



College
OF THE
Siskiyous

Community Health Education and Health Workforce Training in Siskiyou County: A Research Report

Building Better Communities through
Regional Economic Development



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Rural Health Sciences Institute

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BACKGROUND

In November 2005, voters in Siskiyou County overwhelmingly approved a \$31.4 million bond for new construction at College of the Siskiyous (COS), the only institute of higher learning widespread Siskiyou County. One of the top priorities for bond-funded projects was the construction of a Rural Health Sciences Institute at the College's Yreka Campus. The Rural Health Sciences Institute (RHSI) is an \$8.8 million building designed to take advantage of the latest e-learning technology, including state-of-the-art videoconferencing.

The RHSI is scheduled to open in August, 2009. In addition to offering expanded nursing and allied health programs through traditional community college curriculum, COS leaders are exploring ways to use the RHSI to stimulate economic development within Siskiyou County. The College received a grant from the Wal-Mart Foundation as part of the *Wal-Mart Workforce Economic Opportunity Initiative*, co-sponsored by the American Association of Community Colleges. COS is one of 20 community colleges in the country who are participating in this grant program. The COS project is called, "Building Better Communities through Regional Economic Development."

The grant funds enabled College of the Siskiyous to complete a research study determining what types of external classes and programs should be offered to the Siskiyou County community in general, and rural healthcare employees specifically. The research study, summarized in this report, consisted of an environmental scan that summarizes existing data about Siskiyou County, its healthcare workforce, and the field of continuing education. The study also sponsored two surveys: a Community Survey completed by 666 Siskiyou County residents, and a Rural Healthcare Worker Survey, completed by 163 individuals who are employed by local healthcare organizations such as hospitals and doctors' offices.

EXECUTIVE SUMMARY

SUMMARY OF ENVIRONMENTAL SCAN

The rural nature of Siskiyou County provides abundant resources that contribute positively to the economic well-being of the County. Businesses that focus on outdoor recreation and tourism are a major part of the employer mix, as is government employment at the local, state and federal level. As with most rural counties, the population of Siskiyou County is older and less affluent than residents in other parts of the state.

COS is the only community college and the only postsecondary institution in Siskiyou County. The College has invested in an extensive distance learning network, installing videoconferencing capabilities in nine community locations, as well as several classrooms at its Weed and Yreka Campuses. As a result, Siskiyou County residents can take college-level courses without leaving their communities. The College also offers a variety of community learning courses in-person and online through a partnership with [Ed2Go](#).

Healthcare is one of the largest employment sectors in the County. Two hospitals, Fairchild Medical Center in Yreka (north county) and Mercy Medical Center in Mount Shasta (south county) provide both in-patient and out-patient services. A web of primary care services consisting of non-profit community health centers as well as private physician practices are located throughout major population centers. Healthcare is one of the few employment sectors expected to grow over the next few years.

Most healthcare workers having licenses or certificates must meet annual minimum continuing education (CE) requirements in order to maintain their licenses or certificates. These requirements can be met in a number of ways, including attendance at in-person or videoconferencing courses, taking online classes, or reviewing material on a CD/DVD. There are hundreds of vendors who provide CE courses through in-person seminars, the Internet or CD/DVD. For example, Catholic Healthcare West (CHW) provides its own online CE program available to employees of their facilities, including the CHW hospital, Mercy Medical Center in Mount Shasta.

Distance learning courses offered over the Internet, videoconferencing, or CD/DVD, are becoming an increasingly popular way for rural health providers to access CE courses. In California, the major providers of rural-specific content include the [California State Rural Health Association](#), regional [Area Health Education Centers](#) (AHEC) located in rural communities, [UC Davis School of Medicine](#), the [California Rural Indian Health Board](#) and the [Rural Healthcare Center](#) operated by the California Hospital Association. Across the country, there are a handful of CE programs focusing on rural providers. The challenge with using out-of-state providers is that they may not be approved for CE units by California licensing entities.

The increased utilization of technology in the delivery of healthcare will impact the field of continuing education in California, including rural healthcare providers, in two key ways:

- A significant growth in the number of healthcare providers who install electronic healthcare records is anticipated due to the incentives provided by the American Recovery and Reinvestment Act (ARRA) of 2009.
- Over the next three years, close to 1,000 healthcare providers in California will be connected to each other and to urban medical centers and universities through the new [California Telehealth Network](#) (CTN). CTN will overcome many of the connectivity barriers that have plagued rural healthcare providers throughout California, and will provide a high-speed, secure broadband network that will support both clinical care and educational services.

In considering how to expand both community learning and continuing education offerings to Siskiyou County, COS has a number of existing and potential partnerships to consider as it is developing its programs both inside and outside of Siskiyou County.

KEY FINDINGS FROM THE COMMUNITY SURVEY

The COS Community Survey was designed to provide information that would guide the expansion of the number and type of community classes offered through the RHSI. The survey was distributed via the local newspaper, in schools (with the support of the Family Resource Centers), at Wal-Mart in Yreka, and online. 666 residents representing the major towns in Siskiyou County completed the survey. A summary of the results was reviewed at a community meeting held at seven different sites in the County connected by the COS videoconferencing network, and at a meeting of the Project Advisory Committee. It should be noted that this survey was not designed as a scientific survey, but rather as a descriptive survey to provide information about the opinions of those individuals who chose to participate in the survey.

Key findings from the Community Survey include:

- Almost 75% of the respondents received healthcare information from their healthcare providers. Families and friends were the secondary source of information about healthcare.
- Wellness and healthy lifestyle were topics that respondents looked for most often, followed by information about medications.
- Information about heart conditions, allergies, diabetes and cancer were the highest ranking specific health conditions that respondents wanted information about.
- Respondents preferred to take classes in-person, followed by online and, far fewer, by videoconferencing.
- 452 respondents listed 549 specific class topics in which they were interested. Information about nutrition, including weight management, was the most requested class topic.
- The top two sources for community news and information were friends and family, followed closely by local newspapers. Not surprisingly, use of the Internet as an

information source was higher among younger respondents and use of the local newspaper was higher among older respondents.

- Access to high-speed Internet service varies depending on where respondents live and their age.

The findings from the Community Survey, when analyzed in conjunction with the environmental scan and comments from the community, suggest the following recommendations regarding community education programs that could be developed at the RHSI:

- Become a “local trusted source” for healthcare information
- Develop or distribute community education classes of demonstrated interest to residents
- Expand community service learning opportunities for COS/RHSI students
- Develop a community health resource web portal
- Promote existing videoconferencing capability
- Support regional and local efforts to expand broadband and Internet access

KEY FINDINGS FROM THE RURAL HEALTH WORKFORCE SURVEY

The purpose of the Rural Health Workforce survey was to learn more about how healthcare workers in Siskiyou County meet their continuing education (CE) requirements, what CE topics they are interested in learning more about, and how they prefer to take classes. The survey was distributed by mail and in-person to Siskiyou County healthcare employers. 163 individuals responded.

To supplement the survey data, four key informant interviews were held with representatives from the County’s largest healthcare employers, and a focus group from nine small healthcare employers was held. Similar to the community survey, this assessment process was not designed as a scientific survey, but rather designed to provide information about the opinions of individuals who chose to participate in the survey.

Key findings from the online survey include:

- Almost 75% of the workforce survey respondents receive their CE training at work. Over half of the respondents indicated that they occasionally travel out-of-county for CE training, with Redding and Sacramento being the most mentioned destinations for training.
- Survey respondents indicated that it is the employee, not the employer, who most often pays for the costs of CE.
- Professional societies were the CE source most often cited by respondents followed closely by the Internet. However, almost 60% of younger workers currently use COS as a source for professional education.

- 2/3 of respondents indicated that they anticipate taking some type of training over the next two years, with preparing for a promotion being the most cited reason for training.
- Regardless of their place of employment, Microsoft Windows and Office applications are used by 85% of the respondents on a daily basis. Almost half of healthcare workers use electronic health records at least weekly.
- Conducting online literature searches was the most often cited health information technology (HIT) training desired, followed closely by training in electronic health records and health informatics.

When these findings are analyzed with the responses from the key informant interviews and the focus groups, the following recommendations are suggested for development of continuing education programs at the RHSI:

- Strengthen partnerships between COS and local healthcare employers in order to better understand local needs for training.
- Strengthen relationships with external partners who offer value to Siskiyou County healthcare workers and employers.
- Leverage existing investments and partnerships in health information technology to expand locally available health information technology training opportunities for two key audiences: new HIT workers and existing healthcare workers who require HIT training.
- Create synergy between community health education efforts and professional education programs in order to improve community health.

