

The BC Patient Centred Measurement Steering Committee

OSA Long-term Residential Care Facility Survey 2016/17

Healthideas Toolkit for Data Users

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The BC Patient-Centred Measurement Steering Committee thanks those British Columbians who participated in this survey, providing valuable information about their lived experiences to support clinicians and policy makers in their efforts to provide the highest quality of care possible for all residents cared for in BC long term care homes.

About the Toolkit: OSA Long-term Residential Care Survey 2016/17

This document contains information to provide users of the 2016/17 OSA Long-term Residential Care patient-reported experience and outcome survey results with sufficient context to make informed use of the data provided through *Healthideas*. The survey was funded and implemented at the request of British Columbia's Office of the Seniors Advocate. This document does not replace any technical documents; rather, it serves as a complementary source of information.

This document will be revised as necessary should additional information and materials become available.

For questions regarding the survey, the use, reporting, and interpretation of the data, or any other questions, please contact:



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About the BC Patient Centred Measurement Steering Committee

Since 2003, the BC Patient-Centred Measurement Steering Committee (the SC), which includes representation from the BC Ministry of Health, all seven of its Health Authorities, and their affiliate organizations, have implemented a program to measure the self-reported experience, satisfaction and health-related quality of life of the people who use a range of healthcare services in BC.

These surveys are provincially coordinated and conducted across all locations of service, i.e., province-wide. The survey instruments and the results are based on a scientifically rigorous process for learning from patients and improving the quality of the healthcare and services provided in BC. It also ensures that we avoid the use of “home grown” tools, which do not allow for comparison between facilities, health regions and provinces, and often have not been tested to ensure that the questions measure what is important to patients and that the questions are interpreted by patients as intended. Clinicians, leaders, policy makers, and most importantly patients are involved at every step of the planning of these surveys, including the development and testing of questions, the selection of survey instruments, and the validation of results.

“This initiative is about giving people who use British Columbia’s (BC’s) health services the opportunity to provide feedback about their experience and satisfaction with the care and services they receive, as well as providing information about their outcomes and health-related quality of life.”



The results of surveys that ask users of the health care system in BC for feedback are intended to be used by Health Authority clinicians and leaders to improve the quality of the experience and the clinical outcomes of the patients, residents, and families at the point of care and to promote continuous organizational improvement. Additionally, Ministry of Health and Health Authority executives and policy makers are interested in survey results as an accountability measure to understand the performance of the health care system at individual and cross regional and provincial levels.

Province-wide surveys have been conducted in BC in the:

- Emergency Department sector (2003, 2007, 2009 to 2015, 2018)
- Long-term Residential care sector (2003/04 and 2016/17)
- Acute Inpatient sector (maternity, pediatrics, surgery (2005, 2008, all this plus rehabilitation in 2011/12, and again in 2016/17)
- Short stay Mental Health (inpatient psychiatric units) and Substance Use (detox, support recovery, and withdrawal management) sector (2010/11)
- Outpatient Cancer Care sector (2005/06, 2012/13); Cancer Transition to Survivorship (2016)

About *Healthideas*

In 2011, the Health Information Privacy and Security Council (HIPSC) agreed to the practice of returning raw survey data, including patient identifiers, back to each health authority or to the affiliate organization where the patient received care for purposes of secondary data analysis and to inform quality improvement. What was missing was the ability to link the survey data to other clinical and administrative data sets and to analyze the data beyond a single health authority (i.e., at a provincial level or across health authorities).

In July 2014, the HIPSC agreed that the BC Ministry of Health's *Healthideas* data warehouse could be used to centrally store patient self-reported survey data. *Healthideas* is a safe and secure source of information that was created and is managed by the BC Ministry of Health. *Healthideas* was designed to support decision making and contains information about hospital and physician services, population data, and other reference data.

Healthideas now serves as the repository of all survey data collected from BC patients, clients, residents, and families. It will host all the records of patients with an encounter in any of the sectors surveyed, flagging those who were sampled and invited to participate in a survey, as well as all those who completed a survey. Each approved user will be provided with a specific level of access, based on need and authority.

Purpose of the 2016/17 OSA Long-term Residential Care Survey

This survey asked residents and/or their most frequent visitor about their health-related quality of life and their experiences with the quality of the care and services received as a resident in one of 292 long-term care facilities in BC. The survey was piloted in May and June 2016 and was in field from September 2016 to September 2017.

As with all provincially coordinated surveys conducted by the BC Office of Patient-Centred Measurement on behalf of the SC the Ministry of Health and health authorities are committed to use the survey results to:

- Enhance the performance of the long-term residential care sector in the province;
- Enhance public accountability;
- Support quality improvement initiatives; and
- Contribute information to support research.

Understanding the patient experience and self-reported health related quality of life is vital in ensuring BC's health care system is meeting the needs of patients – allowing them to become partners in their own health care and providing a means to evaluate whether care is truly patient/resident centred.

The goal is that the results that reflect the “voices” of BC's patients will be used to improve the experience and outcomes of care for all patients in BC.

The 2016/17 OSA Long-term Residential Care Sector survey results have informed quality improvement initiatives, recognized the work of care professionals, and permitted leaders and direct care staff to hear from a residents and their families/most frequent visitors in order to understand priorities from the resident and family perspectives. The OSA plans to repeat the survey in 2020/21* to permit trending of results over time.



* Note: COVID-19 has impacted timelines. A family survey to explore the impact of visitor restrictions during the pandemic is in planning.

