	Eight articles were retrieved for further review based on their title or abstract. One was found to be relevant and the author and related references were followed up.
"Patient experience"[title] AND "Primary health care"[Mesh] and "Size"[title]=0	0	

Terms/combinations*	No. of citations returned	Relevance to current Evidence Check (determined after review of title or abstract)
"Patient experience"[title] AND "Primary health care"[Mesh] and "Sample"[title]	0	
"Patient experience"[title] AND "Primary health care"[Mesh]	58	None relevant to the topic.  Six articles were retrieved for further review based on their title or abstract. However, none were found to be relevant.

*Table 2 – Search strategy and results – published/peer reviewed literature – subsequent search*

*\* Restricted to English in every instance.*

*Note: The MeSH term 'Patient satisfaction' encompasses 'patient experience' in addition to a range of other variants.*

Other literature was also searched through a general internet search using the above combinations of key terms. However, the papers retrieved were not relevant to this review.

# 7 Australian agencies/jurisdictions

National agency staff and state and territory representatives were contacted to obtain information about their patient experience approaches, and specifically about any specific approaches relating to small facilities. The Australian Bureau of Statistics (ABS) was not pursued, as its patient experience survey is population-based (ABS, 2010), and thus, it does not encounter issues with specific facilities.

The National Health Performance Authority (NHPA) does not undertake its own patient experience surveys, but currently reports on the *Australian Bureau of Statistics Patient Experience Survey* (see NHPA, 2013). There are plans to also report on patient experience data collected by hospitals (for the purposes of comparing within a state/territory). This is being developed currently, based on work undertaken by the Australian Commission on Safety and Quality in Health Care (ACSQHC) (see below).

The ACSQHC has been developing core common questions to be included in patient experience surveys to allow comparisons across Australia. Therefore, its focus has not been on how data might be collected by individual facilities. However, the ACSQHC recently developed a survey for primary care, and will administer this, so is likely to face the issue of small populations from which to draw samples to obtain statistically viable results in the future.

The ACSQHC provided contacts from individual states/territories to obtain information on state/territory approaches. The results of these are reported in Table 3. Where information could not be obtained from an individual, the ACSQHC’s report *Review of Patient Experience And Satisfaction Surveys Conducted within Public and Private Hospitals in Australia* (ACSQHC, 2012) was used as a basis for the information below. This information was also verified against information provided on the state’s/territory’s website (where available).

Jurisdiction	Patient experience approach	Approach to measuring patient experience in small facilities
Victoria	<p>Use the Victorian Health Experience Survey (VHES) (previously used the Victorian Patient Satisfaction Monitor – VPSM). Individual questionnaires are developed for the following population groups:</p> <ul style="list-style-type: none"> <li>• adult in-patients</li> <li>• adult emergency</li> <li>• maternity</li> <li>• paediatric in-patients</li> <li>• paediatric emergency</li> <li>• adult specialist clinic (outpatient) (soon to be developed)</li> <li>• paediatric specialist clinic (outpatient) (soon to be developed)</li> <li>• community health service (soon to be</li> </ul>	<p>Where the expected return rate will not yield an adequate sample to provide statistically significant results to a health service (based on the forecast return rate of, for example, 38 per cent for adult inpatients) VHES adopts a census approach and sends questionnaires to ALL eligible patients who have separated from a facility in the targeted period. When 10 responses are received the health service will be sent a qualitative report that they are instructed will not provide any comparison to other health services. Once 30 responses have been received the health service will be provided with a statistically generated</p>

Jurisdiction	Patient experience approach	Approach to measuring patient experience in small facilities
	developed).	report.  To provide these small health services with an indicative guide to their performance and to supplement the VHES approach, VHES is considering providing hand-held survey devices to small health services.
South Australia	Use South Australian Patient Experience Surveys. Administered via telephone (Computer-assisted telephone interviewing - CATI) following a letter informing the patient that they will be surveyed.	No specific approach mentioned.
Western Australia	Use the Patient Evaluation of Health Services Questionnaire. Administered as a telephone interview (CATI) (with a letter initially informing the person that they will get a call). Separate surveys for general inpatients, maternity, outpatients and emergency.	Calculate a sample so that the overall indicator of satisfaction score can be generated with the lowest possible error margin (95% confidence interval).  Group results together for facilities when numbers returned are too small.
Queensland	Conduct surveys for medical, surgical, maternity and emergency department patients. Administered via CATI system.	Calculate a sample for each hospital aimed at achieving a 75% response rate and providing a confidence interval achieving a margin error up to 6 percentage points either side of a point prevalence estimate of 60%. For facilities in which the expected number of in-scope patients is expected to be less than the number necessary to achieve the required level of precision (or where the number of patients is only marginally higher than this), a census is attempted of all in-scope patients.
Australian Capital Territory	Use the ACT Health Directorate Survey (a subset of the Victorian Patient Satisfaction Monitor Survey). Includes 30 core questions plus optional questions. Aimed at adults. Administered via mail.	No approach mentioned. Although, it is noted that response rate for surveys in 2010-11 was 37%.  Use focus groups to elicit information for certain client groups.
Northern Territory	No territory-wide survey; separate surveys developed by Gove District, Alice Springs, Katherine and Royal Darwin hospitals. Surveys developed for local use in consultation with	No specific approach mentioned.

Jurisdiction	Patient experience approach	Approach to measuring patient experience in small facilities
	Aboriginal liaison officers, social workers and feedback from patients. The surveys are administered face to face as for the majority of patients, English is a second language and there are low literacy levels.	
Tasmania	Surveys are conducted by individual hospitals. The last statewide survey was in 2007, undertaken by Press Ganey Associates Pty Ltd using the Press Ganey survey tool (including inpatient and emergency).	No specific approach mentioned.

*Table 3 – Summary of state/territory approaches to measuring patient experience, including in small facilities*

### **Summary of Australian approaches to measuring patient experience in small facilities**

Very little information was available from Australian organisations, including state and territory health departments, to answer the questions of the current Evidence Check. The main approach to measuring patient experience in small facilities mentioned by individuals or found in relevant reports/websites was to survey all patients within a facility (i.e. census) rather than selecting a sample. Also note that the Victorian Health Department is considering the use of handheld survey devices in small facilities to enhance participation and also to supplement the VHES approach, to ensure that these facilities are obtaining feedback on their performance.

The approach used by the Northern Territory to undertake face to face interviews rather than a mail survey, is also worth noting. While this is primarily aimed at obtaining patient experience information from people whose first language may not be English, and obtaining patient experience in a more culturally appropriate way, it also assists in obtaining higher response rates.

# 8 International agencies/systems

## Organisation for Economic Co-operation and Development (OECD)

The OECD has had an interest in patient experience over a number of years. One of its projects is the *Health Care Quality Indicator (HCQI)* Project, which commenced in 2001 and is aimed at developing a set of indicators that reflect a robust picture of health care quality that can be reliably reported across countries using comparable data (Kelley & Hurst, 2006). The framework used for quality by the OECD includes a dimension of 'patient centeredness/patient focus/responsiveness', which encompasses patients' reports of their experience with specific aspects of care. However, the OECD's main work has been in approaches to measuring patient experience of the population (i.e. as opposed to patients discharged from specific facilities) and standardising questions to enable comparisons across countries (Directorate for Employment, 2013). Therefore, no useful information regarding capture of patient experience information in relation to small facilities could be yielded from the OECD.