Leverage the convergence of Siskiyou County's natural beauty and abundance of alternative and complementary health providers to develop wilderness medicine and holistic healing seminars designed to attract out-of-town students.

OVERVIEW OF REPORT

This report contains four major sections and an Appendix.

1. Section One is an environmental scan which provides an introduction to Siskiyou County and its residents, provides an overview of the field of rural health workforce education which will impact COS and the RHSI, and identifies resources and partners available to assist COS in the development of external programs for the RHSI.
2. Section Two provides a summary of a Community Survey completed by 666 residents in Siskiyou County identifying what kinds of community programs they would like to see the RHSI offer.
3. Section Three summarizes data about the local healthcare workforce and their need for continuing education.
4. Section Four provides conclusions and recommendations for the next steps in developing of external programs for RHSI.

The findings from this report will be used to complete a business plan that will guide the development of specific community and professional education programs for the RHSI. The RHSI opened in August, 2009, with the first external programs to begin in 2010.

APPENDICES

The Appendix provides the following detailed data and charts:

- Appendix A – Summary of Siskiyou County Demographics
- Appendix B – Community Survey Results
- Appendix C – Healthcare Worker Survey Results
- Appendix D – List of Professional Education Classes Requested by Healthcare Workers

SECTION ONE – ENVIRONMENTAL SCAN

SISKIYOU COUNTY DEMOGRAPHICS

Siskiyou County, California, is rural, expansive, mountainous and extremely isolated. Approximately 47,500 citizens live across the County's 6,347 square miles, a density of about 7.5 persons per square mile. However, about 10,500 of those people live in the two cities of Yreka and Weed, making the density of the rest of the County less than 6 persons per square mile. Vast tracts of the County are forest, desert, mountains or chaparral with very little human habitation.¹²



Siskiyou County is located far from major urban centers. The city of Medford, Oregon, population 72,000, is about an hour north of the County Seat of Yreka. Redding, California, population 90,000, is about the same distance south from Weed. The largest city close to Yreka is Sacramento, nearly a 4 hour drive to the south. All of these cities are considerably farther away from the isolated communities in the eastern county.

¹ Siskiyou County Economic Development Council, *Siskiyou County Demographics*, January 7, 2008. <http://siskiyoucounty.org/data/Siskiyou-County-Demographics.pdf>

² (Map) Speranza Avram & Associates, modified from original at Google Maps

Driving Times & Distances to Yreka (no weather or other delays)

City	Driving Distance (one-way)	Driving Time
Somes Bar	114 miles	2 hrs, 49 minutes
Tulelake	106 miles	2 hrs, 6 minutes
Dorris	79 miles	1 hr, 23 minutes
Happy Camp	75 miles	1 hr, 48 minutes
McCloud	48 miles	50 minutes
Dunsmuir	45 miles	44 minutes
Mt. Shasta City	36 miles	33 minutes
Etna	29 miles	40 minutes
Weed	28 miles	27 minutes
Fort Jones	17 miles	25 minutes
Montague	6 miles	14 minutes
Reno, NV	252 miles	5 hrs, 28 minutes
Sacramento	257 miles	3 hrs, 55 minutes
Medford, OR	51 miles	55 minutes

Travel within Siskiyou County can be daunting. A trip from Yreka to the northeastern town of Tulelake takes over two hours, but can be much slower, more difficult, or even impossible during winter storms. Travel between local communities for such needs as healthcare or educational opportunities can present serious issues. Many of the small communities in the County are separated by winding, two-lane highways that can be covered with ice or snow in the winter.

These rural and frontier characteristics are not just challenges, they are also Siskiyou County’s greatest resource. The County is a mecca for hiking, climbing, winter sports (which may extend into the summer on world famous Mount Shasta, elevation 14,179 ft.), hunting and fishing, rafting and kayaking. Farms and ranches thrive in Siskiyou County. More than 60% of the County’s land is managed by the State or Federal governments for recreation, resource development and environmental protection.³

³ County of Siskiyou. <http://www.co.siskiyou.ca.us/>

Siskiyou County is growing older along with the rest of California and the nation, with 18% of the population over 65 compared with 11% statewide. The County is far less diverse than the rest of California, with 87% Caucasian and 4% American Indian. Hispanics of comprise 7.6% of the population. Two-thirds of County residents own their own homes, 84% graduated from high school, and 18% hold at least a Bachelor's Degree. Of the adult population, 18% are Veterans. Of the population 5 years of age and over, 22% are receiving some form of disability assistance. The median household income in 2005 was \$35,039 compared to the statewide average of \$53,627. In 2005, 17.5% of the County was below the U.S. Census Bureau poverty level, about 31% higher than the statewide rate of 13.3%.⁴ A summary of Siskiyou County demographics is attached as Appendix A.

SISKIYOU COUNTY HEALTH STATUS

Due in part to the number of seniors living in Siskiyou County, and consistent with community health issues that exist in many rural counties in California, the health status of Siskiyou County residents shows the following major characteristics⁵:

- Higher death rates overall than the death rate statewide
- Higher death rates from cancer, chronic lower respiratory disease, chronic liver disease and cirrhosis, accidents, motor vehicle crashes, suicide, and firearm-related deaths
- Siskiyou County is close to, or below, the state age-adjusted death rate for deaths caused by diabetes, Alzheimer's disease, coronary heart disease, stroke, and influenza/pneumonia
- Infant mortality is worse than the state average, but the County is close to the state average for low-birth weight babies and teen births

According to Community Health Plan of the Siskiyous, one in four (27%) of Siskiyou County adults between the ages of 18 and 64 do not have health insurance of any kind, higher than the state average of 20.2% in 2007.⁶

⁴ Siskiyou County Economic Development Council, *Siskiyou County Demographics*, January 7, 2008. <http://siskiyoucounty.org/data/Siskiyou-County-Demographics.pdf>

⁵ County Health Status Profiles 2009, California Department of Public Health, <http://ww2.cdph.ca.gov/pubsforms/Pubs/OHIRProfiles2009.pdf>

⁶ "Number of Uninsured Residents Increasing, Report Finds" California Health Line, December 23, 2008, California HealthCare Foundation <http://www.californiahealthline.org/Articles/2008/12/23/Number-of-Uninsured-Residents-Increasing-Report-Finds.aspx>

COMMUNITY SERVICES INFRASTRUCTURE

Siskiyou County has a robust and collaborative community service infrastructure, including ten Family Resource Centers located in communities throughout the County. Community organizations work together through the Community Service Council which facilitates monthly meetings among the County's community service organizations to promote collaboration. A local wellness coalition, the Siskiyou County Health Partnership offers a vehicle for local organizations to work together to promote health and well-being.

EMPLOYMENT DATA

In 2007, there were 3,019 employers in Siskiyou County. Of those, 2,230 employers, more than two-thirds were small businesses and organizations with four or fewer employees. 2,973 employers, or 98%, had fewer than 50 employees. By far the largest sector is Services, which includes a wide variety of businesses providing hospitality, amusement, repair, engineering, legal, healthcare and education. (Government agencies are not included in this sector.) Within the Services sector, the largest (in 2005 data) was Healthcare and Social Assistance. Of the total 5,933 people employed in Services, 2,216 (37%) were employed in Healthcare and Social Assistance. This reflects the need for services from the large percentage of elderly citizens, veterans, and people on disability assistance who live in the County.⁷

The recent economic downturn has resulted in increased unemployment rate in Siskiyou County. In 2008, the unemployment rate in Siskiyou County was 10.2%, compared to 7.2% statewide. In April 2009, Siskiyou County's unemployment rate increased to 15.7%, compared to 10.9% unemployment rate statewide.⁸

The largest healthcare employers in Siskiyou County are two hospitals located at either end of the County: Mercy Mount Shasta, located in the City of Mount Shasta (south county) and Fairchild Medical Center, located in Yreka (north county). Combined, these two facilities and their associated out-patient sites, employ over 700 employees. Other large healthcare employers in Siskiyou County include Madrone Hospice (50 employees), and the County Public Health system (800 total employees). There are six community health centers and rural health clinics in the County who provide primary care services to all patients, regardless of health insurance status. In addition to these large healthcare employers, there are 90 private physician offices that collectively employ approximately 300 staff.

As in many rural counties, there are very few specialty care providers. Many patients have to leave the community and travel to urban centers such as Medford, Klamath Falls, Redding or

⁷ Center for Economic Development, CSU Chico, Siskiyou County 2008 Economic & Demographic Profile.

⁸ Monthly Labor Force Data for Counties, State of California Economic Development Department Labor Market Information Division, April 2009.

