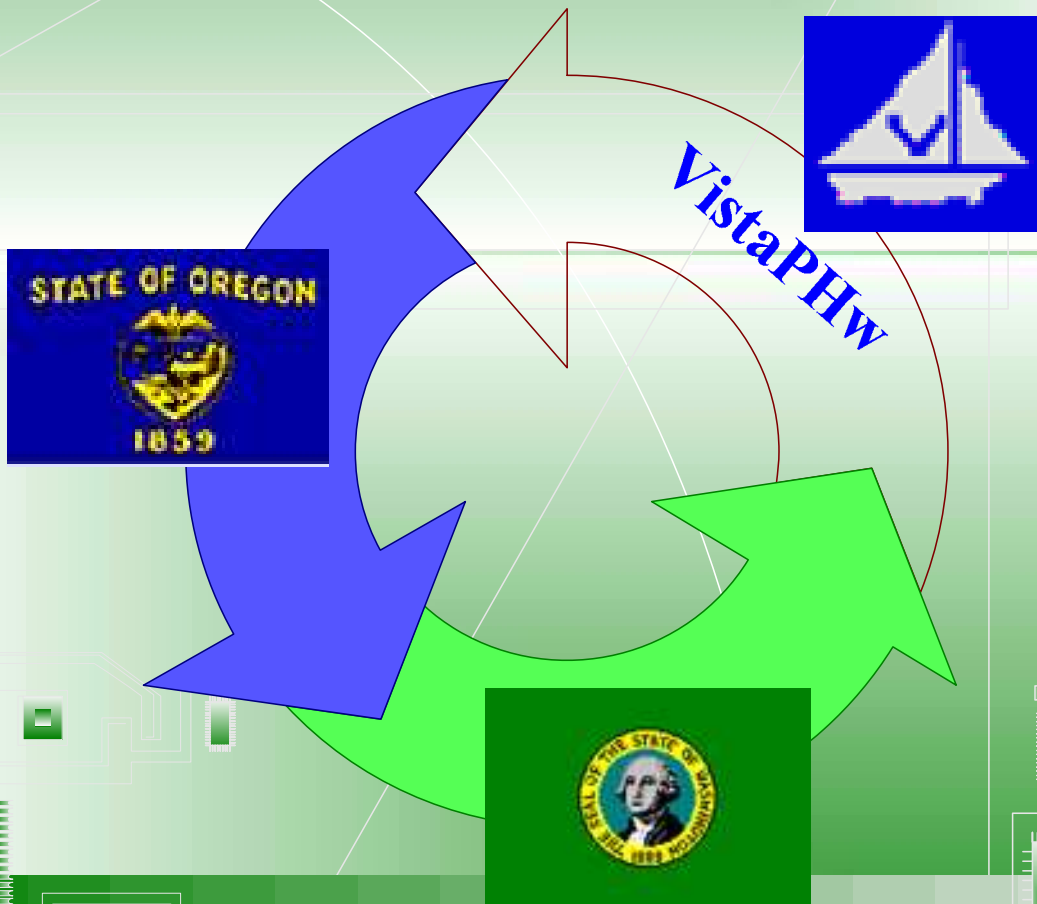


# Evaluation of Technology Transfer (VistaPHw)

between Washington and Oregon



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## VistaPHw Evaluation Team



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## Introduction

VistaPHw is a software that facilitates access and analysis of population-based health data. In Washington State, public health agencies at both the state and county levels use VistaPHw to perform a range of functions, including calculating rates of disease, risk factors, births, deaths, infant mortality, and other health information by age, gender, and race. It also performs advanced statistical functions such as confidence intervals and time trends. Collecting, analyzing, and interpreting up-to-date information about populations' health is vital to identifying key health issues and setting local and state prevention initiatives and policy priorities.