## World Health Organisation (WHO)

WHO implemented the World Health Survey between 2002 and 2004 in countries selected to represent all regions of the world (WHO, 2014). The Survey included questions on health system responsiveness. The Survey is not relevant to the questions of the current review as it was conducted as a population-based survey rather than a survey relating to specific facilities.

## United States of America

### Agency for Healthcare Research and Quality (AHRQ)

AHRQ funds and administers the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) (Agency for Healthcare Research and Quality, 2014). The Program includes a suite of surveys related to hospitals, haemodialysis centres, nursing homes, physicians and physician groups, as well as health care plans (e.g. general health care plans, managed care organisations and dental plans). It is a public-private initiative, and surveys are available in the public domain. The suite of hospital related survey instruments are referred to as the Hospital Consumer Assessment of Healthcare Providers and Systems or HCAHPS, which is now directly managed by the Centers for Medicare and Medicaid (see next section). AHRQ also manages a national repository for data from the CAHPS Health Plan Survey and the CAHPS Clinician & Group Survey, known as the CAHPS Database.

The guidelines for the sample size for health plans suggests a minimum of 300 completed surveys for inclusion in the CAHPS Database (Agency for Healthcare Research and Quality, 2008). The response rate to be used as a guide for determining the sample drawn is 50%. Therefore, the minimum sample size is 600 patients/enrolees. Guidance is also given that "If one or more of the plans do not have a membership large enough to draw the required sample size, the sample will be everyone in the health plan enrollee population who meets all the eligibility criteria" (Agency for Healthcare Research and Quality, 2008, p. 6).

Guidance is also given on how to maximise response rates from 'hard to reach' people, such as people who work shifts, and also from people who do not speak English.

**The Centers for Medicare & Medicaid Services (CMS)**

CMS manage a nationwide survey of patient experience known as HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems). These surveys originated from work undertaken by AHRQ (see above). The HCAHPS survey is not restricted to Medicare beneficiaries, and the results are publicly reported (CMS, 2014b).

To participate in HCAHPS, hospitals must survey patients throughout each month of the year. The survey can be implemented in four different survey modes: mail, telephone, mail with telephone follow-up, or active interactive voice recognition. The survey is available in official English, Spanish, Chinese, Russian and Vietnamese versions. The survey and its protocols for sampling, data collection and coding, and file submission are detailed in the HCAHPS Quality Assurance Guidelines (CMS, 2014a).

To participate in the HCAHPS inpatient component, hospitals must submit at least 300 completed surveys in a rolling four-quarter period (unless the hospital is too small to obtain 300 completed surveys, in which case the results will still be reported publicly, but with a note that the hospital has fewer than 100 or 50 completed surveys, and that lower precision of scores are derived from these low numbers) (Centers for Medicare & Medicaid Services, 2014a). This is a mandated requirement most recently reflected in the *2014 Inpatient Prospective Payment System (IPPS) Final Rule (CMS-1599-F)* (CMS, 2013). Therefore, hospitals must generate a sample that provides for that number, plus a factor for ineligibility of selected patients to participate and non-response (HICAPS operates on a 17% ineligibility rate and a 32% nonresponse rate; therefore the number targeted in the sample will need to be inflated by these two factors to achieve a number that will yield at least 300 completed surveys. Using these factors, at least 1259 eligible discharges would need to be sampled over a 12-month reporting period). Where hospitals have a lower number of discharges than required by the sampling approach, they must sample all eligible discharges each month (i.e. conduct a census) and attempt to obtain as many completed surveys as possible.

The basis of the requirement for a sample of 300 is not immediately apparent in the CMS publications, although the Quality Assurance Guide for the instrument indicates the "...required number of completed surveys for the statistical precision of the publically reported hospital ratings is based on a reliability criterion" (CMS, 2014a). A discussion of reliability approaches to sample size determination is provided later in this report, as opposed to precision based approaches (see Approaches to determining minimum sample sizes later in this report). The threshold of 300 completed surveys appears to be based on analysis undertaken in the development of the original version of HCAHPS (CAHPS II Investigators and Agency for Healthcare Research and Quality, 2003). The analysis was based on a pilot of the instruments and included estimation of the inter-hospital reliability for the items using sample sizes of 100, 200 and 300. This is shown in Table 4. Generally, inter-hospital reliability values of less than .70 are considered undesirable and value of over .85 are considered necessary for 'high stakes' applications, such as public reporting or pay for performance initiatives (Lyratzopoulos et al., 2011). The pilot study revealed sample sizes of 300 or above were required to achieve reliability values of .70 or above, or close to .70 on most of the HCAHPS items (Table 4). The study also revealed variation in inter-hospital reliability across the items.

Survey question	Proportion response	Between variance	Within variance	Between/within	Reliability			Z Value
					N=100	N=200	N=300	
Rate Nurse (Q10)	98.9	0.0559	3.7242	0.0150	0.597	0.748	0.817	5.81
Rate Doctor (Q15)	98.8	0.0247	3.3214	0.0074	0.423	0.595	0.688	3.50
Rate Hospital (Q52)	98.9	0.0656	3.5765	0.0184	0.645	0.784	0.845	6.63
Nurse Respect (Q4)	99.5	0.0045	0.3794	0.0118	0.540	0.701	0.779	4.77
Nurse Listen (Q5)	99.3	0.0072	0.4906	0.0147	0.593	0.744	0.814	5.56

