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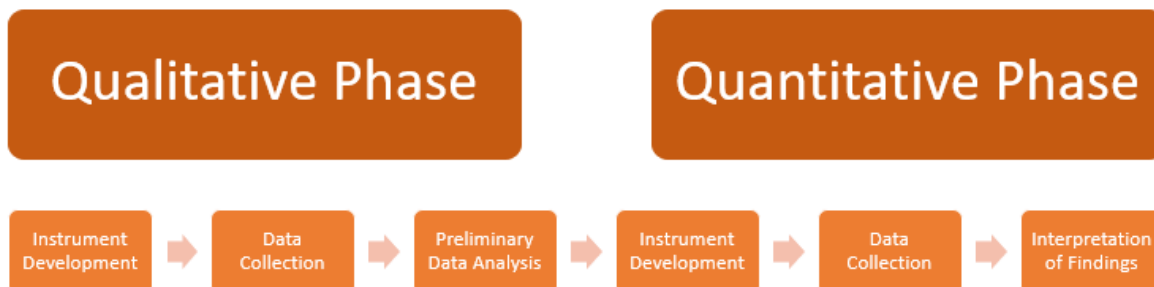
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Study Design

To ensure we were able to successfully answer the research questions set forth by the Oregon State Legislature, we used an exploratory sequential design for this study, a robust mixed-methods study design. A mixed-methods study design was most appropriate for this study, as it allows the integration of qualitative data to provide an enhanced understanding and interpretation of quantitative findings. With this design, the qualitative phase of the study, including data collection and preliminary analysis, precedes quantitative data collection and analysis. Quantitative data instruments are then informed by qualitative study findings, enhancing the validity of the quantitative measures. A schematic of the study design is presented in Figure 1.

SB 1554 required different study questions for Reports 1 and 2, with several study informants spanning both sets of study questions. To reduce the burden on these study participants, Rede gathered information from participants for both reports during the initial phase of this project (July-Nov. 2022). The detailed methods described in this Appendix cover methods used to gather additional data during the second phase of this study (Dec. 2022-Mar. 2023). For detailed methods of data collected in phase 1 of the study (July-Nov. 2022) please see [Report 1 Appendix G](#).

Figure 1: Study Design Schematic



Qualitative Phase

In the qualitative phase of this study, a variety of data collection methods were used, including individual interviews, group interviews, focus groups, and documents review.

Given the short timeframe to collect, analyze, and report information for Report 2, all qualitative interviews could not be conducted and analyzed prior to survey distribution (the ideal sequence to allow qualitative responses to inform survey development).

Key Informant Interviews

Interview Methodology

Rede engaged a diverse set of participant groups for individual interviews, including Health Care Associations, a Labor Union, School District Superintendents (SDs), Education Service District Superintendents (ESDs), and a Tribal Organization. In total, Rede Group and partners supporting the project conducted a total of 17 interviews (with 21 interviewees) for Report 2 between December 2022 and February 2023, with one ESD interview conducted in the first phase of data collection.

Interview Sampling and Response Rates

Qualitative data is an excellent source of information, but it is both time and resource-intensive to collect. Given the time constraints of this study, it was not possible to interview every person involved in Oregon's Public Health System Response to the COVID-19 pandemic. Therefore, we used both probability and purposeful sampling strategies to reach different informant groups. Stratified random sampling, a type of probability sampling strategy, was also utilized to ensure the representativeness of our evaluation sample to the larger target population and thus, the generalizability of study findings. In stratified random sampling, the study participant groups are divided into mutually exclusive, non-overlapping groups of sampling units called strata. Within each stratum, we

assigned each member of the group a random number and used a random number generator to pull individuals to participate in the study.

Interview Recruitment

The primary method for recruiting interview participants was via email. Recruitment email scripts were written and distributed by Rede staff and partner organizations. If a participant was unresponsive to an initial email, at a minimum, one follow-up email was distributed, and in most cases, multiple follow-up emails and a phone call were made as part of the recruitment protocol.