Sacramento to receive specialty services not available locally. Some providers are beginning to use telemedicine to connect patients to urban specialists via videoconferencing technology.

Most of the healthcare employees working in Siskiyou County are either nurses or allied health care professionals, defined as healthcare workers who assist with the identification, prevention and treatment of diseases and disorders. Unlike healthcare providers such as doctors, dentists, nurse practitioners and physician assistants who must receive most of their education and training outside of Siskiyou County, opportunities exist for nurses and allied health professionals to receiving training locally, either at COS or online through enrollment at other community colleges.

Employment data about nurses and allied health workers is collected regionally. In a recent report on allied health careers prepared by the North/Far North Region Center of Excellence and Regional Health Occupations Resource Center, Siskiyou County is shown as part of the Northern Inland Region consisting of Butte, Colusa, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama and Trinity Counties. **Below are three key findings from this report that are relevant to the RHSI:**⁹

1. In 2007, 26,497 nurses and allied health workers were employed in healthcare for the Northern Inland Region. Between 2002 and 2007, the healthcare industry in Northern California grew by 15%, twice as fast the state economy overall.
2. Over the next ten years, nurses and allied health workers are projected to grow by 20% in the Northern Inland Region, adding over 5,400 workers. Short-term growth is more modest, with Northern Inland employers anticipating adding less than 1% new workers due most likely to the economic downturn.
3. The allied healthcare occupation areas identified as requiring the largest number of replacement employees over the next ten years are: diagnostic medical sonographers, medical and clinical laboratory technicians and technologists, medical assistants, medical records and health information technicians, pharmacy technicians, radiologic technologists and technicians, registered nurses, respiratory therapists, and surgical technologists. In the Northern Inland Region that includes Siskiyou County, employers project that they will be adding 440 positions due to staff replacements and service growth.

The projected growth in healthcare employment is confirmed by another recent regional economic development study commissioned by the Humboldt County Workforce Investment Board which provides employment projections for five north coast counties, including Siskiyou:

⁹ *"Careers in Allied Health – Northern Inland Region, Key Findings 2009"*, Centers of Excellent, Economic and Workforce Development, California Community Colleges, http://www.coecc.net/health/documents/KF_AH_NI_09.pdf

Diversified Healthcare is the largest of the targets of opportunity, in 2004 employing 10,286 in the five county region. It has added jobs at more than five times the rate (45%) as the region as a whole (8%) over the 1990-2004 period. It pays an average wage that is 20% higher than the regional average of \$28,142. Real wages also grew at a much faster rate (26%) than the regional average of 6%. Moreover, the number of firms in Diversified Healthcare increased by 34% between 1990 and 2003, far beyond the region's growth rate of 1.5%.¹⁰

There are four key factors driving the growth in healthcare service employment – population growth, the aging population, the aging healthcare workforce, and legislative policy. These factors impact Siskiyou County as follows:

1. Between 2000 and 2010, Siskiyou County will add 2,475 residents, a growth rate of 6%, compared to a 15% growth rate for California overall. Between 2010 and 2020, the County is projected to add an additional 4,174 residents, a growth rate of 9%, compared to 13% statewide. Note that the state's growth rate is projected to decrease, while Siskiyou County's growth rate is expected to increase.¹¹ These new residents will require growth in all types of services, including healthcare.
2. As noted above, Siskiyou County has a higher percentage of seniors than the rest of the state (18% compared to 11%). Projections indicate that by 2020 over 10,200 residents in Siskiyou County will be over 65, representing 20% of the total population.¹² Because seniors have more health issues than younger residents, and because life spans are increasing, the demand for health services in Siskiyou County will continue to increase.
3. The aging of California's population is reflected in the aging of California's healthcare workforce. For example, according to the Bureau of Registered Nurses, over 75% of the state's registered nurses are age 40 or older and almost half are age 50 and older, with the average age being just over 47 years - five years higher than the national average. In Northern California, allied health employers estimate that 5.1% of their current employees will retire in the next three years.¹³ The opening of the RHSI will help meet this demand for trained allied healthcare workers.
4. State healthcare policy impacts Siskiyou County in two key ways. First, it can impact how many employees are needed in a given field to meet state requirements. For

¹⁰ ***Targets of Opportunity: The North Coast – Del Norte, Humboldt, Mendocino, Siskiyou and Trinity.*** Collaborative Economics, Mountain View, CA, Commissioned by Humboldt County Workforce Investment Board, February 22, 2007, <http://www.humboldt看wib.com/Targets%2520FINAL%2520report%25202.16.07.pdf>

¹¹ **State of California Department of Finance County Population Projections, 2007.**

¹² **Ibid.**

¹³ ***"Careers in Allied Health – Northern Inland Region, Key Findings 2009"***, Centers of Excellent, Economic and Workforce Development, California Community Colleges, http://www.coecc.net/health/documents/KF_AH_NI_09.pdf

example, the change in nurse staffing ratios in 2004 requiring all hospitals, regardless of size, to ensure a fixed number of nurses per patient were available for all shifts increased the demand for nurses in Siskiyou County, as well as around the state. Secondly, state regulations can change training requirements for a given profession, making it easier (or harder) to obtain training for a specific field. For example, recent changes to how medical laboratory technicians are trained now make it possible for students to be trained at community colleges. As a result, more students are able to obtain training and enter this field which is currently experiencing severe employee shortages.

RURAL HEALTH SYSTEM CHARACTERISTICS

Healthcare delivery systems in rural communities across the country, including Siskiyou County, have similar characteristics, recently summarized succinctly in a new federal report on rural health in America called *Hard Times in the Heartland*¹⁴:

- They have fewer resources of all kinds to support the full range of healthcare delivery services, particularly in the areas of specialty care services, mental health services, and high-level trauma care. The healthcare system is one based on primary care services, with advanced services usually provided outside of the rural communities.
- Persistent shortages of healthcare providers make it difficult both to sustain services and expand them. Most of Siskiyou County has federally designated provider shortage areas for primary care, mental health, and dental health.¹⁵ A number of factors contribute to chronic provider shortages, including provider concerns about professional isolation, lack of clinical and education growth opportunities, and a lack of employment options for their families.
- The patient population in rural areas, including Siskiyou County, tends to be older, with more chronic diseases than urban populations in general. In general, populations exhibit poorer health habits, such as increased smoking and lower rates of exercise than their urban counterparts. These lifestyle factors make it more challenging to successfully treat chronic diseases such as diabetes or hypertension.
- The current recession has hit rural communities particularly hard. Rates of poverty in rural communities are higher than in urban areas. Rural economies are dominated by small business owners which often cannot afford health insurance, and, as indicated by the unemployment rates in Siskiyou County, residents in rural communities are losing their jobs faster than in urban areas.

¹⁴ ***"Hard Times in the Heartland – Health Care in Rural America"*, U.S. Department of Health and Human Services, March 2009.**

¹⁵ **California Office of Statewide Healthcare Planning and Development Shortage Area Designation maps: http://www.oshpd.ca.gov/HWDD/Research_Policy_Planning_GIS.html**

As a result of these characteristics, rural health providers face significant challenges in maintaining high quality health services. The seminal report on rural healthcare quality, *Quality Through Collaboration: The Future of Rural Healthcare*, provided five key recommendations for improving and sustaining rural healthcare systems in America¹⁶:

1. Adopt an integrated, prioritized approach to addressing both personal and population health needs at the community level;
2. Establish a stronger quality improvement support structure to assist rural health systems and professionals in acquiring knowledge and tools to improve quality;
3. Enhance the human resource capacity of rural communities, including the education, training, and deployment of healthcare professionals, and the preparedness of rural residents to engage actively in improving their health and healthcare;
4. Monitor rural healthcare systems to ensure that they are financially stable and provide assistance in securing the necessary capital for system redesign; and
5. Invest in building an information and communications technology infrastructure, which has enormous potential to enhance health and healthcare over the coming decades.

RURAL HEALTH WORKFORCE CONTINUING EDUCATION CHALLENGES

Nurses and the majority of allied healthcare workers are required to take on-going continuing education (CE) courses in order to renew their licenses or certifications. Due to a lack of education resources overall, healthcare employees living and working in rural communities can find it challenging to meet their CE requirements through local sources, requiring extensive and expensive travel out of the county, or going long distances within the county.

There is a high cost when healthcare employees leave their rural communities. In addition to out-of-pocket travel expenses for gas, hotel, and meals, there is the loss of productivity incurred when an employee spends hours traveling. There is also a difficult to quantify – but very real – burden on an employee’s family when he or she is out-of-town for long periods of time.