Survey question	Proportion response	Between variance	Within variance	Between/within	Reliability			Z Value
					N=100	N=200	N=300	
Nurse Explain (Q6)	99.2	0.0073	0.5464	0.0133	0.569	0.725	0.798	4.90
Nurse Enough Time (Q7)	99.2	0.0093	0.6954	0.0133	0.569	0.725	0.798	5.18
Call Button Response (Q9)	78.2	0.0158	0.6612	0.0239	0.652	0.789	0.849	6.30
MD Respect (Q11)	98.8	0.0017	0.3610	0.0048	0.323	0.488	0.589	2.74
MD Listen (Q12)	98.7	0.0029	0.4912	0.0059	0.368	0.538	0.636	3.04
MD Explain (Q13)	98.7	0.0036	0.4848	0.0075	0.424	0.595	0.688	3.38
MD Enough Time (Q14)	98.5	0.0044	0.6987	0.0063	0.384	0.555	0.652	3.17
Temperature (Q16)	99.0	0.0037	0.5453	0.0068	0.404	0.575	0.670	3.34
Room Clean (Q17)	98.3	0.0056	0.5855	0.0096	0.487	0.655	0.740	4.53
Room Quiet (Q18)	98.3	0.0099	0.7083	0.0140	0.578	0.733	0.804	4.77
How Often Bathing (Q20)	39.4	0.0124	0.8246	0.0150	0.371	0.542	0.639	3.25
How Often Bathroom (Q22)	47.7	0.0113	0.6885	0.0163	0.438	0.609	0.701	3.92
Privacy (Q24)	49.2	0.0024	0.5688	0.0042	0.171	0.293	0.383	1.67
Treatment Decisions (Q25)	97.5	0.0061	0.7289	0.0084	0.451	0.621	0.711	3.98
Family/Friends Get Help (Q27)	93.7	0.0036	0.4664	0.0078	0.423	0.594	0.687	3.75
Staff Introduce (Q28)	98.7	0.0041	0.5191	0.0079	0.437	0.608	0.699	3.66
MD Respond Pain (Q31)	56.3	0.0098	0.6035	0.0162	0.477	0.646	0.732	4.05
Pain Controlled (Q32)	88.2	0.0019	0.5383	0.0036	0.241	0.388	0.488	2.16
MD Pain Help (Q33)	87.5	0.0043	0.5054	0.0085	0.426	0.598	0.690	3.88
Tests Without Pain (Q35)	84.8	0.0021	0.6837	0.0031	0.209	0.345	0.442	1.94
Name of Rx (Q37)	52.6	0.0039	0.8285	0.0047	0.198	0.331	0.426	1.80
Purpose of Rx (Q38)	53.0	0.0022	0.6884	0.0032	0.147	0.256	0.340	1.35
Taking Other Rx (Q39)	52.4	0.0033	0.9636	0.0035	0.154	0.266	0.353	1.41
Allergic to Rx (Q40)	52.7	0.0041	0.7414	0.0055	0.224	0.366	0.464	2.02
Rx Side Effects (Q41)	52.4	0.0119	1.3032	0.0092	0.324	0.490	0.590	2.77
Recommend Hospital (Q53)	98.7	0.0122	0.5326	0.0229	0.693	0.819	0.871	7.33
Delays in Admission (Q43)	97.7	0.0008	0.1225	0.0066	0.391	0.563	0.659	3.46
Living Will (Q44)	92.4	0.0075	0.1574	0.0476	0.815	0.898	0.930	5.98
Activities in Writing (Q47)	71.7	0.0012	0.1079	0.0107	0.435	0.606	0.698	3.48
Help After Discharge (Q48)	71.4	0.0027	0.1376	0.0198	0.586	0.739	0.809	4.47
Symptoms in Writing (Q49)	94.3	0.0019	0.1328	0.0140	0.568	0.725	0.798	4.25
Meds in Writing (Q51)	37.4	0.0004	0.0754	0.0051	0.159	0.274	0.362	1.50

*Table 4 – Reliability analysis for all items in the version of pilot version of HCAHPS*

Source: CAHPS II Investigators and Agency for Healthcare Research and Quality, 2003, pp. 8-13.

### The Commonwealth Fund

The Commonwealth Fund has also administered a wide range of patient experience surveys over time, aimed at different population groups (e.g. children, specific racial groups) and of specific programs (e.g. Patient-Centered Medical Home Demonstration Projects). However, the surveys are of the general population rather than facility-based (The Commonwealth Fund, 2014).

### Canada

#### Canadian Institute for Health Information (CIHI)

CIHI has recently developed a standardised patient experience survey, the Canadian Patient Experiences Survey – Inpatient Care (CPES-IC), to be used across the country. It uses HCAHPS described above as the

base. The survey has been available for implementation since April 2014 (Canadian Institute for Health Information, 2014b). It is designed to survey patients in large or small hospitals, in urban and rural settings. The approaches for measuring patient experience in small facilities are as those outlined for HCAHPS above (Canadian Institute for Health Information, 2014a). Personal communication with the Senior Coordinator, Performance Improvement and Capacity Building (Fernandez, 2014) also revealed that “while the survey procedures manual offers flexibility about random sampling techniques for large and small hospitals, CIHI has learned that jurisdictions across Canada tend to use census or continuous random sampling in small hospitals”. CPES-IC is available in French and English.

### United Kingdom

The National Health Service (NHS) publishes the results of the National Patient Survey Programme, which is overseen by the Care Quality Commission (CQC) (NHS England Analytical Team, 2013). The Survey is based on the Picker Institute approach, and data collection and analysis is jointly managed by CQC and Picker Europe.

Each Trust in the NHS is required to send out 850 questionnaires to achieve 500 responses, regardless of the size of the Trust (Picker Institute Europe, 2013). An initial sample of 900 patients is taken by choosing the month end (which needs to be June, July or August in a given year, and needs to be the same month as the previous year, unless formal approval is provided for a different month), and consecutive records are then drawn from discharges occurring from the last day in the selected month and prior until 900 patients meeting the inclusion criteria have been extracted. Smaller Trusts go back as many months as it takes (but no later than January of the same calendar year) until 900 records have been obtained.

The Picker approach as used in the NHS works on a 60% response rate. Trusts must carefully follow the guidelines to achieve this rate. Trusts are not allowed to boost their response rates by including more than 850 patients in their mail survey. They must instead use other techniques such as publicising the survey to staff, patients and the community, and sending out the specified reminders. The Picker Institute also recommends that patients are offered a telephone interpreter service by the Trust to assist them in completing the survey when English is problematic.

### Norway

National surveys of patient experiences have been undertaken within Norway for more than a decade using the Patient Experiences Questionnaire (PEQ), including an outpatient version (OutPatient Experiences Questionnaire or OPEQ) (Danielsen, Garratt, Bjertnæs, & Pettersen, 2007; Garratt, Bjaertnes, Krogstad, & Gulbrandsen, 2005).

More recently, Norway has built a repository that stores hospital patient administration system and laboratory data from all Norwegian health trusts (Dimoski, 2013). The tool is used to compile data for national quality indicators, supplement national health registries, measure KPIs within selected hospitals, and gather and store patient experience information. In relation to the latter, patients are provided with an option to respond to surveys of their experience electronically through the system. In 2012, 4,000 patients had responded electronically and in 2013, 25,000 patients had been invited to respond. Studies are currently being published on the results of these surveys for specific groups (e.g. Sjetne, Kjøllesdal, Iversen, & Holmboe, 2013).

No information about obtaining responses from people treated in small hospitals was found.

## New Zealand

The New Zealand Ministry of Health conducts an annual population based patient experience survey (Ministry of Health, 2013). Else, there is no consistent national approach to measuring and collating hospital based patient experience surveys (KPMG, 2013). This is currently being developed (KPMG, 2013).

# 9 Summary of international approaches to measuring patient experiences in smaller facilities

A review of websites and contacts with key international organisations with a role in patient experience identified three key strategies for achieving minimum numbers of completed patient experience surveys for statistical robustness:

- Use of a census rather than sampling
- Techniques to boost response rates, such as publicising the survey to patients and staff, making the survey available in multiple languages (or offering an interpreter service)
- Strategies to reach those that are difficult to reach (e.g. day and evening calls for people who may work shifts).

# 10 Results from scholarly literature

No articles specifically relating to the research questions were found. The articles with a specific focus on patient experience and facility size investigated the relationship between these two factors rather than commenting on any methodological issues regarding obtaining patient experience information from patients attending smaller facilities.

Overall, the literature in this area seems to focus on differences in patients' perceived quality of care (as measured through patient experience surveys) based on two factors: the characteristics of the hospitals and the characteristics of the patients treated. Apart from size, other characteristics of hospitals studied were location (rural versus metropolitan/urban) and teaching status. In terms of patient characteristics, age, education level and health status were studied.

A brief outline of the comparisons and findings from these studies is in Table 5.