Five health authorities in BC provide residential care services to primarily frail older adults with or without cognitive impairment through both health authority owned and operated locations and contracted care facilities that operate either as not for profit or for profit. All locations in British Columbia with publicly funded beds were included in the OSA's survey. The results of the 2016/17 OSA Long-term Residential Care Sector survey were disseminated to leaders working in the 292 long-term care facilities within 30 days of the completion of surveying

on each site (these reports were distributed as “preliminary results” and provided no comparisons; the reports were intended to support local, care home level QI); the provincial and health authority results were publicly released by the Office of the Seniors Advocate website (see link below) and included a link to each care home’s results via the OSA’s Quick Facts Directory.

<https://www.seniorsadvocatebc.ca/osa-reports/residential-care-survey/>



Dimensions or Domains of Resident Experience

From a psychometric point of view, the terms dimensions and domains of resident and MFV experience are interchangeable terms used to describe a group of items that are being evaluated in a survey. A summary score is often calculated to quantify the dimension, with the score being a composite score of the questions that make up of that dimension. Dimensions and domains of resident experience may be conceptually derived (individual items make intuitive sense to be grouped) or empirically derived (individual items have been shown to fit together statistically).

Factor

In the field of measurement and psychometrics, a factor is an indirect representation of the underlying dimension inferred from the question (item) responses. Mathematically, a factor is a weighted linear combination of items (e.g., survey questions) thought to summarize the variations observed in the item responses. Also known as 'latent variable' in statistics, a factor is considered to be unobservable but is inferred from items that are considered observable (i.e., directly measured).

Freedom of Information and Protection of Privacy Act

The BC Freedom of Information and Protection of Privacy Act (FOIPPA) protects the personal privacy of BC citizens by prohibiting the unauthorized collection, use, or disclosure of personal information by public bodies.

Item and Question

The words 'item' and 'question' are often use interchangeably; however, the term 'item' is more broadly defined as not all items are phrased as questions. In the field of measurement or psychometrics, survey questions are referred to as items. Items can refer to things such as multiple choices, statements, ratings assigned by an observer, and performance assessment. An item bank is a collection or repository of items.

Key Driver

A key driver is a survey question that reflects aspects of care and service shown to statistically have the greatest influence on the global rating indicator questions. Ratings of overall experience and likelihood to recommend are examples of global ratings.

Margin of Error

The margin of error is an indicator of survey accuracy that measures the imprecision inherent in survey data. Margin of error is inversely related to the sample size used to draw inferences about the larger population. A margin of error of $\pm 5\%$ is considered good while $\pm 8\%$ is acceptable.

Most Frequent Visitor

The person, as identified by the facility staff, who visited the resident most frequently; this was usually a family member, but not always.

Norm-Referenced Score

A score is norm-referenced if it is interpreted with regard to the performance of a peer group, a reference population, or benchmark. Percentile rank is an example of a norm-referenced score.

Percent Positive Score

The percent positive score is the percentage of respondents who selected a positive response category to a survey question (e.g., the 'Always' or 'Most of the Time' response option from the choices Never, Rarely, Sometimes, Most of the Time, Always).

Psychometrics

Psychometrics is a scientific field of study concerns with the theory, practice, and techniques of psychological and behavioural measurement. This includes improving the measurement of knowledge, abilities, attitudes, opinions, and personality traits via the development of assessment tools, statistical methods, and mathematical techniques.

Patient-Reported Experience Measures

Patient-reported experience measures (PREMs) are measurement instruments that patients complete to self-report their global ratings of overall satisfaction with the care and services received and their experiences with the processes of their care.

Patients-Reported Outcomes Measures

Patient-reported outcome measures (PROMs) are measurement instruments that patients complete to self-report information on aspects of their health status that are relevant to their quality of life, including symptoms, functional, physical, mental and social health.

Privacy Impact Assessment

A Privacy Impact Assessment (PIA) is a process used to evaluate potential impacts of a study or program on participants' privacy rights and to ensure compliance with privacy protection rules and responsibilities. Completing a PIA is a legislative requirement when developing or changing a system, project, program, or activity. A PIA is conducted for all BC PCM Working Group initiatives, projects, and surveys; each PIA is reviewed by the Health Information Privacy and Security Operations Committee (HIPSOC), which is a sub-committee of the Information Privacy and Security Standing Committee at the Ministry of Health, and the Office of the Information and Privacy Commissioner.

Questionnaire

A questionnaire is a form of data collection, asking an individual to respond to a set of printed or written questions with a choice of answers to gather information from respondents. Questionnaires can be administered in-person, online, by phone or mail.

Reliability

Reliability is a measure of the repeatability or consistency of results obtained from a standardized survey instrument. A survey instrument itself is neither reliable nor unreliable; it is the responses that can be consistent or repeatable. In addition, just because a response to a scale is reliable does not mean that it is valid, that is, it measures what it is supposed to measure (see [Validity](#)).

Response Rate

Response rate is the number of people who answered ("completed") the survey divided by the number of people in the sample. It is usually expressed as a percentage and is one of the most commonly used indicators to gauge the quality and accuracy of survey data. There are different response rate calculation standards, with varying definitions of "answered survey" or "complete" and who to include in the sample.

Scale and Sub-Scale

In the field of measurement or psychometrics, a scale is a collection of items (e.g., survey questions) designed to measure one dimension. Similarly, a sub-scale is a subset of items from that same item collection used to measure a particular aspect or component of that dimension (sub-dimension). A standardized survey instrument is often designed with items that form a scale.