VistaPHw was originally developed by Public Health – Seattle & King (PHSKC) and adopted for use by the Washington State Department of Health (WDOH) and local jurisdictions in Washington. In 2002, the Centers for Disease Control and Prevention awarded WDOH an Assessment in Action (AIA) grant, which partially funded the transfer of VistaPHw software to Oregon. WDOH and PHSKC provided Oregon with the software, materials, technical assistance, and a small subsidy from the grant to support the implementation of VistaPHw in Oregon. VistaPHw is now implemented and in use at both the Oregon State Department of Health Services (ODHS) and more than half of Oregon's local health departments (LHDs).

## Methodology

In order to evaluate the transfer of VistaPHw software between the states of Washington and Oregon, Clegg & Associates conducted a series of interviews and focus groups with 19 people. These individuals represented the Washington State Department of Health, Public Health – Seattle & King County, the Oregon State Department of Human Services, Multnomah County, and other local health departments in Oregon. Questions were tailored to address the different roles each department played, but all were asked to reflect on successes and difficulties during the implementation process and the current status of VistaPHw implementation and use. The interviews and focus groups also briefly explored how Oregon and Washington might use VistaPHw in the future and the relationships that they have developed in the process of transferring VistaPHw.

The following people participated in interviews or focus groups. They are referred to in the report as “respondents.”

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## Findings: The Implementation Process

Despite what was generally perceived to be a slow start, respondents described implementation of VistaPHw in Oregon as a success. Respondents emphasized the respect and esteem they held for their counterparts at other departments who contributed to the transfer of software in various roles. VistaPHw respondents in Oregon reported that they found the software to be highly useful in their health assessment and reporting activities.

### *Data and Analysis before VistaPHw*

With the exception of Multnomah County, which adopted VistaPHw before the software was transferred between Washington and Oregon, none of the Oregon LHDs had an information source that was targeted, up to date, and easy to use before the implementation of VistaPHw. “It was awful. We didn’t have anything,” said one respondent. LHDs employed a range of approaches, including vital statistics publications distributed by the state, but found that their information became dated and could not provide them with all of the information that they wanted about subpopulations within their county. Other respondents at the state and local levels used Excel, Access, SPSS, or SAS, which they described as difficult and time-consuming processes that could not quickly perform all of the analyses they desired, such as age adjustment. For example, one respondent reported that, “Previously, I was using Excel [for age-adjusted death rates for multiple years] and it was hell.”

### *Implementation Process*

Respondents noted a wide range of factors that both helped and hindered the implementation of VistaPHw in Oregon. Many respondents described a key group of individuals who felt strongly that VistaPHw would be valuable in their work and remained committed to implementing the software despite initial setbacks. Within ODHS, different groups played a role in moving the project forward. For example, during the early phases of implementation, the Center for Health Statistics was a strong advocate for VistaPHw implementation. “They kept the project alive,” in one person’s words.

### *Staffing and Relationships*

As Washington initiated the VistaPHw transfer and approached Oregon as part of a grant opportunity, the states were forced to develop relationships quickly. Many respondents felt that more time for planning would have been helpful. The short turnaround time in planning may have contributed to differences in expectations and lack of clear agreement about the states’ different roles. For example, particularly early in the process, some respondents felt that Oregon expected more inclusion in planning and decision-making and that Washington wanted to see more measurable progress.

Turnover, tight budgets, and reorganization also created obstacles at ODHS and WDOH, making coordination and relationship-building a struggle early in the process. However, most respondents felt that relationships and communication improved significantly over time and were now stable and productive. Respondents also noted that the Washington VistaPHw Advisory Group was a useful body, providing a sounding board as Oregon and Washington developed next steps. They were “a steering committee that truly steered,” in one person’s words.

Nearly all respondents pointed to the hiring of Nita Heimann at ODHS, approximately two years into implementation, as key to the project’s success. People explained that this was due in part to the knowledge she brought to the position as a previous VistaPHw user, as well as the focus and coordination she provided as a staff person dedicated to VistaPHw work in Oregon and as facilitator of Oregon’s steering group. Many pointed to the lack of dedicated technical and coordinating staff at ODHS earlier in the process as a difficulty during implementation.