Comparison	Study	Findings
Small versus large facilities	Danielsen et al., 2007	Compared with hospitals located in the largest urban centers of 50,000 inhabitants, hospitals located in population centers of between 15,000 and 50,000 inhabitants produced lower scores.
	Sjetne, Veenstra, & Stavem, 2007	Small hospitals (defined as the hospitals in the lower tertile based on bed capacity, with 36-85 beds) received the highest ratings and large hospitals (226-725 beds) the lowest. However, effect of size was small.
	Messina, Scotti, Ganey, & Zipp, 2009	Significant but negative relationship between patient satisfaction and inpatient volume.
	Pink, Murray, & McKillop, 2003	Small hospitals associated with higher satisfaction scores.
Teaching versus non-teaching facilities	Danielsen et al., 2007	University affiliation had a negative relationship with patient experience scores.
	Sjetne et al., 2007	Large teaching hospitals associated with lower satisfaction scores. Comment that cannot easily discriminate between the effects of size and teaching status.
	Messina et al., 2009	Significant positive relationship between patient satisfaction and inpatient volume in teaching hospitals, and non-significant negative relationship between these two variables in non-teaching hospitals.
Rural versus urban facilities	Garcia-Lacalle & Martin, 2010	Greater satisfaction with rural versus urban facilities.

Comparison	Study	Findings
	Pink et al., 2003	As above.
Older people versus younger people	Danielsen et al., 2007	Age had a highly significant positive association with experience, with older patients having better experiences.
	Garratt et al., 2005	Older patients reported higher levels of satisfaction.
People with a higher health status versus those with a lower health status	Danielsen et al., 2007	Patients with higher health status had significantly better experiences.
People with higher versus those with lower levels of education	Garcia-Lacalle & Martin, 2010	People with lower levels of education tend to give better quality assessments to hospitals than the rest of the population.

*Table 5 – Examples of studies focussing on patients' perceived quality based on hospital or patient characteristics*

Given the lack of specific literature on methodologies to obtain statistically viable responses from small facilities, other articles relating to components of the research question (as displayed in Figure 1) were reviewed. These provided information on:

- Different modes of administering surveys that might improve response rates
- Other techniques to improve response rates
- Other methods for obtaining patient experience information other than surveys that might yield greater response rates.

A summary of these follows. Note that in Figure 1, sampling methods were also identified as a means for increasing sample sizes, and thus having a larger base for potential responses. Therefore, this was also pursued further in the subsequent search undertaken, which also included sampling in primary care rather than restricting the search to hospital-based surveys. This is presented below.

### **Approaches to determining minimum sample sizes**

While there does not appear to be relevant literature on sample size for small hospitals, there is a broader literature on the underlying methodological approach to setting minimum sample sizes where the purpose is to compare performance for public reporting or as a basis for payment/funding incentives. This literature appears to be more developed with respect to surveys of patient experience of individual physicians or physician practices, in particular, primary care practices.

The underlying methodological perspective offered by some authors is that decisions on minimum sample size should reflect consideration of the inter-hospital (or inter-organisation) reliability rather than the more traditional concern with precision of resulting estimates (Lyrtatzopoulos et al., 2011). The argument is that decisions based purely on precision of the resulting estimates, that is, considerations of a pre-specified range for a 95% confidence interval, may not be appropriate when the central purpose of measurement is the comparison of entities such as hospitals. In these instances, an alternative or additional consideration is the inter-entity reliability (R) value. Reliability is usually represented as an index with values ranging from 0 (low reliability) to 1 (perfect reliability). It can be calculated as:

$$R = \frac{\text{organisation level variance}}{[\text{organization level variance} + (\text{residual variance})/n]}$$

Where n is the mean achieved sample size per organisation (Lyrtzopoulos et al., 2011). An alternative formulation is:

$$R = \frac{((ICC * n))}{[1 + (n-1) * ICC]}$$

Where ICC is the intraclass correlation. Intraclass correlation is that proportion of variance in patient-level scores associated with organisations (Lyrtzopoulos et al., 2011). A higher value of intraclass correlation indicates greater variation between organisations relative to variation within organisations. As intraclass correlation increases, so does reliability. Where intraclass correlation is very low (i.e. there is little variation between organisations' performance), the value of R will also be very low, even with large sample sizes. Alternatively, where intraclass correlation is high, relatively small samples sizes per organisation may be sufficient to reliably detect differences in performance between organisations.

Compared with precision based approaches, reliability based approaches can potentially assist in identifying situations in which even very large samples will be unable to detect differences between organisations (i.e. low reliability) and those in which the sample size required to compare organisations may be lower than recommended based on a precision based approach. In the former case, which may arise from, for example, ceiling effects for particular measures, alternative approaches and items may need to be developed. In the latter case, a reliability based approach may assist in reducing the cost of surveys by identifying lower sampling thresholds. As mentioned above, reliability has also been used as a guide to identifying situations in which measures are not useful for comparison (reliability values of less than 0.70), and situations in which measures may be used for 'high stakes' applications such as public reporting or pay for performance initiatives (reliability values of over 0.85) (Lyrtzopoulos et al., 2011).

Lyrtzopoulos et al. (2011) discuss the implication of reliability values for various items within the 2009 English General Practice Patient Survey. The paper analysed the 45 evaluation questions within the survey with a view to how these may be used to compare general practices. The survey achieved a mean of around 250 responses per practice, ranging from 23 to 256 responses per practice. Reliability values for many questions were high (over 0.9 for 26 questions). The authors modelled the number of responses required to achieve reliability scores of 0.9, 0.8 and 0.7. These values varied significantly across the types of questions. For some classes of question (e.g. related to doctor to patient communication) the minimum number of returned questionnaires to achieve reliability of .9 ranged from 131 to 171, and the minimum number of returned questionnaires to achieve reliability of .8 ranged from 58-65. Generally, lower numbers were found to be required for overall satisfaction with care (107 for reliability of 0.9 and 47 for reliability of 0.8), but significantly higher numbers were required for some other aspects of patient experience, particularly when the question was only asked of a subset of the respondents. In some instances, the number of completed questionnaires required to achieve reliable comparisons would not be feasible. For example, an average of 2,399 questionnaires would be required to reliably compare practices with respect to patients who could not get an appointment within two days.

In another paper which has four authors in common with the Lyrtzopoulos et al. (2011) paper, Roland et al. (2009), also describe the sampling approach used in the English 2009 General Practice Survey. They report that the method involved over-sampling from small practices and from those with low response rates in previous surveys. They also reported that 135 practices were excluded, which had fewer than 50 qualifying patients at the time of sampling. In their assessment of practice-level reliability, the researchers specifically examined the reliability of the two questions that related to incentive payments for the practices. They found high reliability coefficients for these questions (93.2% and 95% respectively), achieved at the overall mean number of 262 responses per practice (with a mean number of 160 and 134 responses to these two particular questions). They concluded that in fact 105 and 64 responses were needed for 90% reliability for these two questions respectively.

Lyrtzopoulos et al. (2011) point out that use of composite measures (based on combinations of individual items) may be useful in improving the reliability of organisational comparisons. This issue was separately investigated (although not in the context of patient experience surveys) by Scholle et al. (2008). The Scholle study examined the potential to develop composite measures for comparing physicians and physician practices, where most physicians have insufficient numbers of relevant events to support reliable comparisons.