Statistical Significance

A statistically significant result (that represents a difference between two groups of scores) is a result that is unlikely to have occurred due to chance if there really was no difference between the two groups of scores. In other words, a statistically significant result occurs when the difference between two groups of scores is large enough that we can say that the probability of this difference occurring is very small if there really is no difference in scores between groups. A statistically significant result may or may not be relevant (i.e., “practically significant”) in a clinical context.

Survey

A survey is a process for gathering information that could involve a wide variety of data collection methods, including a questionnaire. It could also involve observing or measuring things that go beyond questions, including physical measurements or judgments made by an observer. A survey typically includes questions from one or more questionnaires or instruments that address specific objectives and may also be used to collect demographic information.

Survey Instrument

A survey instrument is a tool that follows scientific protocols for obtaining information from respondents. For survey research, the survey instrument often involves a questionnaire that provides a script for presenting a standard set of questions and response choices.

Survey Vendor

To carry out the work of the BC Office of Patient Centred Measurement, contracts with external research companies are negotiated on behalf of the health authorities. Depending on the size of the contract, the provincial group will go through a procurement process facilitated by BC Clinical and Support Services (BCCSS). All survey vendors are required to adhere to strict privacy and information security requirements, as specified by applicable BC legislation.

Survey Weights

Survey weights are used to make the sample representative of the target population on key characteristics such as organization level attributes or demographic characteristics during analysis. Survey weights, or the inverse probabilities of selection for each observation, allow users to reconfigure the sample as if it was a simple random draw of patients that is representative of the total patient population to yield accurate estimates.

Top-Box Score

The top-box score is the percentage of respondents who selected the most positive response category to a survey question (e.g., the ‘Always’ response option from the choices Never, Rarely, Sometimes, Usually, Always).

Total Valid

The Total Valid number is the number of respondents who reported a valid answer (i.e., excluding missing and not applicable responses) for the question.

Valid Percent

The percentage of responses based on the Total Valid number (i.e., excluding missing and not applicable responses).

Validity

Validity typically speaks to the accuracy of an assessment tool in terms of, whether or not it measures what it is supposed to measure. A survey instrument or item may be reliable but may not necessarily be a valid measure. Validity must be formally established by empirical studies as well as sound psychometric and test development practices. The definition of validity itself has been subjected to debate. In particular, the current Standards for Educational and Psychological Testing (developed jointly by the American Educational Research Association, American Psychological Association, and the National Council on Measurement in Education) champions the view that a survey instrument is neither valid or invalid (i.e., validity is not a property of the test). Instead, validity is defined as the degree to which ongoing empirical evidence and theory support the conclusions drawn from the survey instrument for its intended purposes.

Selected Survey Tools

The 2016/17 OSA Long-term Residential Care Survey marks the first time that information from patient-reported experiences of care measures (PREMs) has been collected simultaneously with patient-reported outcome measures (PROMs) related to residents' quality of life and experience in long-term residential care. The table below summarizes each of the question blocks or modules included in the survey.

The resident survey asked 103 questions (104 questions for the Most Frequent Visitor survey), including two questions on overall quality. The majority of the questions were from the interRAI Long Term Care Resident Quality of Life Survey, with additional questions on medication use, quality of physician care, handwashing, and other topics. All custom questions were developed by the Consultation Group and the OSA, and were cognitively tested prior to implementation. The questions can be grouped into the following categories:

Survey Section	Question Block or Modules	No of Questions Resident	No of Questions MFV
PREMS	Participation (Interview) Status	1	-
	Privacy	2	3
	Food and Meal + Tube Fed	7	7
	Safety and Security	3	5
	Comfort	6	5
	Make Daily Decisions / Autonomy	7	7
	Respect by Staff	4	6
	Staff Responsiveness	11	11
	Staff-Resident Bonding	7	6
	Activities	6	6
	Personal Relationships	7	5
	Medications	3	3
	Doctor / Physician Care	3	5
	Physical Environment	-	2
	Hand Cleaning	-	6
Overall Experience (Additional Questions)	2	4	
PROMS	Veteran's Rand 12 Item Long Term Residential Care	14	14

Survey Section	Question Block or Modules	No of Questions Resident	No of Questions MFV
	Health Survey (VR-12 LTRC)		
	Veteran's Rand 12 Item Health Survey (VR-12)*	14	14
DEMO	Demographic questions	3	8
OPEN	Overall Open-ended patient comment question**	1	1

*The original VR-12 was administered only with residents who participated in the side by side study.

**The Resident survey includes space at the end of each page to record open text comments related to the topic asked about on that page.

interRAI Quality of Life (QoL) Survey

The *interRAI Quality of Life (QoL) for Long Term Care Facilities* is the most widely used, tested, and validated instrument in Canada to understand the experience of seniors living in residential care. The tool is endorsed by the Canadian Institute for Health Information for standardized pan-Canadian patient-centred measurement, and continues to undergo development and refinement. Results from the *interRAI* survey can also be linked to clinical assessment data, the RAI-MDS data, to enable additional analyses based on clinical indicators.

interRAI Family Survey for Long Term Care, a companion version of the survey for residents' most frequent visitor was used to understand their experience from the perspective of their family or friend. The items on the Family survey were for the most part identical to those on the resident survey. The companion survey was developed and tested by *interRAI*. A set of 40 questions were added to the family survey to meet the additional information needs of the OSA. As with the resident survey, all made-in-BC questions were cognitively tested prior to administration in the provincial survey.