In addition to the cost of out-of-county training, rural healthcare providers report that the content of courses in urban areas often do not meet their needs. In a recent focus group in Fresno sponsored by the California State Rural Health Association, rural healthcare providers reported that there was not enough rural-specific CE training available in California. This is important because scarcity of healthcare resources often determines treatment modalities that differ from those in urban communities with more treatment options.

¹⁶ ***Quality Through Collaboration: The Future of Rural Health Care*, Committee on the Future of Rural Health Care, Board on Health Care Services, *Institute of Medicine of the National Academies*, The National Academies Press, Washington, D.C. 2005.**

Distance learning, via the Internet or videoconferencing, offers a cost-effective alternative for the delivery of training and education to both urban and rural healthcare workers. In a recent online survey completed by 104 healthcare professionals working in both urban and rural clinics and safety-net hospitals in California, 80% used technology in some way to receive education and training.¹⁷ The Internet was used more often than videoconferencing as a modality for delivering content, primarily because it facilitates “just-in-time” learning and can be accessed at any location with a computer and an Internet connection. Yet as demonstrated by a recent report on statewide broadband access, large sections of Siskiyou County, and other parts of the rural northeastern California, still do not have access to affordable high speed Internet.¹⁸ A number of Siskiyou County organizations help address this broadband shortage by providing free computer and Internet access centers affiliated with libraries and Family Resource Centers.

RURAL HEALTH DISTANCE LEARNING PROVIDER

There is no shortage of online and/or video-based continuing education providers within California. For example, California’s community colleges and state universities all have robust distance learning programs, which can be found by visiting the California Virtual Campus (www.cvc.edu). A recent search of this clearinghouse showed 447 different courses offered online or by video in the Health Professions and Related Sciences Field. Most professional associations and many private vendors offer CE units via distance learning, although most of the content is not developed with rural healthcare providers in mind.

There are a few organizations in California that provide general education programs targeted toward rural healthcare providers, including the California State Rural Health Association, the Area Health Education Centers or AHECs (including the program managed by Northern Sierra Rural Health Network which uses an extensive videoconferencing network to deliver course content from urban medical centers to rural counties, including Siskiyou County), and the California Rural Indian Health Board. The UC Davis School of Medicine has a long history of providing continuing education via distance learning, although its program is geared mostly to physicians. The Rural Healthcare Center affiliated with the California Hospital Association also provides programs of interest specifically to rural healthcare providers.

Outside of California, many states offer robust distance learning programs geared specifically to rural healthcare providers. For example, the Health Training Network headquartered in Spokane, Washington, sponsors *EMS Live@Nite*, a live program utilizing interactive videoconferencing. The program is broadcast monthly to rural and frontier communities in Washington, northeast Oregon, northern Idaho, Montana, the Aleutian Islands and southeast

¹⁷ ***“California Safety-net Provider e-Learning Assessment and Environmental Scan”, Study completed for Funders Fostering Technology for Quality by Speranza Avram and Associates, December 2008.***

¹⁸ ***The State of Connectivity: Building Innovation Through Broadband, Final Report of the California Broadband Task Force, January 2008, <http://www.calink.ca.gov/taskforcereport/>***

Alaska. Participants include Emergency Medical Service (EMS), fire and law enforcement personnel, public health and hospital staff, and other members of the community.

Rocky Mountain Learning, based at the Institute of Rural Health at Idaho State University, provides online courses geared toward rural providers, and consults with organizations to design and deliver online course content that meet their specific needs.

National organizations that provide distance learning targeted specifically for rural healthcare providers include the National Rural Health Association and the Rural Hospital Education Gateway. However, as noted at a recent conference of the National Offices of State Rural Health, there is a lack of distance learning opportunities for allied healthcare professionals¹⁹, although, as noted above, this is does not seem to be the case in California.

¹⁹ ***“Rural Health Workforce Trends – A National Perspective”*** Presentation by Pamela Smith, Massachusetts State Office of Rural Health Region A Regional Meeting, June 24, 2008.

EXPANDING ROLE OF HEALTHCARE INFORMATION TECHNOLOGY

The use of healthcare information technology (HIT) as a tool to not only expand education for healthcare providers, but to improve the quality of healthcare delivered to patients and create more efficiencies in healthcare deliveries will increase exponentially over the next few years. Through recent programs announced as part of the federal government's economic stimulus program, over \$50 billion has been allocated to provide grants, loans, and other incentives to encourage all healthcare providers in both rural and urban areas, to purchase and use HIT such as electronic health records, e-prescribing, telemedicine, and home health monitoring devices. This revolution in healthcare is happening in Siskiyou County as well, with over half of the respondents to the RHSI Healthcare Workforce Survey indicating they use electronic healthcare records in their work.

This growth in healthcare technology investments will fuel a demand for healthcare information technology (HIT) workers at all levels of the industry, from technical support personnel to highly trained health informatics specialists. The President of the American Medical Informatics Association estimates it will take as many as 130,000 information technicians and 70,000 informatics specialists to support the growth of HIT over the next five years.²⁰

California is one of 69 states and regions around the nation participating in a national effort to connect rural health providers to urban medical centers and teaching hospitals. The California Telehealth Network (CTN), coordinated by the University of California Office of the President, will connect close to 1,000 rural and urban health providers. Almost all of Siskiyou County's public and non-profit health providers will be participating in CTN when it is completed.

HEALTHCARE EDUCATION AT COLLEGE OF THE SISKIYOU

College of the Siskiyous is the only institution of higher learning in Siskiyou County with an enrollment of approximately 3,500 students each semester. The College employs 46 full-time faculty and more than 135 support staff. The primary COS campus is located in the south county town of Weed, and a second campus is located 30 miles north in Yreka, the site of the new Rural Health Sciences Institute.

Currently, COS offers college-level courses that train new Certified Nurses Assistants (20 students per semester), Licensed Vocational Nurses (approximately 30 per class; currently one class at a time but COS will expand in the fall to two classes at a time) and offers an LVN to RN Associate of Arts (AA) degree (approximately 24 students per class for 12 months).

In addition, COS has a strong Emergency Response Training Program, educating Emergency Medical Technicians and Paramedics from all over California who come to Weed to train in a new state-of-the-art training facility. There are approximately 100 students per year in the EMT

²⁰ **"Where Will the Mini-Army of Health IT Workers Come from? ", George Lauer, iHealth Beat, Friday, March 13, 2009.**

courses. That program is a partnership with NCTI (National College of Technical Instruction) <http://www.ncti-online.com/>.

The College also offers community education classes both in-person and online. The in-person classes, marketed through Lifelong Learning, cover a variety of topics of interest to the community and are mostly fee-supported. Currently, these community classes do not utilize the COS videoconferencing infrastructure. This could change in the future depending on interest of instructors and the community in using video to expand community learning opportunities. Internet courses are offered through a partnership with EdToGo, an online educational service.

With the RHSI facility in Yreka, the College will expand the number and types of courses it offers in health sciences. Additional courses available through the RHSI are listed in the table below. These occupations are in sync with the demand for employees in categories as outlined in a Community College Allied Health Workforce Report summarized earlier in this report.

Additional Courses Planned for the RHSI	
Registered Nursing (Stand-alone, 2-year AA degree)	Medical Assistant
Phlebotomist	Pharmacy Technician
Mental Health/Social Services Careers	Medical Records/Informatics
Medical Lab Technician	Medical Office Management
Dental Assistant/Hygiene	Medical Imaging Technician

Because of Siskiyou County’s large size and the distance between communities, COS has invested substantial resources into a videoconferencing network that delivers college courses to nine communities in the County. The connectivity for this far-reaching video network is provided by CENIC – the statewide broadband network serving all of California’s public schools, colleges, and universities. In 2007-08, COS delivered 142 courses via distance learning, enrolling 3,179 students. More than 2,031 of these students participated in 90 classes offered through the Internet, while 957 students participated in two-way interactive video classes. Since starting its distance learning program in 2003, COS has seen growth every year in both the number of classes offered and the number of students participating in distance learning.

The opening of the Rural Health Sciences Institute added a great deal of new technology to COS. In addition to expanding the number of classrooms that can be used for distance learning education, the facility has a simulation lab holding six beds. Two of the beds are in rooms that actually simulate a patient's room and have extensive video recording capabilities to capture simulations for review by students at a later date. The other area of the simulation lab is an open ward situation with a variety of simulation devices.