As mentioned previously, in relation to the discussion of the sample threshold applied by CMS with respect to HCAHPS, consideration of intrahospital reliability values led to adoption of the threshold of 300 used by the Survey, although no further analysis was identified subsequent to the 2003 pilot study. A paper by Elliott et al. (2010) addresses a slightly different topic. The authors aimed to assess the impact of adjusting for patient mix on reliability scores, using HCAHPS data from 2006-2007. In doing so the authors calculated reliability values based on 300 and 100 completed items. The results are shown in Table 6.

Outcome	Item completion rate (%)	Unadjusted reliability		Patient-mix adjusted reliability		Number of survey completes	
		Number of item completes	Number of item completes	Number of item completes	Number of item completes	Number of survey completes	Number of survey completes
		300	100	300	100	300	100
Overall rating	97.7	.95	.87	.90	.75	.95	.87
Recommendation	98.0	.94	.84	.91	.76	.94	.83
Nurse communication	99.9	.92	.79	.87	.69	.92	.79
Doctor communication	99.5	.87	.70	.81	.59	.87	.70
Responsiveness of hospital staff	89.3 <sup>a</sup>	.94	.83	.91	.78	.93	.82
Pain management	72.3 <sup>b</sup>	.86	.68	.81	.59	.82	.61
Communication about new medicines	60.8 <sup>c</sup>	.91	.77	.84	.64	.86	.67
Cleanliness and quietness of hospital environment	99.5	.94	.83	.94	.83	.94	.83
Discharge information	89.6	.89	.74	.87	.69	.88	.72

*Table 6 – Hospital-level reliability for each of nine outcomes, unadjusted and patient mix adjusted*

**Notes:**

<sup>a</sup> Item asked of patients who reported summoning a hospital staff member

<sup>b</sup> Item asked of patients who were prescribed medication for pain management

<sup>c</sup> Item administered to patients who received a prescription for a new medication

Source: Elliot et al., 2010

The analysis suggests that reliability values are generally above .85 where 300 completed items are reported. Where 100 completed items are reported, reliability is still high (above .7, except for two items). This suggests that thresholds below 300 might still provide a reliable basis for comparing hospital performance. The authors conclude that the recommended samples size (300) means that “HCAHPS results [can] ... be confidently employed not only for consumer decision making, but also for pay-for-performance initiatives, payer oversight, and quality improvement efforts. Even sample sizes of 100 completes may be adequate for some purposes, although some caution is warranted” (Elliott et al., 2010, p. 68).

Table 6 also shows the impact of taking into account patient mix in calculating reliability. Based on other analysis presented in the paper, the authors conclude that ‘hospital ranks’ (the relative scores of hospitals for patients of a given type) vary substantially by patient health status and race/ethnicity/language, and moderately by patient education and age (Elliott et al., 2010, p. 56).

The Lyratzopoulos et al. (2011) paper identifies four scenarios representing combinations of different levels of precision, reliability and intraclass correlation coefficient values, and offers comments on the implications for survey interpretation or design of each scenario. This is reproduced in Table 7.

Hypo- thetical scenario	Precision level	Intraclass correlation coefficient	Reliability	Comments	Recommended options
A	Poor*	Any	Low	Common pattern for small or inadequately powered surveys	Consider increasing the survey’s sample size to improve precision and reliability  If survey already completed, be cautious about its use
B	Good*	Any, but probably not especially high	Low	Occurs on surveys that only consider precision – does not adequately distinguish between health care organisations	Not suitable to be used for comparative assessment of organisations  Could in principle be used for ‘internal’ (i.e. non-comparative) audit purposes  Should not form part of public reporting schemes

Hypo- thetical scenario	Precision level	Intraclass correlation coefficient	Reliability	Comments	Recommended options
C	Good (probably very good)*	Low (e.g. <0.01)	High	An expensive though precise and reliable measurement of an indicator with limited potential for overall improvement – small differences are being measured very precisely	Consider either: <ul style="list-style-type: none"> <li>• Removing the question from the survey instrument</li> <li>• Redesigning the question, for example, if cognitive testing indicates problems</li> </ul>
D	Good*	High (e.g. >0.10)	High	Good potential for use as a quality improvement tool- substantial differences among organisations and high reliability of measurement	Good potential for use in 'high stake' assessment, such as public reporting and pay- for-performance schemes

*Table 7 – How consideration of reliability and intraclass correlation coefficient can help in survey design, choice of performance measure, or performance reporting decisions*

\* These terms are used in place of normative precision levels for performance indicators, due to challenges in making a judgement about these.

Source: Lyrtzopoulos et al., 2011 (p. 732)

Two other approaches to addressing problems of small sample sizes for sub population, without altering sample sizes, are mentioned by Elliott et al. (2010): empirical Bayes shrinkage and pooling of data over longer time periods.

### Mode of administering surveys

Patient experience surveys are typically administered via: mail; telephone; mail plus telephone (This may involve mail advising the person that they will receive a telephone call and then the actual survey, or an attempt at a telephone survey after there has not been a response to the mail survey); or interactive voice response (IVR). More recently, surveys have been administered online.

The literature comparing response rates relating to the different modes of survey administration are mostly more than ten years old. This older literature consistently found higher response rates when surveys were administered via telephone compared with mail surveys (e.g. Jackson Fowler et al., 2002; Burroughs, Waterman, Cira, Desikan, & Claiborne Dunagan, 2001; Harris, Weinberger, & Tierney, 1997). These studies also found that following up patients sent a mail survey with a telephone survey can increase response rates. For example, Jackson Fowler et al. (2002) increased the response rate to the CAHPS survey from an average of 46% for mail surveys alone to an average of 66% when patients were followed up by telephone.

A randomised controlled trial of telephone versus mail administration also of the CAHPS patient experience questionnaire (Hepner, Brown, & Hays, 2005) showed a difference in the response rates of mail surveys alone versus telephone administered surveys (42% and 53% respectively). And similar to the Jackson Fowler study, mail surveys followed by a telephone survey increased the response rate (in this case to 55%).

However, a more recent study by Elliott et al. (2009) found that the response rate for mail respondents was higher than for telephone respondents (38% and 27% respectively). Yet consistent with the studies above, the mixed mode (mail followed by telephone survey) had the highest response rate (42%).

The higher response rate achieved in the Elliott et al. (2009) study using mail administered surveys may indicate that there has been a change in the responsiveness of people to the different modes over time. In this context it would be interesting to compare responsiveness using some of the newer technologies (i.e. online surveys accessed using different devices and applications). However, there are no such experimental studies relating to patient experience surveys. Incidentally, another observation of the above studies is the declining response rates over time.

Therefore, the only conclusion that can be drawn on the literature on mode of survey administration is that it is the mixed mode of survey administration that has shown consistently higher response rates over time rather than any single approach. The issue with a mixed mode however is that different modes potentially result in systematic differences in how people respond to evaluative questions. For example, in the Elliott et al. (2009) study, those surveyed by telephone tended to be more positive about their experiences than those surveyed by mail. This has also been found in other similar studies (e.g. de Vries, Elliott, Hepner, Keller, & Hays, 2005). To get around this, Elliott et al. (2009) note that some systems adjust patient experience results to account for survey administration mode (and other) biases. They assert that estimates for such adjustments can only be validly derived from experimental studies. Therefore, allowing for mixed modes of administration and/or specifically pursuing a mixed mode means an investment in studies to derive factors to adjust for potential differences in evaluation brought about by the different modes.