Permission was obtained to use the *interRAI Quality of Life* survey tools for a five year period, beginning July 15, 2015 and on certain terms and conditions. The *interRAI* surveys and related data collection materials are protected by the terms of *interRAI*'s license which strictly control their distribution and limits the use of the full text of questions (no publication, including on the www, may contain the full text of the survey questions).



See Appendix C of the technical report for details on the terms and permitted usage of the *interRAI* survey tool

The Veteran's Rand 12 Item Health Survey

The VR-12 is a generic (i.e. not condition specific) patient reported outcomes measure (PROM) that focuses on self-ratings of health-related quality of life. It is an abridged version of the Veterans RAND 36-item Health Survey (VR-36). The VR-12 includes questions that will produce scores for the following:

- Overall health status
- Physical health status
- Mental health status
- 7 health domains including:
 - physical functioning, social functioning, energy-fatigue, bodily pain, role limitation, perceived general health, and perceived mental health

Importantly, the VR-12 items are included to provide summary measures of physical and mental health status and the 8 domains and to allow for comparisons with other populations. They are not meant to be reported and interpreted as individual questions/items.

A Long Term Residential Care version of the generic VR-12 was tested via the OSA's survey in a side by side study. The survey tool used was an adaptation of the VR-12 developed in BC together with the developer of the VR-12, Dr. Lewis Kazis. The VR-12 was reviewed by measurement experts for content validity. Items that were not suitable for the residential care population (e.g., climbing a flight of stairs) were replaced with items from the original SF-36. Residents were asked to answer questions from the original version of the VR-12, as well as the adapted version, the VR-12LTRC. The VR-12 survey was placed at the end of the adapted VR-12LTRC tool, but before the final open-ended question.

The VR-12 results were not publicly reported, as the data was used to inform decisions about a generic PROM instrument for use in BC and nationally in Canada. While other studies have examined the psychometric properties and validity evidence pertaining to the use of PROMS measures in various settings and populations, the inclusion of the PROMS in the BC Long-term Residential Care sector survey was motivated by the questions "What kinds of information do these PROMs provide? What 'stories' do they tell?". The overall goal was to help inform the selection a generic PROM for use in BC and in Canada to measure the self-reported health-related quality of life and health status of residents in long-term residential care.

Work has begun to examine the psychometric properties of the VR-12LTRC. Please refer to the following publication regarding the development of the VR-



Scoring protocols for the VR-12 can be obtained from the developer, see <https://www.bu.edu/sph/about/departments/health-law-policy-and-management/research/vr-36-vr-12-and-vr-6d/>



Canadian norms are available via the following webpage <https://vr12.jameshicklin.com/interactive-calculator>

12LTRC (<https://pubmed.ncbi.nlm.nih.gov/32299327/>). Further validation research of the VR-12LTRC is in progress and scoring procedures are under development. To-date, content validity of the VR-12LTRC was evaluated via resident feedback and expert consensus discussions, followed by cognitive interviews with residents. A final expert consensus discussion was held to summarize the findings. Measurement bias via differential item functioning (DIF) analyses has also been conducted. The results found that responses to the VR-12LTRC are not subject to DIF due to cognitive status and produce unbiased self-reports of physical and mental health status. These findings support the use of the VR-12LTRC as a PROM for long-term care residents.

Sample Plan

In the spirit of the guiding principle that “every voice counts”, a census approach was taken. All eligible residents and their most frequent visitor (MFV) in one of BC’s 292 long-term care facilities were invited to participate in the 2016/17 OSA Long-term Residential Care Survey. The total population of residents approached for an interview was 22,162. The number of completed surveys for the resident survey was 9,812. The number of MFV surveys sent out was 21,334, with the intention to survey every MFV. The number of returned MFV surveys was 10,048.

While the intent of the 2016/17 OSA Long-term Residential Care Survey was to capture as wide a range of resident experiences as possible, not all residents were eligible for inclusion. Any care home with one or more publicly funded residential care beds was included in the OSA’s survey. However, where there were private paying residents co-residing in the same care home as publicly subsidized residents, the private pay residents were included in the survey. The publicly subsidized residents are the majority in all of these facilities and most facilities have fewer than 15 residents who pay privately. To be eligible, residents had to have lived in the facility for at least two weeks before the start date of the interviews. Exclusion criteria were as follows:

- Palliative Care: Resident was in a palliative or special care unit.
- Deceased: Resident had passed away prior to interview commencement
- Could not locate: Resident was away or never in the care home during interviewing times.
- Risk to interviewer: Resident was deemed aggressive or unsafe to approach by a volunteer interviewer
- Discharged: Resident had been discharged prior to interview commencement

- Belonging to a Special Care Unit (SCU). These residents were not to be included in data file
- Language: Resident who did not speak one of the 10 languages in which the survey was available or if there were no volunteers on site who could speak one of the 10 languages.

The Data Collection Process

For the 2016/17 OSA Long-term Residential Care survey, data was collected via the following process and differ between the resident and Most Frequent Visitor (MFV) Survey. The Volunteer Resources Management Subcommittee (VRMSC) of the LTC Consultation Group (CG) provided advice on the development of a centralized recruitment, screening, training and deployment model. The Regional Engagement Leads in each health authority recruited, trained, and coordinated a team of 854 volunteers. Trained volunteers administered the resident survey through an in-person interview whereas most frequent visitors had the option to complete a mail-in survey or respond on-line. Volunteers approached residents up to three times to attempt the survey. Facility staff was asked to identify the MFV of each resident.