Before scheduling interviews, Rede requested information from potential interviewees about the length of time in their current position. Given the retrospective nature of this study, this was an important methodological consideration. We requested participation from interviewees that met the following criteria:

1. Interviewees that had been in their current position since March 2020 and involved in COVID-19 response or had been involved in the COVID-19 response within their organization in another position since March 2020.
 - a. If the potential interviewee did not meet the above item 1 criteria, Rede requested an additional interviewee within the organization who had been involved with COVID-19 response at a Director/Administration/leadership level since March 2020.
 - b. If the intended interviewee was unavailable during the data collection timeframe, Rede requested an alternative interviewee at the Director/Administration/leadership level who met criteria 1 above.

Interview Guide Development

Rede staff developed interview guides tailored for each participant group.

Interview Data Collection

Interviews were scheduled for 60 minutes and were conducted by a Rede staff member with experience conducting other interviews for this project. The interviews were conducted via Zoom between Dec. 2022 and Feb. 2023.

Interview Data Transcription & De-identification

Interviews were recorded and uploaded to Rev for professional transcription. Once transcribed, interviews were reviewed for accuracy and de-identified to omit any information that could compromise the confidentiality of participants. De-identification journals were used by the analysts to record omitted information and for consistency in de-identification. Once the transcript was de-identified, the file was relabeled to remove participant names and uploaded to Dedoose qualitative analysis software for coding and analysis. Interview recordings were deleted once the transcript was finalized.

Interviews by Participant Group

Education Serving Labor Union

The study team, in consultation with OHA, identified three labor unions that could inform answers to the study questions. Identifying a contact person and contact information for a person in a leadership position at the labor unions was a challenge as well as receiving a response from the labor unions. Ultimately, the study team conducted one interview with an education-serving labor union for Report 2.

ESD Superintendents

Rede conducted a web search to identify all ESDs in Oregon. In total, there are 19 ESDs. ESDs were reviewed to determine the primary region served. After ESDs were stratified by the primary region served, stratified random sampling was used to select one ESD from each region. In total, Rede conducted five interviews (approximately 26% of ESDs) with representation from each region.

School District Superintendents

For Report 2, the study team conducted interviews with Oregon K-12 public school district superintendents. To identify all Oregon public SD Superintendents and their contact information, Rede went through the ODE website and found the Oregon School Directory 2021-22 (as of July 2022). SDs were reviewed to determine the primary region served. Rede opted for stratified random sampling and randomly selected three SDs from each of the following regions:

- Region 1: Clatsop, Columbia, Washington, Tillamook, Clackamas, Multnomah
- Region 2: Yamhill, Marion, Linn, Polk, Lincoln, Benton
- Region 3: Lane, Douglas, Coos, Curry, Josephine, Jackson
- Region 4: Hood River, Wasco, Sherman, Gillman, Morrow, Umatilla, Union, Wallowa: Baker, Malheur
- Region 5: Jefferson, Wheeler, Grant, Deschutes, Crook, Klamath, Lake, Harney

In an effort to increase SD participation, Rede worked with the Coalition of Oregon School Administrators (COSA) to distribute direct emails to SD Superintendents who were unresponsive to initial email outreach from Rede. In cases where potential interviewees were unresponsive to multiple recruitment attempts, Rede randomly sampled an alternative participant. This occurred with 7 SDs who were randomly selected but unresponsive to recruitment methods.

There were 201 school districts in the Oregon School Directory 2021-22 (as of July 2022). Rede used stratified random sampling to identify 15 (three from each region) SD Superintendents for interviews. Nine interviews were completed with SD Superintendents (4% of the public school districts in Oregon). Figure 2 details the number of SD and ESD interviews conducted by region.

Figure 2: Number SD and ESD Interviews by Region

	Number of SD interviewees	Number of ESD interviewees
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Region 1	2	1
Region 2	2	1
Region 3	3	1
Region 4	2	1
Region 5	0	1
Total number of interviews:	9	5

Health Care Associations

Rede conducted one additional interview for Report 2 with a Health Care Association. Rede used online research to find contact information for executive-level leadership within the organization. Rede had previously reached out to this organization and other Health Care Associations during the initial phase (July-Nov. 2022) of this study, however, this organization was previously unresponsive so Rede attempted additional outreach that was successful in phase 2 (Dec. 2022-Mar. 2023).