EXTERNAL PARTNERS

COS has a strong history of developing successful partnerships in both the public and private sectors to support its academic programs that can be leveraged as it moves toward expanding its external programs. Existing and new partnerships and programs that could assist COS in developing its external programs at RHSI include:

- [**Regional Health Occupations Resource Center**](#) – The North/Far North RHORC promotes the advancement of Northern California’s health and economic growth through quality education and services focusing on workforce development and continuous workforce improvement in health care delivery. Sponsored by Butte College, the Far North RHORC sponsors educational events, develops new educational programs in response to industry needs, and provides funding for research that supports the region’s educational and healthcare partners.

- [**UC Davis School of Medicine, Sacramento**](#) – UC Davis has two new programs that have the potential to be strong partners with the RHSI. First, the UC Davis Rural PRIME Program will offer an innovative medical education program to medical students seeking to practice in rural communities. Through a combination of community internships and technology, the UC Davis Rural PRIME Program will be able to connect medical students directly with rural communities. In addition, the PRIME program will offer rural providers to serve as teachers and mentors, thus expanding their reach far beyond their local community, including potential partnerships with hospitals in Siskiyou County.

- [**Betty Irene Moore School of Nursing**](#) – Through a \$100 million grant from the Gordon and Betty Moore Foundation, UC Davis will be opening the Betty Irene Moore School of Nursing in Fall 2009. The new school will be directed by Heather Young, Vice-Chancellor of Nursing, a national leader in the fields of gerontology and rural health. Ms. Young is committed to developing formal partnerships with COS that will enable students in Siskiyou County to remain in the community and pursue advanced nursing degrees. A strong partnership with the new school will not only help train new advanced degree nurses for Siskiyou County, but will allow Siskiyou County nurses to obtain continuing education classes.

- [**Oregon Institute of Technology \(OIT\)**](#) – Located just over the border from Siskiyou County, OIT offers the closest option for Siskiyou County students considering a four-year degree. COS and OIT have a long history of collaboration by ensuring that courses offered at COS appropriately prepare students to transfer to OIT. Through the Oregon Center for Health Professions, OIT offers four-year degrees in a variety of careers that directly link back to the proposed course offering at RHSI including Dental Hygiene, Medical Imaging Technology, Respiratory Care and Clinical Lab Sciences. The Center for Health Professions currently does not have an active continuing education program, but is considering opportunities for adding this capability into their mix of programs. They are interested in exploring how to partner with the RHSI to move into this arena. OIT also has a four-year degree program in Health Informatics and they are considering partnering with the community colleges in Oregon to create a statewide Associate Degree program in Informatics that will have a number of courses that will directly transfer into the four-year OIT program. While OIT

currently does not have a Health Informatics certificate program, they are working on adding this capability in the near future. They are also not yet in the HIT continuing education market, but this would not be hard to ramp up, as most of their courses are online and can be modularized.

A unique feature of the OIT Health Informatics Program is the HIT SIM Lab, located in Portland, which offers remote access to a host of back-office and front office HIT applications, including practice management, electronic health records, remote patient monitoring, and personal health records, EDI with claims billing feedback, medical lab interface and connectivity. The EMR and PM product currently being used is GE-Centricity, which is the electronic health record used most predominantly in Siskiyou County by public and private providers.

- [California Center for Rural Policy \(CCRP\)](#) – A program of Humboldt State University in Arcata, CA, CCRP is a research center committed to informing policy, building community, and promoting the health and well-being of rural people and environments. They are the only research program located north of Sacramento. Although their current geographic focus is Humboldt, Del Norte, Trinity, and Mendocino Counties, CCRP has expressed an interest in learning more about partnership opportunities with the RHSI. For example, the RHSI will have far more technology capacity than currently exists at CCRP, which could be used to distribute programs to a broader audience.
- [North State AHEC](#) – The goal of the California Statewide Area Health Education Center (AHEC) is to improve access to and quality of healthcare for medically underserved populations of California using academic-community partnerships for healthcare professions training. The North State AHEC, a program of Shasta Consortium of Community Health Centers, is interested in partnership opportunities with College of the Siskiyous at the Rural Health Sciences Institute. Options for consideration include, but are not limited to:
 - Continuing education for healthcare professionals located at the many rural and community health centers in the nine-county region
 - Rural clinic rotations for healthcare profession students, including nursing and allied healthcare students, as well as those in the UC Davis PRIME Program
 - Pipeline programs for local students introducing and connecting them with vocational opportunities in primary care and allied healthcare professions

SB 70 Programs – The SB 70 programs are career pathway programs reaching back as far as middle school to provide information and experiences to students about the healthcare professions. Also, healthcare occupations concepts are provided contextually in science and math courses from middle school to high school.

SECTION TWO – COMMUNITY SURVEY RESULTS

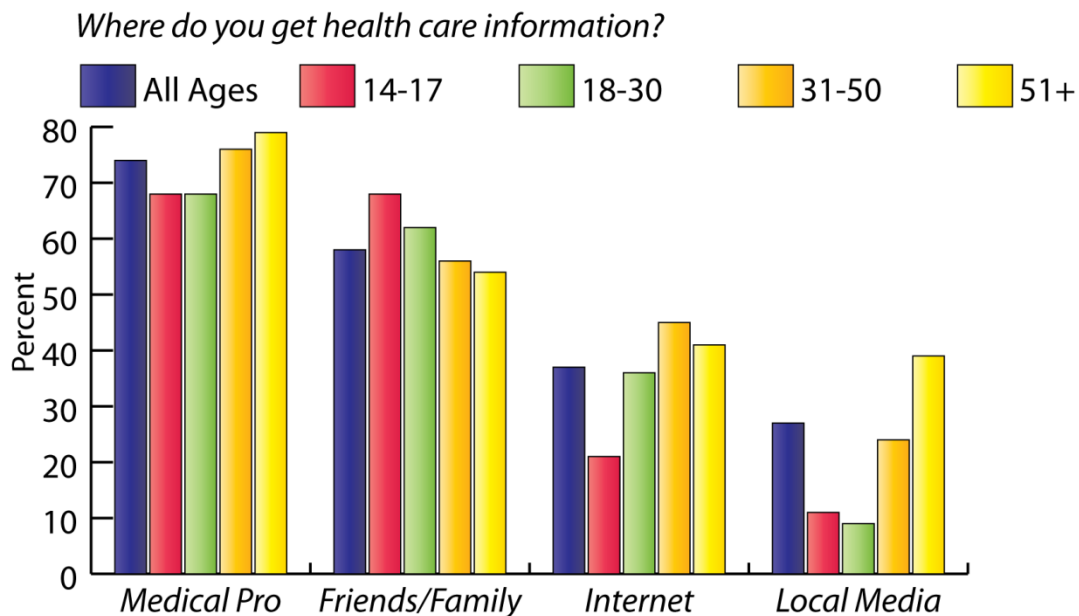
To get a better idea of the types of COS community classes residents in Siskiyou County might be interested in, and to also learn how they preferred to take these classes, COS released a county-wide community survey. The survey was available on the Internet and also distributed on paper via the local newspapers and in schools with the help of the Family Resource Centers. 666 residents completed the survey, an impressive amount that demonstrates the interest that residents have in the RHSI and its programs. Respondents were asked to identify their age group (14-17, 18-30, 31-50, 51+), their ZIP code and their gender.

It should be noted that this survey was not designed as a scientific survey, but as a descriptive survey designed to provide information about the opinions of those individuals who chose to participate in the survey.

A complete summary of the survey results is included as Appendix C to this report. The following are some key findings that can be used to help shape the RHSI community classes.