**Other methods for improving response rates to patient experience surveys**

A systematic review of strategies to increase response rates to postal and electronic questionnaires identified specific effective strategies for both modes (Edwards et al., 2009). These are reproduced in Table 8.

Strategy type	Postal questionnaires	Telephone questionnaires
Strategies increasing the odds of response	<p>The odds of response were at least doubled with the following:</p> <ul style="list-style-type: none"> <li>• Monetary incentives</li> <li>• Recorded delivery</li> <li>• A teaser on the envelope (e.g. a comment suggesting to participants that they may benefit from opening it)</li> <li>• A more interesting questionnaire topic.</li> </ul> <p>A high response rate was also found with the following:</p> <ul style="list-style-type: none"> <li>• Pre-notification</li> <li>• Follow-up contact</li> <li>• Unconditional incentives</li> <li>• Shorter questionnaires</li> <li>• Providing a second copy of the questionnaire at follow-up</li> <li>• Mentioning an obligation to respond</li> <li>• University sponsorship.</li> </ul> <p>The odds of response were also increased with:</p> <ul style="list-style-type: none"> <li>• Non-monetary incentives</li> <li>• Personalised questionnaires</li> <li>• Hand-written addresses</li> <li>• Stamped return envelopes as opposed to franked return envelopes</li> <li>• An assurance of confidentiality</li> <li>• First class outward mailing.</li> </ul>	<p>The odds of response were increased by more than half using:</p> <ul style="list-style-type: none"> <li>• Non-monetary incentives</li> <li>• Shorter e-questionnaires</li> <li>• A statement that others had responded</li> <li>• A more interesting topic.</li> </ul> <p>The odds of response increased by a third using:</p> <ul style="list-style-type: none"> <li>• A lottery with immediate notification of results</li> <li>• An offer of survey results</li> <li>• A white background.</li> </ul> <p>The odds of response were also increased with:</p> <ul style="list-style-type: none"> <li>• Personalised e-questionnaires</li> <li>• Using a simple header</li> <li>• Using textual representation of response categories</li> <li>• Giving a deadline.</li> </ul> <p>The odds of response tripled when:</p> <ul style="list-style-type: none"> <li>• A picture was included in an e-mail.</li> </ul>
Factors reducing the odds of response	<p>The odds of response were reduced when the questionnaire included questions of a sensitive nature.</p>	<p>The odds of response were reduced when:</p> <ul style="list-style-type: none"> <li>• "Survey" was mentioned in the e-mail subject line</li> <li>• When the e-mail included a male signature.</li> </ul>

*Table 8 – Strategies to increase response rates to postal and electronic questionnaires*

Source: Edwards et al., 2009

There is a body of literature on the use of paper versus electronic devices for improving compliance with questionnaires generally. For example, a controlled clinical trial by Stone, Shiffman, Schwartz, Broderick, & Hufford (2003) found that participants with chronic pain enrolled in a study for research were not compliant

with paper diaries, but were compliant with an electronic diary with enhanced compliance features. Therefore, electronic means of capturing patient experience closer to the time of service delivery could be one way of improving response as well as potentially obtaining a more accurate reflection of patients' experiences.

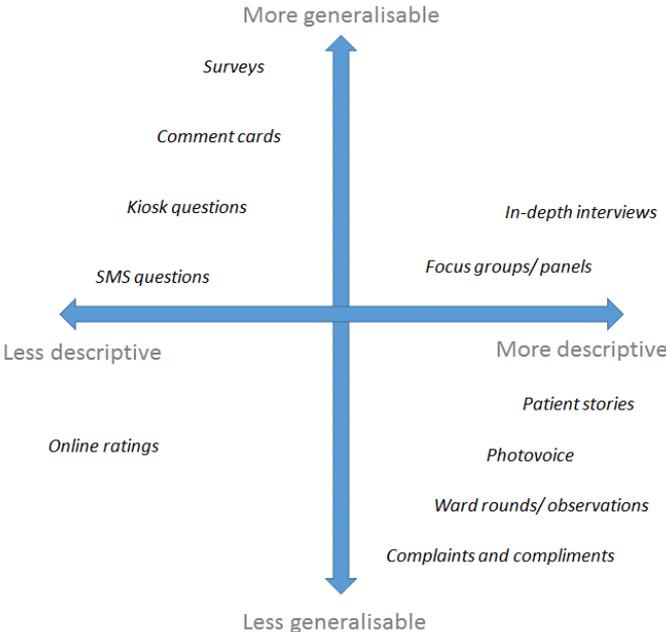
In a randomised control trial of telephone versus mail administration of patient experience surveys, Harris et al. (1997) found that the response rates could be significantly improved by informing patients about the post-discharge survey while they were still in hospital (including an explanation of the survey and answering any of their questions or concerns) as well as obtaining their current telephone numbers and addresses. This strategy doubled the response rate in this study for patients for whom this strategy was followed compared with those that were not contacted whilst in hospital.

One study also reported on a process to adapt the CAHPS patient experience survey developed by AHRQ to be suitable for an American Indian population (Weidmer-Ocampo et al., 2009). The particular population was mostly low income and mostly rural, and administered via mail. Nevertheless, the response rates were reported to be 'respectable', and the authors attributed this to the combined effect of a small incentive (10 USD) for completion, obtaining good contact information for patients from the Choctaw Nation Health Service (CHNS), sending an advanced letter about the survey signed by the Chief of CNHS, making the survey easy to complete and making it culturally appropriate (i.e. 'resonating' with respondents).

**Surveys versus other approaches to collecting patient experience**

Surveys are the most commonly used instrument for collecting patient experience information due to the ability to circulate them widely and administer them at low cost (Hyrkäs, Paunonen, & Laippala, 2000). However, a range of other approaches are available. A recent literature review (de Silva, 2013) details these approaches and comments on their potential advantages and limitations. The classification of their approaches according to their level of descriptiveness and generalisability is shown in Figure 2 below. They are described in Table 9, which also includes examples of their use.