### ***Communication***

As the implementation of VistaPHw in Oregon involved multiple parties, good communication was essential. While respondents rated the quality of communication as high overall, a key theme that emerged in conversations was the difficulty in relying on communication by phone, rather than on-site and in-person visits, particularly as turnover and reorganization made it at times hard to understand the various roles of the people involved. However, despite general agreement that dependence on phone conversations was not ideal, Washington and Oregon state regulations concerning out-of-state travel made it difficult to arrange in-person meetings between the states.

An early difficulty in communication that the departments were able to overcome concerned upgrades to VistaPHw. Respondents at ODHS and LHDs noted that “Vista[PHw] was not just a Washington tool anymore,” but that during the early phases of the transfer the impact of upgrades on VistaPHw users in Oregon was not consistently considered. However, over time, the upgrade process became smoother and documentation improved dramatically. ODHS respondents particularly commended responsive staff at PHSKC for this improvement.

Communication across state lines was occasionally confusing. Some PHSKC staff reported not always knowing whether they should contact ODHS or Multnomah County about an issue, while Multnomah County similarly reported not always being clear about the different roles of PHSKC and WDOH in the transfer of technology to Oregon. Over time ODHS became the main channel for communication between Oregon VistaPHw users and WDOH and PHSKC.

Communication between ODHS and both PHSKC and WDOH was generally effective. However, some ODHS respondents felt that initiating contact generally fell to Oregon and expressed a desire that both PHSKC and WDOH had been more proactive in checking in on Oregon’s progress, although the departments were fairly responsive once contacted. While some respondents in Oregon considered PHSKC and WDOH to be quite responsive, other Oregon VistaPHw users felt that it was sometimes hard to get the changes that they needed made. In one user’s words, “I’ve tried to get things changed in Vista[PHw], such as anemia. I haven’t been able to get it changed.”

Despite obstacles, many respondents noted that a general sense of goodwill and mutual respect overcame them. For example, while it took time to rebuild relationships following reorganization, staff were able and willing to bring people up to speed.



### ***Communication within Oregon***

Communication between ODHS and LHDs encountered fewer barriers. LHDs reported that they generally found their contact at ODHS to be responsive and helpful. However, some respondents pointed to gaps in timing between the original display of VistaPHw at a conference of local health officials, where interest was successfully piqued, and follow up, which suffered in large part from staff turnover. Respondents noted that successful implementation of VistaPHw over time at LHDs in Oregon depends on finding “local champions” who have the time and skills to advocate that their departments adopt VistaPHw.

Multnomah County and ODHS communicated well throughout the implementation of VistaPHw in Oregon, although the lack of a File Transfer Protocol (FTP) site to share data posed issues for sharing data. However, the transfer of software to Oregon created some disruptions in communication between Multnomah County and PHSKC at times, as information about updates that previously went to Multnomah County began to go to the state instead. The situation was ironed out over time and ODHS staff have been effective in building good communication about changes in both directions.

Within ODHS, there was a gap in communication between the implementation group and direct VistaPHw users. From some users’ perspectives, VistaPHw appeared rather abruptly and its use spread by word of mouth. Awareness of its potential uses was regarded as still spotty, due in large part to infrequent communication across program areas among state researchers. However, many state respondents noted that they were pleasantly surprised by the usefulness and ease of use of the software for their research and analysis. “Vista[PHw] is more robust than I expected. I like the flexibility in it; for perinatal data, I can create the different age categories I need for reporting,” explained one user.

### ***Software Design***

The design of the VistaPHw software proved at times to be both helpful and difficult during the transfer process. The fact that VistaPHw was not a pure web application was helpful in protecting confidentiality, allowing for custom uses, and making it possible for local VistaPHw users to pair their own data with state information. However, downloading the program led to firewall issues for some LHDs, although others encountered no problems at all.

More than one LHD referred to the difficulty of convincing their IT staff of the importance of VistaPHw software, particularly as a non-Microsoft program. “Our IT folks like to make all the software decisions,” noted one respondent, but it was more often management or analysts that championed VistaPHw implementation in their counties.