SOURCE OF HEALTHCARE INFORMATION

- Almost 75% of the respondents received healthcare information from medical professionals. Families and friends were the secondary highest source of information about healthcare at close to 60%. The chart below shows how respondents of different ages receive healthcare information:



A few interesting things stand out about this data:

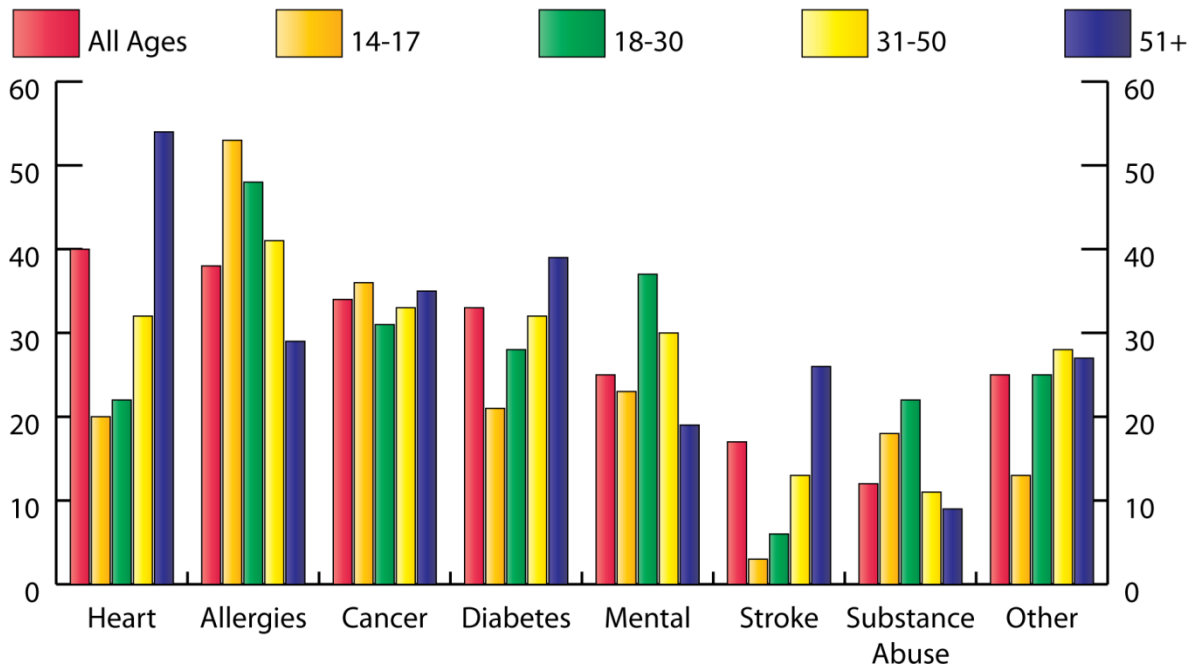
- Regardless of age group, medical professionals and friends and families were the top two sources of healthcare information.
- Surprisingly, youths aged 14-17 used the Internet least (21%), but used friends and families as much as they relied on medical professionals (68%). Adults between 31 and 50 used the Internet to find healthcare information more than other age groups (45%).
- Local media (newspapers, TV) ranked last in all age groups except those over age 50, who used local media about as much as they used the Internet (41% for local media, 39% for Internet.)
- In addition to the choices provided by the survey, respondents listed the following other sources of healthcare information:
 - ✓ Books
 - ✓ Family Resource Centers
 - ✓ Co-workers
 - ✓ Alternative/complementary healthcare providers
- In comparing how residents in the different communities in Siskiyou County received healthcare information, there were no major differences except that the respondents from Happy Camp used the Internet as a source of information more than they used friends and families (63% vs. 50%).
- **Wellness and healthy lifestyle were topics that respondents looked for most often** (63%) followed by information on medications. A few interesting differences by age group were noted:
 - ✓ 27% of youths aged 14-17 indicated that they searched for healthcare careers, the highest percentage of any of the age groups.
 - ✓ Finding a healthcare provider was a priority for young adults (20%) and adults (30%).
- In the “Other” category, respondents listed the following types of information they looked for: (1) Specific disease conditions; and (2) Information on alternative/complementary medicine.
- Comparing this data geographically, of note is that the communities of Dorris and Tulelake were interested in health insurance as their second topic of interest.

INFORMATION ON SPECIFIC HEALTH CONDITIONS

Information about heart conditions, allergies, diabetes and cancer were the top specific health conditions in which respondents were interested. The specific conditions that are of interest to survey respondents vary by age, as can be seen from the chart on the following page.

- Allergies are the number one condition of interest to all age groups except those over age 50. For the older population, the top three conditions are heart disease, diabetes, and cancer.
- Mental health is the second condition of interest in the 18-30 year old population, and third among youths aged 14-17.

What specific conditions do you look for information about?



- The specific conditions respondents are interested in is different depending on the communities in which people live:
 - ✓ Etna/Fort Jones, Mount Shasta, and Weed residents all listed heart condition as their top health condition of interest.
 - ✓ Yreka and Happy Camp residents listed diabetes as their top health condition of interest.
 - ✓ Dunsmuir and Dorris/Tulelake respondents listed allergies as their number one concern.

PREFERENCE FOR TAKING A COMMUNITY CLASS

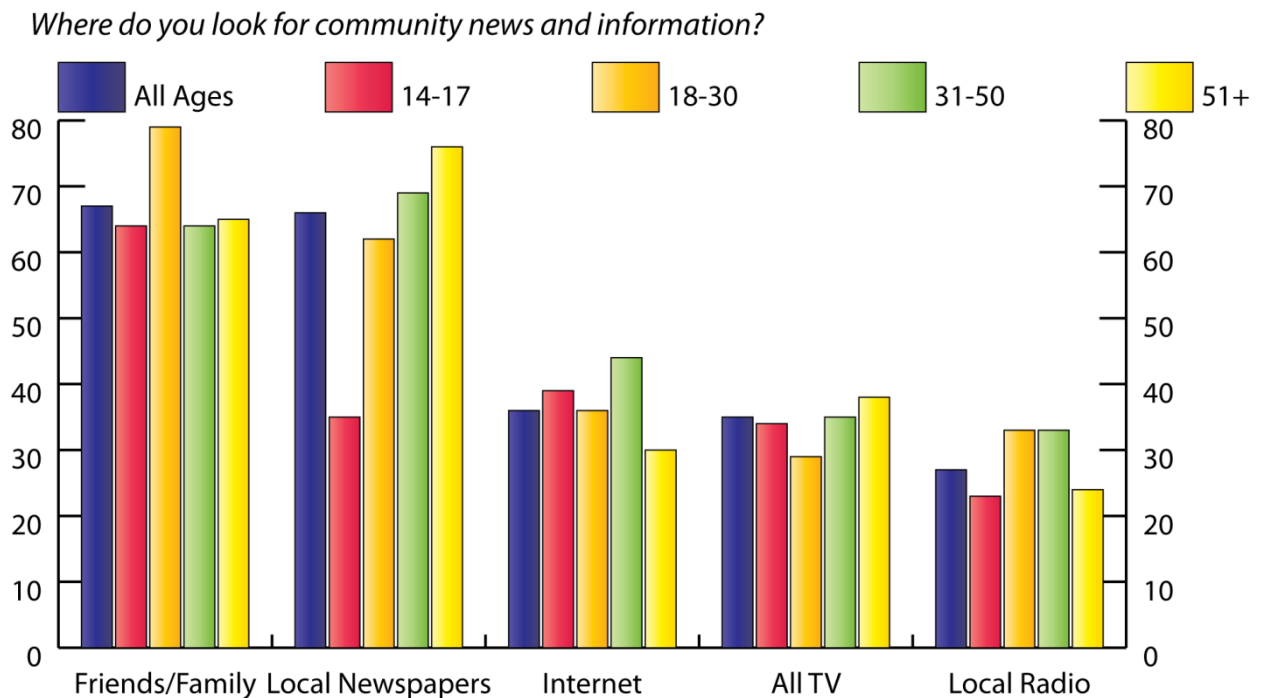
For all communities except Happy Camp, respondents preferred to take classes in-person (65%), followed by online (43%). Videoconferencing was a distant third at 18%. In Happy Camp, online courses were preferred by 79% of respondents, with in-person classes and videoconferencing classes tied at 41%.

Regardless of age group, survey respondents overwhelmingly preferred to take classes in-person. Taking classes online was second among all age groups, with a few interesting variations:

- Adults aged 31-50 indicated the highest preference for online classes, with 58% saying they would take online classes.
- Youths aged 14-17 and those over age 50 ranked online classes the lowest, with 37% of each group indicating they would take online classes.
- Videoconferencing ranked far behind in-person and online classes, ranging from a low of 12% for youths aged 14-17 to a high of 28% for adults aged 31-50.
- In the “Other” category, respondents suggested other locations for classes, such as libraries or Family Resource Centers, or indicated they were not interested in taking classes at this time.
- Only respondents from Happy Camp indicated a strong preference for taking classes online, with 79% of respondents indicating this preference. 41% of respondents indicated they would be interested in taking classes by videoconference, the same percentage as indicated they preferred in-person classes.

SOURCES FOR COMMUNITY NEWS AND INFORMATION

The top two sources for community news and information were friends and families (67%), followed closely by local newspapers (65%). Not surprisingly, use of the Internet as an information source was higher among younger respondents, and use of the local newspaper was higher among older respondents. This data also points out the importance of “word-of-mouth” in communicating information within Siskiyou County.



- Adults over age 50 rely more on local newspapers than any other source (76%), compared to their second highest source, friends and families (65%). Not surprisingly, seniors relied less on the Internet than other age groups (30%).
- Adults aged 31-50 relied on local newspapers more than any other source of information (69%), followed by friends and families (64%) and the Internet (44%).
- Young adults aged 18-30 relied more on friends and families than the other age groups (79%), followed by local newspapers (62%) and the Internet (36%).
- Youths aged 14-17 relied on friends and families far more than any other source (64%), followed by 39% relying on the Internet and 35% on local newspapers.