*Figure 2 – Classification of methods used to measure patient experience of health services*



Source: de Silva, 2013

Approach	Description	Examples of use
Comment cards	Patients are provided with a card with simple instructions to give feedback about their care on a particular occasion or just before discharge (e.g. what they liked most about their care and what they were unhappy about, or what was most important to them).	Sprinks, 2011 Noble, 2010 Jangland, Carlsson, Lundgren, & Gunningberg, 2012
Kiosk questions	Capture and display patients' feedback about their experiences on a continuous basis. Often used in emergency departments and wards.	DiRocco & Day, 2011 Sprinks, 2011
SMS questions	Use of devices such as hand-held bedside equipment, tablets, text messages, mobile apps or other novel approaches to collate short patient feedback.	Gentles, Lokker, & McKibbon, 2010
Online ratings	Obtaining ratings from individuals on a range of dimensions based on their experiences with a specific health service.	NHS England, 2014 Njio, ter Heege, & Prah-Andersen, 2008 Ashley, Jones, Thomas, et al., 2011 Ashley, Jones, Forman, et al., 2011
In-depth interviews	Detailed discussions with probing and qualitative feedback (i.e. rather than asking structured survey questions verbally). Can be done face to face or over the telephone.	Scott, Dawson, & Jones, 2012 Burgess, Cowie, & Gulliford, 2012 Gustafsson & Bootle, 2013 Feinberg, Law, Singh, & Wright, 2013
Focus groups/panels	Bringing together a group of people to share their experiences of care to identify key themes about what is going well with a service and what is not.	Young, Wolff, Lucey, & Maurana, 2004 Grogan, Coughlan, O' Mahony, & McKee, 2012 Dyas et al., 2010 Rathert, Brandt, & Williams, 2012 Marshal, Oades, & Growe, 2010 de Paiva & Gomes, 2007 Sprinks, 2011

Approach	Description	Examples of use
Patient stories	Collection of stories from patients about their experiences with a health service. May be written or video recorded.  May also be collected online by inviting people to post a comment on a website and/or through social media (e.g. Twitter, Facebook).	NHS England, 2014  Piper et al., 2012  Conway, 2008
Photovoice	Use of photographs and captions by people to share their experiences with care.	Kramer, Schwartz, Cheadle, & Rauzon, 2013  Clements, 2012  Haque & Eng, 2011  Duffy, 2011
Ward rounds/ observations	Observations of patients, family members and medical staff in a large hospital to assess patient perceptions of the quality of care.	Tasso, Behar-Horenstein, Aumiller, Gamble, et al., 2002  Henderson et al., 2009
Complaints and compliments	Analysis of complaints or compliments that patients and families submit to health services as a source of feedback about patients' experiences.	Hsieh, 2012  Montini, Noble, & Stelfox, 2008  Jones et al., 2006

*Table 9 – Description of alternative approaches to obtaining patient experience information*

The alternative approaches may involve both other means of collecting patient experience information (i.e. other than a survey) and use of different technologies to capture the information.

For example, an English Trust who was ranked in the lowest 20% of Trusts for the majority of the indicators measured in the NHS's patient experience survey introduced a range of new approaches to gathering patient experience information (Sprinks, 2011). The approaches were mainly aimed at obtaining information that is relevant to staff being more responsive to patients (i.e. real-time information on how staff interact with patients). The approaches used included:

- A two-question survey asking patients whether they would recommend the service to others and the reasons for their response. The survey is administered via handheld electronic patient experience trackers (PETs), and thus provides real-time feedback to nurses.
- 'Just a minute' (JAM) cards, asking patients to take 60 seconds to write down what went well with their care and/or what they were unhappy about.
- 'In your shoes' focus groups, involving staff listening to patients about their experiences and suggestions for how the Trust might improve their services.

Some organisations have combined traditional patient experience surveys with more modern approaches for feedback, such as narratives that can be posted online. An example is the NHS, which provides a public forum for comments, which are published alongside the results of patient experience surveys and other quality measures, on its NHS Choices website (NHS England, 2014). A review of these comments by Lagu, Goff, Hannon, Shatz, and Lindenauer (2013) observes:

*NHS Choices represents the first government-run initiative that enables any patient to provide narrative feedback about hospital care. **Reviews appear to have similar domains to those covered in existing satisfaction surveys** but also include detailed feedback that would be unlikely to be revealed by such surveys. Online narrative reviews can therefore provide useful and complementary information to consumers (patients) and hospitals, particularly when combined with systematically collected patient experience data.” (p. 7)*

# 11 Conclusions from Evidence Check

This Evidence Check began with four questions. These questions and a summary of the findings are outlined below.

The first question was 'How are survey methods currently used to assess patient experience in small health facilities?'

The closest related information drawn from the Evidence Check is that most of the international systems and some of the jurisdictional-based approaches in Australia use a census approach to sampling for facilities where the sample size for a period is not expected to be sufficiently large enough to draw statistically viable results.

Also, studies analysing patient experience data from general practice and/or individual physicians identify three strategies for reducing the sample size needed to get reliable estimates for comparison between practices/physicians:

- Ensuring the reliability of individual questions. Questions which are not reliable need to be responded to by a larger number of people for statistical viability.
- Using composite measures to increase the reliability of some measures
- Pooling data over a longer period of time. (This was mentioned in relation to data from sub-populations where responses are too low for reporting in each round, but could also be used for whole facilities and/or for specific questions where responses are not sufficiently large for reliable comparisons.)

The second question was 'How are survey methods most effectively used for assessing patient experience in small health facilities settings?'

Literature on the superiority of one administration mode over another is mixed, potentially reflecting differences over time. Also, there are no experimental studies of online administration versus the more traditional approaches. While the literature has consistently shown mixed methods of survey administration to yield the greatest response rates, responses using different approaches are potentially biased and would require adjustment of results to make them comparable across modes. However, deriving factors for such an adjustment is a resource intensive undertaking.

Other methods that may assist in increasing response rates specifically for patient experience surveys are: making the surveys available in multiple languages and/or providing access to an interpreter service for completion of the survey, making contact with patients about the survey prior to their discharge from hospital (including ensuring that their correct contact information is on the database), and publicising the survey to both patients and staff. Some of the strategies for increasing response rates to questionnaires generally (i.e. not specifically patient experience questionnaires) are pre-notification, follow-up contact, shorter questionnaires and providing a second copy of the questionnaire at follow-up.

The third question was 'Which other measurement methods are currently used in assessing patient experience in small health facilities settings?'

There was no specific literature found on other measurement methods for assessing patient experience specifically in small health facilities. However, there is a body of literature on a range of other available approaches for eliciting patient experience information which may be relevant to small facilities.

The final question was 'What are the domains of patient experience that have been measured in small health facilities settings?'

None of the patient experience tools/systems used by the major health systems around the world or Australia mentioned measuring a different set of domains of patient experience for patients seen in smaller facilities. Where patient experience surveys are standardised across a state/territory or a country, the same survey applies to all facilities within scope and no restrictions to scope on the basis of size were mentioned.

# 12 Implications for the BHI

The information that could be gleaned from the literature for this Evidence Check is limited. However, it does provide some guidance on strategies to increase the sample size and improve response rates of survey based approaches for eliciting information from patients about their experience with hospitals. These are:

Use of census rather than sampling

Strategies to improve response rates, namely:

- Making surveys available in multiple languages (although it is noted the BHI already offers an interpreter service to assist patients who may have difficulties in responding to the survey in English)
- Informing patients about the survey prior to their leaving hospital
- Publicising the survey amongst patients and staff.

It is relevant to note that of the approaches used by different systems mentioned in the literature, the minimum number of completed responses required to ensure statistical viability of the results and/or meaningful participation in public reporting, was 300 completed surveys a year (this is based on the reliability of the HCAHPS tools). To obtain this, a minimum of 600 patients need to be drawn (from which some will be ineligible to participate, and some will not respond to the survey). For NSW, from the population of facilities that are considered 'small' according to the BHI definition (i.e. D group or smaller from the acute group and all non-acute and other ungrouped facilities), for approximately 68 of the 151 facilities (45%, based on a minimum of 750 discharges per year to account for the fact that some discharges are of the same person and each person should not be surveyed more than once during a year), this sample size is not possible, even when all discharges within a year are included. Information about the nature and size of these smaller facilities is shown in Table 10.