### ***Converting VistaPHw for Use in Oregon***

Community health assessment and data collection varies significantly from state to state. Some respondents at ODHS and WDOH felt they did not fully realize how many changes to the software, data,

and its uses would be needed. “People always expect it to be super-easy and it never is that easy,” noted one person. Staff at ODHS noted that supporting materials on how to prepare the data to meet Oregon’s needs would have been helpful.

Some of the more difficult challenges during implementation concerned changing the software to accommodate the differences in data in Oregon and Washington. For example, several respondents noted challenges with birth certificate data. Washington modified its birth records to meet revised federal standards before changes were made in Oregon. Making VistaPHw work for Oregon’s birth certificate data became challenging as VistaPHw was structured for the birth records used in Washington.

Multnomah County played a key role in bridging the differences between Oregon and Washington, and respondents perceived the county as critical to the successful transfer of VistaPHw to Oregon. Their data preparation for Oregon was “huge.” Having adopted VistaPHw before Oregon as a whole, they “did the upfront work that had to be done,” stated one respondent. While cooperation between Multnomah County and ODHS was strong overall, respondents noted that the delay in developing a cooperative agreement to reimburse Multnomah County for time spent was a hindrance.

### ***Training and Technical Assistance***

The transfer of VistaPHw technology included two different sets of training and technical assistance relationships. PHSKC and WDOH provided training and technical assistance to ODHS as Oregon implemented VistaPHw at the state level. This included assistance with activating the application on Oregon’s servers and installing data, for example. ODHS then provided training and technical assistance to LHDs during implementation of VistaPHw at the county level. This included user assistance and training.

A key issue at both the state and county levels was on-site training and support. LHDs that received on-site staff training described the training as critical. Respondents noted that an additional .5 FTE (full time equivalent) at ODHS would help to support LHDs, particularly in providing more on-site training. In addition, when thinking back on the process, ODHS staff concluded that an on-site visit from WDOH or PHSKC at the beginning of implementation at the state would have saved a great degree of time and frustration. For example, despite assistance with server set up from Multnomah County, PHSKC, and WDOH, ODHS struggled for over three months to get its system up and running. While this was due in part to limited staff time to dedicate to the project, IT staff felt that a site visit would have been extremely helpful.

WDOH, PHSKC, and ODHS respondents spoke quite positively about the use of e-learning modules and felt that they offered an effective strategy to replicate in helping distant communities adopt new software. However, respondents at LHDs were divided in their assessments of the modules. While some found them useful, others found them difficult to navigate. For example, one respondent noted that many VistaPHw users did not have a PowerPoint viewer program, which made them unable to use the links.

Technical assistance from PHSKC and WDOH was rated highly by respondents at both ODHS and LHDs. They found the information they received to be on target and timely.



### ***Required Resources***

As one respondent noted, “Time is always a resource.” In-kind time contributions were most commonly noted as a cost of implementation.

WDOH contributed staff time and funding through the grant. Approximately \$30,000 per year from the grant was allocated to partially subsidize ODHS’s costs, as well as a smaller sum to PHSKC for their time investment.

ODHS respondents estimated costs of about \$70,000 in direct staff time and allocation of an in-kind server. “It takes a lot more than we originally thought,” noted one person. For ODHS, modifications to VistaPHw required time to update their server, as well as time spent by IT staff on both implementation and training. ODHS respondents estimated that implementation required approximately 20 percent of an IT FTE at the beginning of the process, but the time commitment decreased to closer to five percent currently. VistaPHw continues to require coordination time of approximately 30 to 50 percent of an FTE.

PHSKC noted that they tried to keep ODHS’s costs down when selecting supporting programs for VistaPHw. For example, PHSKC used free rather than fee-required mapping programs. Multnomah County’s assistance in preparing the data also helped reduce costs. Training and technical assistance required time from PHSKC. Though time expended varied over the time during implementation in Oregon, after the initial set-up, PHSKC respondents estimated that they spent perhaps two to three hours per week for data support and training on using and modifying the data for Oregon’s purposes.