The resident survey and the paper version of the MVP survey were available in the following languages:

English	Chinese	Punjabi	Korean
French	Spanish	German	Persian
Italian	Tagalog		

The original intention was to have all available translations accessible for the online MVP survey; however due to time restrictions, only the English version was made available online.

Process for Resident Survey

1

Data Submission: Health authority representatives securely sent the selected survey vendor records of all residents in their participating long-term care facilities. The data elements included with every resident is included in the Data file Submission Manual. The survey vendor generated a list of all eligible residents and survey materials and confirmed any discrepancies or errors with the health authority lead. Once verified, the information was forwarded to and processed by the printing vendor.

2

Welcome Package: All the information required to conduct the interviews was compiled and mailed to the facilities via UPS expedited delivery in a Welcome Package that contains:

- Introduction letter
- Confidential Resident List
- Resident surveys with a unique ID on each in order to identify a resident
- Generic Resident Surveys (extra copies of the survey)
- Postage paid envelopes (#10) (same number as generics)

3

Survey Administration: Notification posters were posted in each of the care homes one month in advance of the beginning of onsite surveying to advise residents and their most frequent visitors that they may be selected to complete a survey.

The surveys were then conducted by trained interviewers following a standard structured interview technique. See www.surveybcseniors.org for all training materials (under Resources). Residents were approached up to three times for consent to participate. Before beginning the interviews, volunteers were asked to review the resident lists with the facility coordinator to verify residents who were eligible to be approached for an interview. Volunteers were given a set of response boards which were used while asking questions to provide residents with a visual of response options. At the end of each attempt or interview, the interview status question was completed by the volunteer to indicate the status of the survey. Once an interview was complete, trained volunteers filled in the final interview status, marked off the resident from the resident list, and put the survey in a sealed envelope and returned it to a designated location.



See Appendix M of the technical report for text fragments that provide an indication of the questions in the interRAI surveys; due to license requirements, the full text of the survey cannot be published in reports.

4 **Data Collation:** Surveys were returned daily to the survey vendor using standard Canada Post mail. Once all the interviews in a facility were completed, the facility coordinator scanned the resident list and sent it to the survey vendor through a secure portal or mailed it back in a postage paid envelope. Residents' survey responses were entered into a secure database and collated by the survey vendor. As noted, aggregated results and reports were provided to individual facilities, health authorities and the province.

Process for Most Frequent Visitor Survey

1 MFVs received surveys even if the resident was unable or unwilling to participate in a survey. Each facility securely sent a record level data file containing the information needed to contact the identified most frequent visitor (MVP). If the data file was compliant, the file was processed the same day and the next day the cover letter from the OSA and the surveys were printed and mailed by standard Canada Post to the address provided in the data file. A reminder letter with another paper copy of the survey was mailed to MFVs 21 days later whose completed surveys had not been received by the vendor. The surveys expired 120 days from the time the data file was processed and any results received after that date were not counted.



See Appendix N of the technical report for the text fragments of the questions in the survey; due to license requirements, the full text of the survey cannot be published in reports.

Privacy Considerations

The information collected from residents on admission to the care home and given to the survey vendor for the purposes of conducting the survey included personal information required to conduct the survey (e.g., room number and bed number). Information that is used, disclosed, and retained for purposes of conducting Patient Experience of Care Surveys are statistical in nature; this means that results cannot be directly used to affect the treatment of a specific resident.

The survey vendor was required to demonstrate compliance with the BC Freedom of Information and Protection of Privacy Act and continues to be subject to the independent oversight of the BC Information and Privacy Commissioner. A Privacy Impact Assessment (PIA) for the project was completed and approved by the Health Information and Privacy Operations Committee of BC (HIPSOC) on May 19th, 2016, and an onsite audit of the survey vendor's operations is conducted annually to review the way personal health information of BC patients is managed in each survey project. In addition, the survey vendor is contractually obligated to fulfill its obligations under BC's Privacy Protection Schedule.

In accordance with BCFOIPPA, which is a notification regime, throughout the time that the survey was being conducted, signs were posted in each of the facilities to advise residents that they may be selected to complete a survey. These posters fulfilled four purposes:

- Informing residents about the survey and the timeframe;
- Providing contact information, if residents have questions;
- Providing a mechanism for residents to "opt out"; and
- Providing information about the use and protection of the personal information of residents under BC's Freedom of Information and Protection of Privacy Act (BC FOIPPA).

Notification signage was posted in every facility one month prior to surveying began. In addition, a letter was included in all welcome package that included specific information about the protection of personal information under BC FOIPPA, as well as contact information, if resident had questions about the survey, or wished to be removed from the survey contact list (see above for sample letter).

i See Appendix O and P in the technical report for the code book for the resident and MFV surveys

i See Appendix A in the technical report for the Privacy Impact Assessment and Certificate of Approval


i See Appendix B of the technical report for a sample notification poster and Appendix E for a sample cover letter.

Response Rate for the 2016/17 OSA Long-term Residential Care Survey


Response rate, along with the margin of error, is one of the most commonly used indicators to gauge the quality and accuracy of survey data.

The 2016/17 OSA Long-term Residential Care survey was conducted through two processes for the residents and most frequent visitors' survey. Trained volunteers completed an in-person interview with residents and most frequent visitors completed a mail-in or online survey.

The table below shows the response rate for each health authority. Response rates for the resident survey (calculated from resident participation status) were calculated by dividing the number of completions over the valid sample (number of approached residents, excluding ineligible residents).