Therefore, other options need to be investigated. One is to analyse the reliability of individual questions in the survey, and remove those that do not have high reliability, or to turn them into composite measures, to increase their reliability. This would reduce the numbers of completed responses required for reliable comparisons.

Another is to pool results of surveys for individual facilities over a two year period. Note however, that this would still not be an option for approximately 67 out of the 151 NSW facilities (44%) defined as small, due to the number of discharges still being below the threshold to obtain a viable number of completed responses.

Yet another is to investigate alternatives to surveys. A number of approaches were mentioned in the literature, which have been outlined in this report. Also, note Victoria's intended use of hand-held devices for small facilities as a supplement to surveys. The approach is intended to enhance patient participation in providing feedback and to provide additional feedback to small facilities.

The approaches selected would need to be ones that are generalisable. A focused review of available options would need to be undertaken as well as an assessment of their suitability for the NSW environment (i.e. also considering costs).

Other options that were not mentioned in the literature, but drawn from the expert opinion of the researchers in handling small sample sizes (mainly in relation to evaluations), include:

- Drawing samples from all small facilities within a planning region within a LHD (which may include three or four facilities), or if this is still not large enough, then drawing the sample from all small hospitals within a LHD.
- Administering a more generic patient experience survey that captures experiences common to admitted and non-admitted patients. This would require further research on tools of this nature. Also, for some of the facilities in the peer groups considered small, this may not add any additional people to survey (e.g. F2 Nursing homes).

Based on this analysis, suggestions for how the BHI might approach gathering patient experience in small facilities are provided in Table 10. These are in addition to reviewing, and potentially improving where possible, the reliability of the questions in the patient experience tool used in NSW.

Peer group*	No. of facilities**	Average number of separations per year**	No. (%) of facilities with less than 750 separations per year**	Suggested approach to gathering patient experience information
D1a Community hospitals with surgery	14	1,801	0 (0%)	Continued use of survey based on census of separations, and employ strategies to improve response rates.
D1b Community hospitals without surgery	35	662	24 (69%)	Continued use of survey based on census of separations with strategies to improve response rates, plus alternative methods as a supplement to the survey.  Could consider pooling results for two years for these facilities, which would reduce the number of facilities with less than 750 separations from 24 to 10 (29%).
F1 Psychiatric	8	743	6 (75%)	Employ alternative approaches to measuring patient experience rather than surveys. Investigate approaches relevant to patients with mental health and/or in long term care.
F2 Nursing home	7	43	7 (100%)	Exclude from the NSW Patient Survey Program. Residents in these facilities are already surveyed by the Commonwealth, the primary funder of these services.

Peer group*	No. of facilities**	Average number of separations per year**	No. (%) of facilities with less than 750 separations per year**	Suggested approach to gathering patient experience information
F3 Multipurpose service (includes associated residential aged care facilities)	51	399	46 (90%)	<p>Employ alternative approaches to measuring patient experience rather than surveys.</p> <p>For the residential aged care component, could either exclude as residents re already surveyed by the Commonwealth Government, the primary funder of these services. Alternatively, may investigate approaches relevant to residential aged care.</p>
F4 Sub-acute	14	1,530	6 (43%)	Employ alternative approaches to measuring patient experience rather than surveys. In particular, explore approaches relevant to sub-acute care.
F5 Palliative care	1	377	1 (100%)	Employ alternative approaches to measuring patient experience rather than surveys. In particular, explore approaches relevant to palliative care.
F6 Rehabilitation	3	467	3 (100%)	Employ alternative approaches to measuring patient experience rather than surveys. In particular, explore approaches relevant to rehabilitation (or sub-acute care more generally).
F7 Mothercraft	3	2,320	0 (0%)	<p>Continued use of a survey, but investigate the use of a more appropriate survey for this setting.</p> <p>Survey should be based on census of separations and employ strategies to maximise response rates.</p>
F8 Other ungrouped	14	692	13 (93%)	Mixed approaches, as relevant to the type of facility (many of the facilities in this group relate to patients in correctional facilities, including detoxification).

Peer group*	No. of facilities**	Average number of separations per year**	No. (%) of facilities with less than 750 separations per year**	Suggested approach to gathering patient experience information
F9 Dialysis services	1	1,397	1*** (100%)	Employ alternative approaches to measuring patient experience rather than surveys. Investigate approaches that are particularly relevant to patients undergoing dialysis.
Total	151	770	107 (71%)	

*Table 10 – Characteristics of small facilities by NSW peer groups and suggested approaches for gathering patient experience information*

\* Based on 2013 NSW Hospital peer groups

\*\* Based on 2011-12 NSW admitted patient data

\*\*\* Based on count of persons, assuming 3 dialysis sessions per person per week (translating to 466 individuals)

A final point to raise is the discussion above concerning sampling and setting of thresholds for sample sizes (such as the aim of achieving 300 completed surveys), is firmly based in the ‘frequentist’ statistical tradition. This is the tradition in which almost all patient experience surveys have been designed and implemented. However, adopting a Bayesian approach could be a fruitful approach to addressing the specific question for this review. The potential advantage of the Bayesian approach is that it may provide a rationale for developing more precise estimates of relevant values with smaller sample sizes.

No direct literature was identified in this evidence review that took a Bayesian approach specifically in relation to gathering patient experience information, although this approach was mentioned by Elliott et al. (2010), in the context of reporting on sub populations within hospitals. Also we were unable to identify jurisdictional or international surveys that have taken a Bayesian framework within this context. This could be an avenue that the BHI could pursue through further expert statistical advice.

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# 14 Attachments

The table below lists individuals/organisations contacted to obtain information towards this review, and the outcome of these contacts.

Organisation	Person contacted	Result
Australia – Australian Commission on Safety and Quality in Health Care	Neville Board, Director, Information Strategy and Safety in eHealth Sheila Matete-Owiti, Senior Project Officer, Indicator Development	Provided information towards the review.
National Health Performance Authority	Jason Boyd, Director, Hospital Performance Measurement and Improvement	Provided information towards the review.
Australia – Victorian Department of Health	Andre Clarke, Senior Project Officer, Consumer Partnerships and Quality Standards	Provided information towards the review.
Australia - South Australia Health	Michelle McKinnon, Director, Safety and Quality, Public Health and Clinical Co-ordination	No response.
Australia - Western Australian Department of Health	Peter Somerford, Principal Epidemiologist, Epidemiology Branch, Public Health Division	Provided information towards the review.
Organisation for Economic Co-operation and Development	<i>Healthcare Quality Indicators Project</i> general contact	No response.
Canadian Institute for Health Information	Tracy Fernandez, Senior Coordinator, Performance Improvement and Capacity Building	Provided information towards the review.
University of Pennsylvania	Dr Rachel Werner, Associate Professor of Medicine in the Division of General Internal Medicine	No response.
Norway	Andrew Garratt, Senior Researcher, Norwegian Knowledge Centre for the Health Services	No response.
Agency for Healthcare Research and Quality	Dr Christine Crofton, CAHPS Project Officer	No response.

*Table 11 – List of individuals/organisations contacted for information towards the review and outcome*