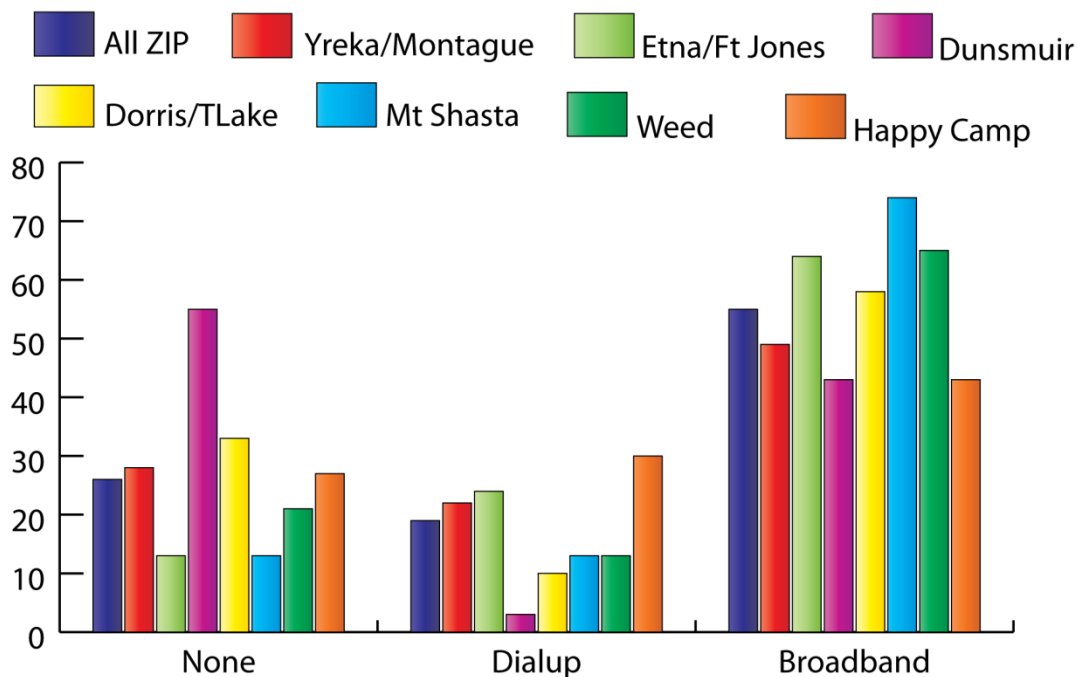
How respondents receive local information varied slightly by community of residence:

- Yreka, Etna/Fort Jones, Dorris/Tulelake and Happy Camp respondents all indicated a preference for receiving information from friends and families.
- Mount Shasta and Weed respondents indicated a preference for using local newspapers to receive community news.
- In Dunsmuir, friends and families and local newspapers were tied.
- The Internet as a source of community news was highest in Happy Camp, with 50% of the respondents indicating this as a source of information.

INTERNET ACCESS

Access to high-speed Internet services varies depending on where respondents live and their age. 55% of respondents had high-speed Internet, ranging from a high of 66% in Weed to a low of 43% of respondents from Dunsmuir. It is important to note that while broadband services may be *available* in a community, not every resident chooses to subscribe to this service. Also, the fact that this survey was available online, as well as on paper, may skew these results a bit higher than is otherwise the case.

What type of Internet access do you have at home? (by ZIP code)



Of importance in looking at the answer to this question is that 45% of respondents have either no Internet or a slow connection, a fairly high percentage, given the important role that the Internet plays in society. This relatively low penetration rate may also be a contributing factor as to why people prefer to take classes in-person.

- There were no major differences in Internet availability between age groups, except that young adults aged 18-30 reported the highest rate of no Internet connection (36%).

There are some interesting differences in Internet access by community:

- Mount Shasta reported the highest rate of “pretty fast” Internet connection, with 66% report that had DSL or satellite connections. Only 7% of respondents from Mount Shasta indicated they had no Internet, by far the lowest rate reported.
- Dunsmuir reported the highest rate with no Internet as 55% of respondents indicated they had no Internet connection at home. 14% of respondents indicated they had a “really fast” connection via cable television or fiber optic – the highest rate reported on the survey.

Work, friends and families, and the library were the top three places respondents went to access the Internet, and 20% did not access the Internet at all. Where people go to access the Internet other than home also differs by age:

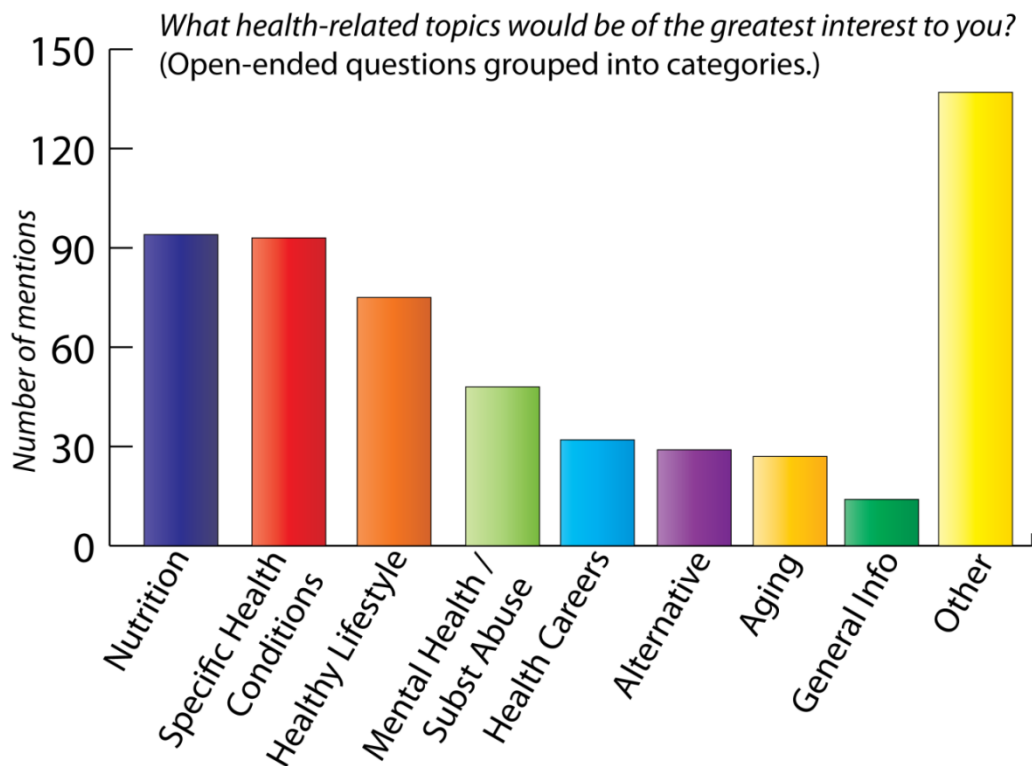
- Young adults aged 18-30 use the Internet at friends and families, COS, or the library far more often than they access it at work.
- The “Other” responses are almost all at school, provided by youth aged 14-17.
- 29% of those over age 50 do not access the Internet at all.

Depending on the community, respondents indicated the following preference for where to access the Internet:

- Mout Shasta, Weed, and Happy Camp residents access the Internet at work.
- Dunsmuir and Dorris/Tulelake respondents access the Internet at friends and families homes.
- Yreka and Etna/Fort Jones residents use the library more than other sources to access the Internet.

HEALTH RELATED TOPICS OF INTEREST

The survey asked respondents to answer an open-ended question asking them to identify what healthcare related topics they were most interested in. 452 individuals answered the question, often with multiple answers, providing a total of 549 topics. The responses are categorized in the table on the following page.



Information about nutrition, including weight management, was the most requested class topic, followed closely by information about specific health conditions and healthy lifestyle, which includes fitness and prevention of disease. Information about diabetes, heart conditions, and cancer were the specific disease conditions listed most often. The implications of this data as a guide to assist COS in developing external community classes focused on health are discussed in detail in Section Four of this report.

SECTION THREE - HEALTHCARE WORKER SURVEY RESULTS

INTRODUCTION/METHODOLOGY

Opportunities for the COS RHSI to serve healthcare workers and their employers were assessed by staff and consultants associated with Community Health Plan of the Siskiyou between April and June, 2009. Respondents participated in the following ways:

Individual key informants' interviews: Five large employers in Siskiyou County, collectively representing over 800 healthcare workers, participated in these individual interviews. This format allowed them to provide information and insights in a confidential environment.