LHDs reported relatively low costs. They received the VistaPHw software at no cost, which meant that the main resources they dedicated were the time spent arranging the transfer between local and state IT staff and time spent learning how to use the program. The amount of time needed to learn VistaPHw varied considerably depending on staff’s skill level, but despite a learning curve for some VistaPHw users, LHDs reported that the time saved by using the tool rather than doing calculations by hand more than offset the time spent getting up to speed. However, while the LHDs that were interviewed had sufficiently up-to-date equipment to run VistaPHw, some respondents wondered if other counties might need to upgrade their equipment to implement VistaPHw.

Multnomah County was in a relatively unique position, as it purchased the software from PHSKC before statewide implementation, spending about \$5,000-6,000 on the software and about .5 FTE for data preparation. However, Multnomah County respondents noted that they generally had more available resources than smaller counties to spend on health assessment. “We have the resources and we had a need,” noted one respondent. While Multnomah County contributed significant time in communication and training at the beginning of the transfer of VistaPHw to Oregon, time expended currently is small.

## Findings: Current Use in Oregon

ODHS and LHDs report that VistaPHw is fully installed and operational. The installation was complete by mid-2004. However, ODHS respondents caution that it is running “on the cheap,” with a converted desktop and server, and is still growing with continuing additions to data, functionality, and users.

Respondents at the state and county levels in Oregon use VistaPHw in a number of ways and commend its flexibility and multiple possible uses. In one person’s words, “You can look at the data one way, look at it another way and it doesn’t take half a day.” Respondents noted that the software makes it quick and easy to respond to data requests and to produce assessment reports, two of the more common uses for the software. As one respondent noted, “It takes more time to get the details of a special data request and the email to send the results, than to run the request in VistaPHw.” However, as one respondent noted, not all data requests can be fulfilled with VistaPHw, as some data are not included in the program.

While data continues to be added, the data in VistaPHw are fully functional. Respondents particularly noted their use of data on infant mortality, leading causes of death, and communicable diseases. They also expressed eagerness to use the Oregon data that will soon be available on sexually transmitted diseases and hospitalization.

VistaPHw is used regularly for Oregon counties’ required public health planning processes and this provided a powerful incentive for adopting VistaPHw at many of the interviewed LHDs. They have found it particularly useful in examining population trends over time, including linking ethnicity, disease, and birth rates. Some LHDs have also found VistaPHw to be useful in building their community’s interest in public health and health assessment activities, as they have been able to field and convey more detailed and county-specific information to the public, students, and elected officials.

More than half of Oregon’s LHDs (18 out of 34 LHDs) and a total of 143 people at the state and county levels are using VistaPHw. Awareness of VistaPHw’s potential uses continues to grow. While current VistaPHw users are often unabashedly excited about the software, word has not yet spread across all program lines at ODHS and to some LHDs due in part to lack of training opportunities, varying levels of technical skills across LHDs, and ingrained patterns of data collection and analysis.

### *Frequency of Use*

A number of respondents at both the state and county levels lamented that VistaPHw was not more frequently used by their staff or by other counties, as they felt it was a particularly useful tool. However, some respondents reported using VistaPHw quite frequently. Estimates ranged considerably between sporadic VistaPHw users whose frequency of use depended on the requests received and high frequency users. The most common response concerning frequency of use was between two to three times per week to two to three times per month.



### ***Impact on Health Assessment Activities***

While VistaPHw did not fundamentally change the way most respondents approached health assessment, the tool made retrieving and manipulating data far easier. For example, time spent producing Multnomah County's health of the county report dropped from approximately nine months to three months with VistaPHw. Respondents also noted that the software's ability to calculate significance helped them assess which trends were meaningful. They found particularly useful the three and five year rolling averages and ability to compare their data to other counties.

### ***Impact on Data Quality***

While implementation of VistaPHw did not directly improve the quality of Oregon's data, it may have created an inadvertent quality check as more people began to use the data and potentially catch more small errors. Respondents also noted that while they might normally worry about data degradation in a system with a large number of users, VistaPHw's read-only format ensures that data are not inadvertently altered.