The overall response rate for the 2016/17 OSA Long-term Residential Care **Resident** survey was **44.6%** 

Health Authority	Response Rate
Fraser	41.9%
Interior	49.0%
Island	47.4%
Vancouver Coastal	42.0%
Northern	44.8%

The overall response rate for the 2016/17 OSA Long-term Residential Care **MFV** survey was **48.8%** 

Reporting & Analysis: General

Throughout the duration of the survey period and at the close of collection, aggregate data at the facility, health authority, and provincial level was provided to respective audiences to provide interim results and summarize the final results of the 2016/17 OSA Long-term Residential Care survey.

Results were presented in a series of different reports, including the following:

Report Type	Function
Provincial Report	Detailed graphical and narrative reports for all items and domains with data for all facilities the province.
Health Authority Reports	Detailed graphical and narrative reports for all items and domains that data for all facilities in a health authority
Facility Reports	Detailed graphical and narrative reports for all items and domains that data for a care facility.

Static Reports

To view Provincial-level report, Health Authority report, and facility level reports, please contact your Health Authority representative or Lena Cuthbertson.

OSA Reports

In addition to the vendor prepared reports, the OSA also prepared a provincial report, a health authority report, and facility level reports that summarize the survey results on their website.



See <https://www.seniorsadvocatebc.ca/osa-reports/residential-care-survey/> for a complete list of reports released by the OSA

Response Categories

Response categories are the choices provided to respondents when asked a close-ended question. The choice of response categories and the number of scale points can affect how precise respondents rate their opinions and experiences. In general, more ordered response categories or a higher number of scale points allow finer distinctions to be made between patients' reported experiences and outcomes (i.e., higher degree of measurement precision). The associated increase in response variations also allows relationships between questions or dimensions to be examined to a greater extent. In doing so, results provide a better opportunity to detect changes and differences. However, if patients cannot reliably decide between two scale-points or the differences are not clinically meaningful, having additional response categories increases respondent burden and can add noise to the data, thereby increasing the amount of measurement errors.

The OSA Long-term Residential Care survey mostly adapted five-point scales without a neutral category (e.g., Never, Rarely, Sometimes, Most of the Time, Always), with a mix of dichotomous questions and a 5-points rating scale for outcome related questions (e.g., Never, Rarely, Sometimes, Most of the Time, Always). Responses categories and number of scale points for the survey were determined using rigorous testing and validation processes, including cognitive interview and pilot studies that examined the scale reliability and validity of responses.

Valid and Non-Valid Responses

A response is considered "valid" when respondents select a response category that clearly states or reflects their opinion on a question (e.g., Never, Rarely, Sometimes, Most of the Time, Always). Valid response refer to the number of patients who provided a valid answer for the question and are used to calculate the valid percent. Responses such as "don't know" and "not applicable" and missing responses due to skip patterns are considered non-valid responses. "Don't know" is considered a non-valid response when calculating top-box scores as a "don't know" response cannot be classified as a positive or non-positive opinion or experience.

A Non-Valid response count refers to number of patients who did not provide a valid response (i.e., select from the valid response options) and answered "don't know", "not applicable", "prefer not to answer" to the question.



See Appendix O and P Resident Survey Codebook and MFV Survey Codebook in the technical report to determine which response categories are valid responses and which are non-valid responses

From the valid responses, a valid percentage is the percentage of responses (%) based on the total valid responses for a question or dimension. The valid percent column is arguably the best statistic for reporting purposes as it excludes those for whom the question was not applicable, and those who weren't sure of or didn't know the answer to the question.

Special Non-Valid Response Values

The survey contains special response value codes used by the survey vendor. As these values are not part of the standard definition in BC Ministry of Health Healthideas databases, they are not encoded directly in the database table fields or extracts derived from these tables. The table below describes these codes based on information provided by the survey vendor (NRC Health), which are typically use to encode a non-valid response (e.g., don't know, no response, multiple answers for single answer question).

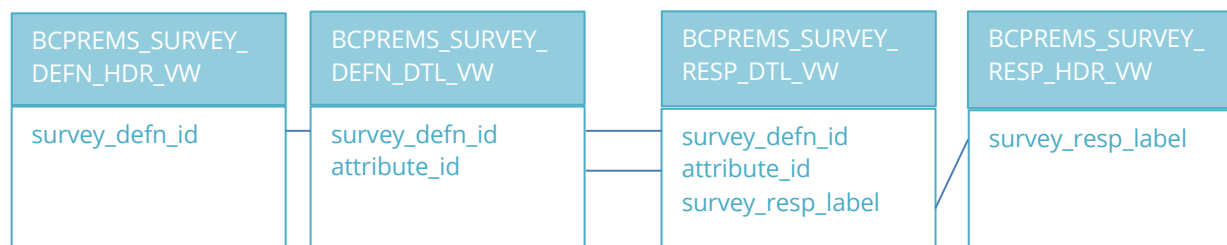
Response Value	Description
-8	More than 1 response provided on a single answer question
-9	No response
-89	A value associated to a question's answer scale. This is typically a code use to denote a "Don't know" response
4 digits or 5 digits values	A value to indicate a respondent answered a question that violated the skip logic. The question should not have been answered, it was answered but the value is adjusted accordingly to distinguish from other valid responses.
e.g., 10001 10002 10003 10004 10005 9912 9913 9914	<p>The general rules are:</p> <p>For the 4 digits value (9xxx), take 10000 and subtract the 4 digits values to find out the actual response value. For example, a value of 9912 means a skip logic violation and respondent picked a response value of -88.</p> <p>For the 5 digits value (1xxxx), subtract 10000 from the value to find out the actual response value. For example, a value of 10003 means a skip logic violation and respondent picked a response value of 3.</p>

Database Views in Healthideas

Healthideas normalized the vendor supplied individual data files into database objects designed for data security, storage efficiency, and scalability. Four database views were created from these objects for analysis purposes.