Tribal Organizations

Rede conducted one additional interview for Report 2 with a Tribal Organization. Rede used online research to find contact information for executive-level leadership within the organization. Rede had previously reached out to this organization and other Tribal Organizations during the initial phase (July-Nov. 2022) of this study, however, this organization was previously unresponsive so Rede attempted additional outreach that was successful in phase 2 (Dec. 2022-Mar. 2023).

Interview Analysis

Each participant group’s interview data was analyzed in Dedoose by an experienced analyst. SD and ESD Superintendent transcripts were coded using a single coding tree and themes were assessed across SD and ESDs and for SDs and

ESDs separately. Transcripts for Tribal Organizations and Health Care Associations were analyzed in existing projects and with existing coding trees with other transcripts from the participant groups gathered during phase 1 (July-Nov. 2022) Transcripts were coded and then codes and excerpts were reviewed for key themes and important narratives. The labor union transcript was reviewed for important narratives outside of Dedoose because it was the only interview for this participant group.

Focus Groups

Focus Group Methodology

To increase the number of participants and expand on findings from the individual interviews, Rede engaged participants in focus groups. Focus groups were conducted with Oregon K-12 Public School Principals and School Nurses. The study team conducted a total of six focus groups with 25 participants for Report 2. Two of the focus groups were conducted with School Nurses (8 participants) and four of the focus groups were conducted with Principals (16 participants). Two of the Principal focus groups were conducted with Oregon K-8 Public School Principals (7 participants) and two groups with Oregon grade 9-12 Public School Principals (9 participants).

Focus Group Recruitment

Principals

The study team used purposeful sampling to recruit focus group participants through a partnership with COSA. To boost response rates, focus groups were held at existing meeting times with COSA's board of principal members. COSA informed the study team that the board of K-8 principals and the board of grade 9-12 principals had geographic representation.

School Nurses

The study team used purposeful sampling to recruit focus group participants through a partnership with Oregon School Nurses Association (OSNA). Rede

developed email templates that OSNA distributed through their listserv to school nurses. The study team worked with OSNA to identify the best time of day to conduct the focus groups for this participant group. The recruitment email included a link to a short survey to sign up for one of two focus groups. OSNA sent two reminder emails through their listserv to support the recruitment of focus group participants.

Focus Group Guide Development

The study team developed interview guides for each participant group informed by initial analysis of interviews with SD and ESD Superintendents.

Focus Group Data Collection

Focus groups were scheduled for 90 minutes and were conducted by Rede staff via Zoom in February 2023.

Focus Group Data Transcription & De-identification

Focus groups were recorded and uploaded to Rev for professional transcription. Once transcribed, focus groups were reviewed by the interviewer for accuracy and de-identified to omit any information that could compromise the confidentiality of participants. De-identification journals were used by the analysts to record omitted information and for consistency in de-identification. Once the transcript was de-identified, the file was uploaded to Dedoose qualitative analysis software for coding and analysis.

Focus Group Data Analysis

Principal and School Nurse transcripts were analyzed in Dedoose by an experienced analyst. Transcripts were coded, and codes and excerpts were reviewed for key themes and important narratives.

Process Interviews

Statewide Funding + Expenditures for Public Health Response

Funding to LPHAs, CBOs, Tribal Nations, and Tribal Organizations was originally explored in Report 1. However, the funding documentation that was provided to

Rede was incomplete and we were not able to provide the total funding amounts allocated to the actors in the public health system included in this study. However, Rede did commit to working with OHA after the submission of Report 1 to provide a more complete picture of funding for the pandemic response and include this information in Report 2. OHA was able to provide a list of total funding amounts and FEMA claims for COVID-19 response by OHA, LPHAs, CBOs, Tribal Nations and NARA, and other grantees or direct contracts. Rede met with OHA in a process interview to confirm the amounts and clarify expenditure categories and allowable activities.