### ***Impact on VistaPHw Software***

PHSKC enhanced the VistaPHw software during implementation in Oregon, but many of the changes were not directly related to the transfer. Key additions included mapping, charting, and reporting functions.

The transfer of technology did influence the VistaPHw software in some ways as the additional users and new analyses run have raised questions in Washington about both potential uses and how to adjust the system to meet Oregon's needs. Using the VistaPHw software in different ways has also turned up bugs that PHSKC was able to fix, creating a stronger system. In addition, the transfer of VistaPHw spurred the development of e-learning modules.

### ***Impacts for Washington Departments***

Respondents from both WDOH and PHSKC felt that they benefited from the transfer by promoting good public health planning and increasing access to data, as well as more specifically by gaining different perspectives and ideas about the VistaPHw tool. PHSKC felt their development of the tool was validated by its use in other communities. At the same time, they noted that their participation was not profitable and required donated time.

Respondents from WDOH enjoyed the opportunity to see how other state health departments operated and engaged with data systems. The similarities that they found validated their own experiences in Washington. WDOH respondents also emphasized the benefit they perceived in building a partnership,

both for the initial grant, which they were able to secure and leverage, and for potential future opportunities to work together on health assessment tools and data sharing.

### *Impacts for Oregon Departments*

Respondents considered the transfer of VistaPHw to be a success, noting its substantial use at both ODHS and LHDs. WDOH and PHSKC consider Oregon to be using the tool independently at this point, as they are currently fielding few questions from ODHS. The transfer was also successful in keeping costs within reach. While ODHS incurred costs during the transfer, the costs of implementing VistaPHw were considerably less than the resources that would have been required to build a new system.

Respondents noted that implementation has helped build good relationships between LHDs and ODHS working together on data analysis. “Before, we were data-less,” said a respondent from an LHD. While the state successfully collected data without VistaPHw, it was not easily accessible for LHDs to retrieve and use. As more LHDs continue to implement VistaPHw, ODHS is receiving fewer data requests from counties, as some counties are drawing on their own VistaPHw systems, and other counties use the web-based ODHS data. Multnomah County also perceived a benefit from the transfer of software to Oregon, as they gained access to the state’s data to frame their own county data.



## Future Use of VistaPHw and Health Data Systems

The future of VistaPHw in Oregon is in many ways unknown. A key variable is the decision made in 2006 by WDOH's Public Health Assessment Technology Tools (PHATT) Advisory Committee to build a new community health assessment tool for Washington State. It is not yet clear how the new tool will impact Oregon's health assessment technology. While respondents in Oregon indicated a firm commitment to maintaining a health assessment information and analysis program, it remained an open question whether Oregon would partner with Washington in development of the new tool, as well as what that collaboration might look like. There are "lots of questions there – answerable questions, but not without some work," stated one respondent.

This uncertainty has made many respondents uneasy at both the state and county levels. "It's scary," noted one respondent, not knowing how the development of new software for WDOH will impact Oregon, how long PHSKC will continue to operate VistaPHw, and whether OHDS could maintain VistaPHw alone. Respondents in Oregon expressed a lack of clarity about Washington's plans and hoped for a greater level of involvement in planning and developing the new product.

Other respondents were excited about the possibilities raised by WDOH's development of a new tool. They suggested that the tool may have a more intuitive and user-friendly interface and connect with Microsoft Windows Vista® more easily.

Both WDOH and ODHS respondents felt that their work together on VistaPHw implementation had laid a good foundation for partnering on the development of the new tool, but had no clear sense of what the process would entail and their respective roles. PHSKC and ODHS also felt that they had developed good working relationships, and PHSKC respondents indicated interest in partnering with ODHS on VistaPHw in the future.

Many respondents commented that they were taking a "wait and see" approach. For example, Multnomah County continues to run parallel county and state systems until they are confident that ODHS will keep the VistaPHw software.

Funding is a key question and respondents hoped that Oregon can contribute funding to their data systems' costs in the future. Respondents in Oregon suggested that the demonstrated usefulness of the VistaPHw software might make it easier to dedicate resources to community health assessment software in the future.