Database View	Description
BCPREMS_SURVEY_DEFN_HDR_VW	Contain information about the survey such as the survey sector and survey version.
BCPREMS_SURVEY_DEFN_DTL_VW	Contain information about the survey question such as the question unique identifier, question label, and the dimension the question belongs to.
BCPREMS_SURVEY_RESP_HDR_VW	Contain information about the respondents.
BCPREMS_SURVEY_RESP_DTL_VW	Contain response to a given question in the survey.

The four database views can be linked to each other with the following key columns.



Data Dictionary

There are two data dictionaries for this sector survey:

- 1) the data dictionary in Metaspace; and
- 2) the survey vendor supplied codebook.

The Healthideas data dictionary can be used as the primary data dictionary and describes the columns in the four database views developed for analysts. Users can then query the database view SURVEY_DEFN_DTL_VW to identify the labels for the survey questions and their response categories. The database views also contain information on which response categories are valid responses and which are non-valid responses.



See Data Dictionary in Metaspace (<http://meta.healthideas.gov.bc.ca/>) for detailed survey metadata.



See Appendix O and P of the technical report for the Resident and MFV Survey Codebook

The survey vendor supplied codebook provided the same information but there are some important differences between the two. Survey descriptors such as survey sections and variable names for each sector survey have been standardized into a common format when they were transferred to *Healthideas*. These meta data are standardized to facilitate the secure and efficient storage of multiple sector surveys. The codebook and questionnaire prepared by the survey vendors use the original variable names, instead of the standardized variable names. To find out the original variable names, a survey layout mapping document is available to map the *Healthideas* labels back to the original survey descriptors used by the survey vendor.

Missing Values for Dates

Missing values can be denoted implicitly as NULL values or explicitly with a special response value (code). In the *Healthideas* databases, all dates have been standardized into MMDDYYYY format. Dates that do not conform to this format, such as patients where no information on admission date exists or patients with incomplete dates, (e.g., only the month or year of admission is available) are shown as NULL values in the database.

“Partial” and “Complete” Surveys

While the exact definition of a complete survey varies depending on the sector and survey tool used, generally speaking, a partial survey means the respondent did not answer all questions. For example, if there were 100 questions, the patient only answered 75.

The 2016/17 OSA Long-term Residential Care Survey reports include responses from partially complete surveys, answers from respondents who had a participation status of “Completed an Interview” and who completed at least 5 questions (the privacy section and tube feed question). From the perspective that every patient’s voice counts, each response, answers from patients who partially completed the survey should be included.

For the mail-in most frequent visitor survey, some surveys had missing response due to:

- Filling in two response options in a single select question
- Illegible markings (e.g., a mark in between two response options)
- Responding to skip pattern questions that should have been skipped

- Real responses not captured due to screening skip questions being left blank

From an analytical standpoint, there are methodological challenges as to whether to include or exclude partially completed surveys. The challenge stems from the unknown (unobserved) systematic differences between patients who completed the entire questionnaire versus those who answered only some of the questions. The extent to which these differences cannot be adjusted or accounted for can bias the estimates. The number of non-missing responses within a survey instrument is also important when calculating summary scores of standardized instruments such as the VR-12. Standardized instruments often have strict guidelines on the minimum number or percentage of answered questions for a scale before summary scores can be calculated.

While there is no right or wrong approach on how to handle partial completes, here are some guidelines:

- To replicate the numbers in the published reports, include partially completed surveys
- To examine potential differences between wholly complete and partially complete surveys, include partially completed surveys by treating them as a separate sub-group in the analysis
- To replicate the summary scores for a standardized instrument, consult the instrument developer's scoring manual and follow the recommended scoring algorithm and procedure

Reporting & Analysis: Scoring

Percent Positive Scoring

A percent positive score (or Top N Box score) is the percentage of respondents who selected any positive response category to a survey question. To facilitate interpretation of survey results and comparison across questions, survey responses are often standardized as a percentage of positive answers.

For individual questions, “Percent Positive” answers are defined as a positive response category to a survey question regardless of the response categories. Results are easier to compare when they are all scored in this way, since there is less variation in interpretation of what constitutes a “good score.”

A percent positive score is calculated by dividing the sum of any positive response over the sum of all valid response. The result is multiplied by 100 to transform it into a percentage.

$$\text{Percent Positive Score} = \frac{\sum \text{positive response}}{\sum \text{valid response}} \times 100$$

The percent positive dimension or theme score is calculated by treating all positive responses and all valid responses for all the questions as one combined question (i.e., the “grand average” approach). The percent positive scores are then calculated in two steps. First, the two total scores are calculated for each survey respondent. The first total score (positive totals) consists of the sum of all “positive” values for questions corresponding to each dimension. The second total score (valid response totals) consists of the sum of all valid responses for questions corresponding to the same dimension. Depending on the particular grouping or aggregation that was required, the positive totals are divided by the valid response totals to obtain a percent positive dimension score. The result is multiplied by 100 to transform it into a percentage.

$$\text{Dimension Score} = \frac{\sum \text{positive response for all question}}{\sum \text{valid response for all question}} \times 100$$

An alternate method can be used, as in other sector surveys (e.g., 2018 Emergency Department Survey). For dimension and theme scores, the percentage of percent positive responses for each question is first calculated separately and then averaged for dimensions/theme that make up of multiple questions. In other words, dimension scores are calculated using an “average of the average” approach.