Local Epidemiological Capacity + Data

To better understand the COVID-19 data supply chain and databases, Rede conducted a process interview with the COVID-19 Data Analysis and Reporting Manager at OHA. After this process interview, Rede also asked for a technical review of the local epidemiological capacity and data section of the report to ensure that we were accurately describing the databases, the types of COVID-19 data that were collected, and how these data flowed between state, local, and Tribal public health agencies. In OHA's review of the draft section of the report, some inaccuracies were noted and Rede confirmed these corrections with OHA one final time before finalizing Report 2.

Quantitative Phase

Survey

Survey Methodology

Primary data collection for quantitative data was collected via a series of online surveys that were tailored for each participant group. Four unique surveys were distributed to four participant groups (School District (SD) Superintendents, ESD Superintendents, School Nurses, and Principals). Some of the questions and response options on the four surveys were based on responses to questions asked during individual interviews and focus groups with the same participant groups.

Survey Sampling and Data Collection

ESD Superintendents

Rede obtained a list of Oregon ESDs through a web search. The ESD survey was distributed to individual email addresses of ESD Superintendents through SurveyMonkey. Up to three email reminders were sent to unresponsive ESD Superintendents. ESD respondents were excluded from the survey if they had not worked at their ESD for at least six months during one or more of the following school years: 2019-2020, 2020-2021, or 2021-2022. Eight ESD superintendents responded out of the 19 Oregon ESDs, a sample size of 42%.

School District Superintendents + Principals

Surveys were distributed to Oregon K-12 Public School SD Superintendents and Oregon K-12 Public School Principals by COSA through an email listserv previously established for these groups. The email to these groups included a link to the survey. COSA sent a reminder email to each of the listservs to increase survey participation. SD respondents were excluded if they did not work for an Oregon school district for at least six between March 2020-July 2022, and School Principals were excluded if they did not work for an Oregon school for at least six months between March 2020-July 2022. Seventy-one out of 201 SDs responded, a sample size of 35%, and of the approximately 1,160 school principals in Oregon¹ 171 principals completed the survey, a sample size of 15%.

School Nurses

Surveys were distributed to Oregon K-12 Public School Nurses by a representative of the Oregon School Nurses Association (OSNA) through an email listserv previously established for this group. The email to these groups included a link to the survey. OSNA sent a reminder email to each of the listservs to increase survey participation. School Nurses were excluded if they did not work for an Oregon school or school district for at least 6 months between March 2020-July 2022. According to a 2020 report from ODE, there were 376 FTE of nurses reported

¹ National Center for Education Statistics (2012) School and Staffing Survey, table 1. Total number of public school principals and percentage distribution of school principals, by race/ethnicity and state: 2011–12. https://nces.ed.gov/surveys/sass/tables/sass1112_2013313_p1s_001.asp

statewide². Seventy-four nurses submitted completed surveys, for an approximate response rate of 20%.

All four surveys were intended to be open for two weeks for each participant group, however, due to difficulties in getting responses, the surveys were open longer than anticipated as additional recruitment strategies were utilized to gather more responses.

Survey Data Analysis

Survey data was downloaded from Survey Monkey and analyzed within Google Sheets. Partial surveys with at least 25% of questions completed were included in each data set. The primary approach to analysis was descriptive, and when possible, subclass analysis was performed (such as by Region and/or pandemic Stage) except for educational surveys. Educational survey analysis by region and stage will be reported on in Report 3. Charts and other data visualizations were created to aid with data interpretation and highlight key findings. For further details on survey analysis, including regional representation, please review Appendix H: Preliminary Survey Analysis of Report 2.

² Oregon Department of Education (2020). *2020 Nursing Services in Oregon Public Schools*. <https://www.oregon.gov/ode/students-and-family/healthsafety/SiteAssets/Pages/School-Nurses-Annual-Report/2020%20School%20Nursing%20Report.pdf>