"I love Vista[PHw] and I don't want it to go away," said one user. Although the future is unknown, respondents strongly indicated their desire to continue using the VistaPHw software as long as it is maintained. "As long as they (PHSKC) keep updating it, we'll keep using it," said one person.

It is unclear what the immediate future will hold, whether ODHS will work with WDOH on the new system or continue with VistaPHw. The development process is expected to take three to five years and it may be challenging to keep VistaPHw sustainable while developing the new system, as it incurs a "double cost in the meantime" of running two systems.

Currently all VistaPHw users work within ODHS or at an LHD, but as the user pool for VistaPHw continues to grow in Oregon, decisions will need to be made regarding access for universities, where there is not a protocol in place to govern use and sharing of information. A second issue that may require attention is confidentiality at smaller LHDs, which can have low counts in categories that risk making individual information identifiable. Data may also be increasingly shared across state lines, as ODHS is currently working on a data use agreement to allow access to Oregon data in VistaPHw by public health entities in Washington State.



## Lessons Learned for Future Technology Transfers

One of the most common reflections was that incorporating more time at the beginning of the project for groundwork would have been helpful to prepare the states for their respective roles, ensure that technological and staff infrastructure were in place, and build leadership buy-in. Many suggestions for future processes concerned the early stages of implementation. While the departments developed good regular communication over time through calls and emails, distance posed a greater challenge during early implementation and, despite restrictions on inter-state travel, may warrant attention in future processes. In addition to in-person communication, dedicated staff could help facilitate early communication and planning.

The successes and challenges that respondents encountered during the VistaPHw transfer led to a number of other suggestions for future processes:

- Respondents recommended more training for various audiences. For example, additional training at the state level could be incorporated as a regular part of orientation for research employees.
- The benefits of e-learning and other long-distance forms of training and technical assistance merit further exploration, as e-learning can help people receive training at lower costs, without traveling. Respondents also wondered whether e-learning might improve learning and retention as users are able to practice skills as they learn them. However, given the importance of in-person meetings that emerged during the VistaPHw transfer, finding a balance in long-distance and in-person communication will be important.
- Respondents suggested that technology transfer processes consider developing automatic feedback loops to help ensure that users in different departments communicate frequently. They noted that this is key to resolving any bugs that are discovered and sharing ideas for new ways to use the software.
- Noting the importance of the expertise, relationships, and the commitment that Nita Heimann brought to Oregon from her previous work in Washington, respondents encouraged future technology transfers to consider loans or exchanges of staff between agencies.
- Respondents encouraged future processes not to underestimate the differences in data elements between states. Even working with data from birth certificates, which are nationally standardized, Oregon and Washington encountered significant differences between the states. Transferring technology will require flexible software and the ability to deal with variations in data sets and infrastructure.
- Respondents also encouraged participants in future technology transfers to pay attention to documentation. It takes considerable time and resources to maintain up to date documentation as changes are made. However, documentation may be an area for collaboration as agencies working with technology that they are not familiar may be more likely to note discrepancies in documentation.

## Conclusion

The VistaPHw technology transfer has resulted in the expanded use of health assessment data in the state of Oregon. Programs and staff at the state and county levels are actively using VistaPHw to support their health assessment activities, respond to public requests for data, and carry out additional data analysis functions. In addition, the pool of VistaPHw users continues to grow. With this growth, more agencies across Oregon will be able to access information specific to their communities and to more easily perform sophisticated health-related analyses.

Washington has also benefited from the transfer as the experience has helped to create a loop of feedback and improvement between multiple agencies. The changes in the software made to accommodate Oregon's data have created a more flexible product. Feedback and dialogue between WDOH, ODHS, and PHSKC has contributed ideas about potential uses.

As Washington moves forward in its development of new health assessment technology, staff at ODHS, WDOH, and PHSKC can build upon the partnerships forged during the VistaPHw transfer process. Respondents' emphasis on the importance of communication points to the need for early and regular dialogue among all parties about future plans and further opportunities for collaboration around health assessment data systems.