Dimension Score = Average(percent positive score for all questions)

Computationally, the "grand average" approach is more intensive when data is weighted. Conceptually, the two methods are different ways of calculating the same thing. In practice, unless the number of valid responses for each question varies significantly, the final dimension scores estimates are close enough that it does not make any practical differences in which approach to use.

Dimension Scores

A dimension or theme score is a composite score based on an unweighted sum of all items that make up a given dimension or theme. The 2016/17 OSA Long-term Residential Care survey consists of questions designed to measure different dimensions (or themes) of PREMS and PROMS. It includes items from the *interRAI Quality of Life (QoL) for Long Term Care Facilities* and its companion survey for family and friends of residents, as well as additional made-in-BC items developed with inputs from organizations such as the Office of the Seniors Advocate.

Dimension (Theme)	Source
Caring Staff	interRAI Quality of Life Survey
Food	
Personal Control	
Social Life	
Staff Responsiveness	
Medication	Made-in-BC
Physician Care	
Hand Hygiene (MFV only)	
Physical Environment (MFV only)	

Reporting & Analysis: Qualitative Comments

Comment boxes were placed at the end of each section of the questionnaire for trained volunteers to record any additional comments the residents made during the interview. Residents and MFV was also asked to respond to the question at the end of the survey, "Is there anything else you would like to tell us about your experience living here?"

For the purposes of the 2016/17 OSA Long-term Residential Care survey, open-text comments were transcribed verbatim for the resident survey completed in-person and were entered exactly as written for the MFV mail or online survey. All comments appear verbatim in the data set, with no corrections for grammar or content, although any personal identifiers are masked (XXXX). The survey vendor then coded each comment into predefined themes (e.g., Privacy, Food/Meal, Comfort, Autonomy, Respect, Activities, Safety). For each theme, valence codes were assigned depending on whether the theme-specific comment was positive, negative, neutral, or both positive and negative. Prior to being included in the facility level reports and the data sets for *Healthideas*, the survey vendor reviewed all comments to remove identifiers that could reveal the identity of the patient, doctors, nurses, or other staff. Also, comments that were insensitive to specific racial or ethnic groups were adjusted so that the group was no longer identifiable. Narrative comments are included at the record level in *Healthideas*.

Open-text comments serve as a rich source of qualitative data to compliment the quantitative results of the survey. Open-text comments can be used to illustrate the human face of the data, to provide additional insight into what the survey results are demonstrating, and to point to areas not addressed in the survey that may be important to patients.

FAQs: Response Rate and Survey Accuracy

How precise are the survey estimates?

Numbers are rounded to avoid reporting insignificant figures. For example, it would create false precision to express a percent positive or top-box score as 90.60000 % (which has seven significant figures) because the questions were never designed or validated to measure patients reported experience and opinion to that degree of precision.

For the purpose of reporting, most survey results, including percent positive scores or subgroup averages are considered to have a level of precision of up to one decimal place and are stored internally up to the precision allowed by the software. Given the measurement precision of the survey question, reporting more than two decimals of precision is not recommended as the original survey questions are unlikely to measure patients' experience and opinions accurately to two or more decimal points.

What is non-response bias?

Non-response bias is the bias that results when non-respondents differ systematically in meaningful ways from respondents. The result is that the survey sample often doesn't reflect the population they are meant to represent very well.

Most surveys suffer from non-response bias that may affect the quality of a survey and how accurate its estimates are. When patients who were selected in the random sample are unwilling or unable to participate in the survey, they are said to provide a non-response to the questionnaire (i.e., are non-respondents). When patients decline to answer a particular question, they provided "a non-response", resulting in missing data at the question level.

What does response rate tell us about non-response bias?

It is important to note that response rate is not necessarily a good indicator for non-response bias. A higher response rate, while desirable, does not mean the survey has smaller bias. Conversely, a low response rate does not by itself imply that survey estimates are biased. Instead, knowing whether responses from respondents and non-respondents differ in some systematic way is the best indicator of non-response bias. One way to assess the impact of non-response is to compare known characteristics known to be related to survey responses between these two groups to see if they differ. Information on non-respondents

might come from previous sector surveys or external administrative data sources (e.g., health records or para-data files). The degree of non-response bias may also differ depending on the reasons of non-response (e.g., refusal, non-contact, technical problem). Non-respondent bias is often difficult to assess because of a lack of information from external sources to compare their characteristics against those of the respondents.

What is method bias?

Systematic differences in survey responses obtained from respondents who completed the survey in different survey modes are part of a class of bias called method bias. Method bias is broadly defined as any bias that results from the choice of survey method. Method bias happens when variations in responses are associated with the method (or survey instruments) rather than the actual opinions or reported experience of the respondents that the survey attempts to measure. The bias can occur because of the way the items or questions are phrased, the way in which they're asked, or the audience to which they're asked (e.g., self-report versus proxy respondents). This may include differences related to survey mode (e.g., phone, mail, or online survey), response format (Likert-scale versus multiple responses), scale range (3-point vs. 5-point scale), positive or negative item wording, or the language in which the survey is conducted.

Method bias is one of the main sources of measurement error in mixed-mode surveys. The method introduces “noise” variations in responses that contaminate actual differences and variations in patient’s opinions or experiences.

For standardized instruments, method bias and method variance can be accessed via psychometric techniques such as confirmatory factor analyses or item response theory.