Focus Group: Managers from nine small (2 – 50 employees) healthcare employers participated in a professionally-facilitated focus group in Mt. Shasta on May 20, 2009. Participants were from private medical and dental practices, rural clinics, one social service agency and one employment assistance agency. The participants represented office-based healthcare services, with a total estimated workforce of 400.

Self-Administered Questionnaire: This one-page survey was distributed and collected mostly through employer sites. In addition, some respondents accessed the healthcare worker survey online. 163 surveys were received. A summary of the survey data results is included in Appendix D.

Similar to the Community Survey, it should be noted that this assessment process was not designed as a scientific survey, but rather as a descriptive survey designed to provide information about the opinions of only those individuals who chose to participate in the survey process.

An analysis of the survey, the focus group and the key information interviews shows the following key findings:

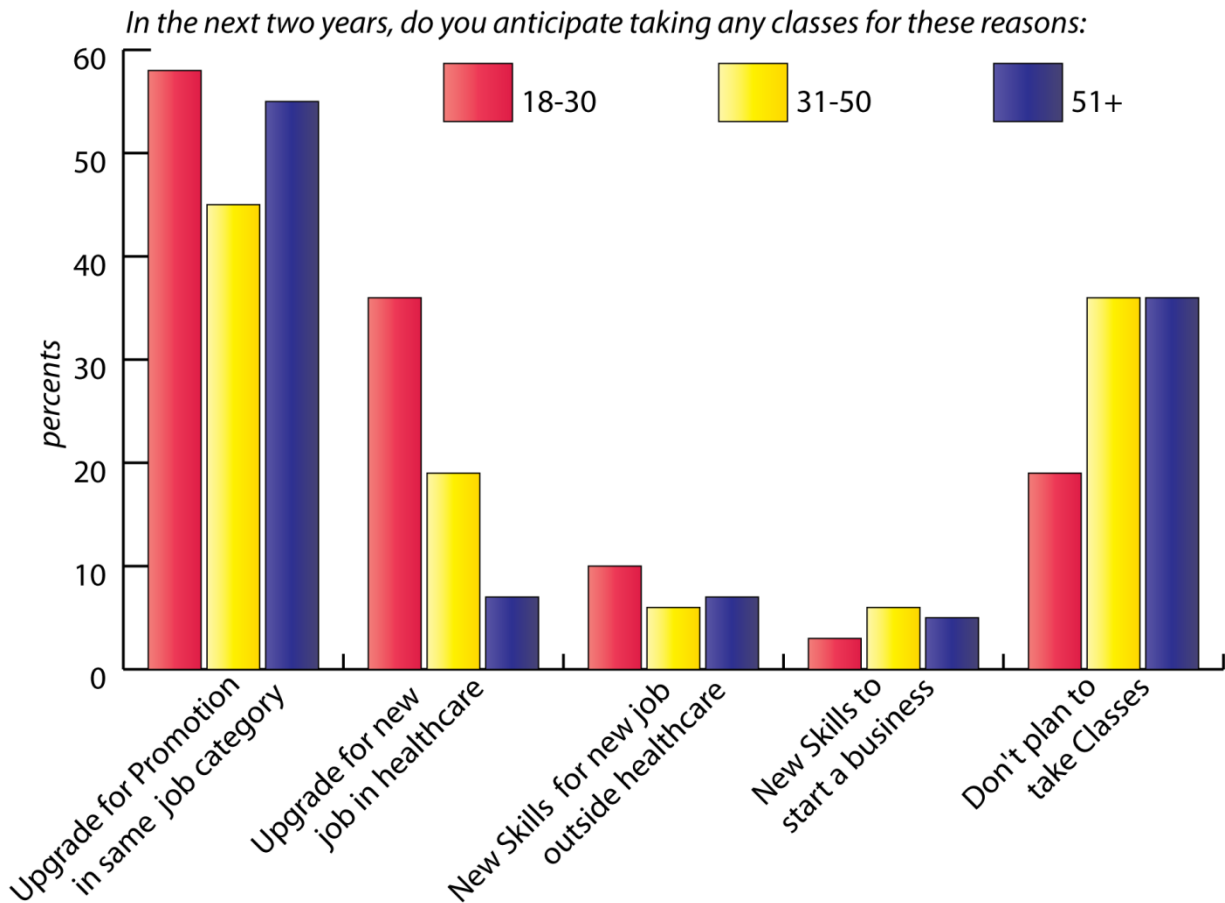
Siskiyou County's healthcare employers range from small, private physician practices to large multi-site clinic corporations. In addition to size, other key variables exist among these employers:

- Corporate ownership vs. private ownership
- Management environment (Union shop vs. non-union, secular vs., faith-based)
- Work schedules: 24-hour operations vs. office hours of M-F, 8 - 5
- HR continuing education policies
- Preference for custom on-site training vs. standard education offerings
- Employment setting and job title

Regardless of place of employment, **71% of the respondents to the survey receive training at work.** This suggests a key strategy for the RHSI to develop strong partnerships with local healthcare employers and help them meet the training needs of their employees.

70% of respondents indicated that they plan to participate in training or education over the next two years. The most often-cited reason for taking this training is for promotion (52%), followed by learning new skills to upgrade to a different job in healthcare (20%).

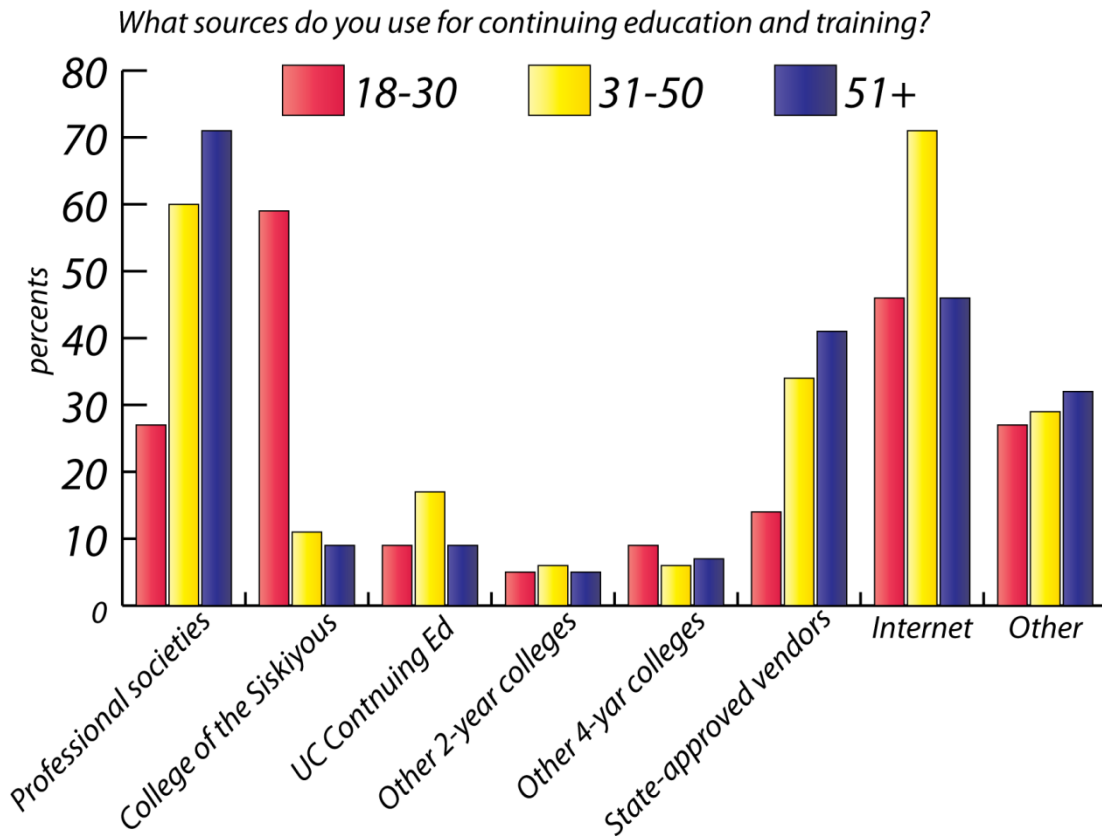
- Not surprisingly, younger workers aged 18-30 were most likely to take classes within the next two years for any reason (80%) than older workers, only 65% of whom reported they were planning on taking classes for any reason.



SOURCES FOR CONTINUING EDUCATION AND TRAINING

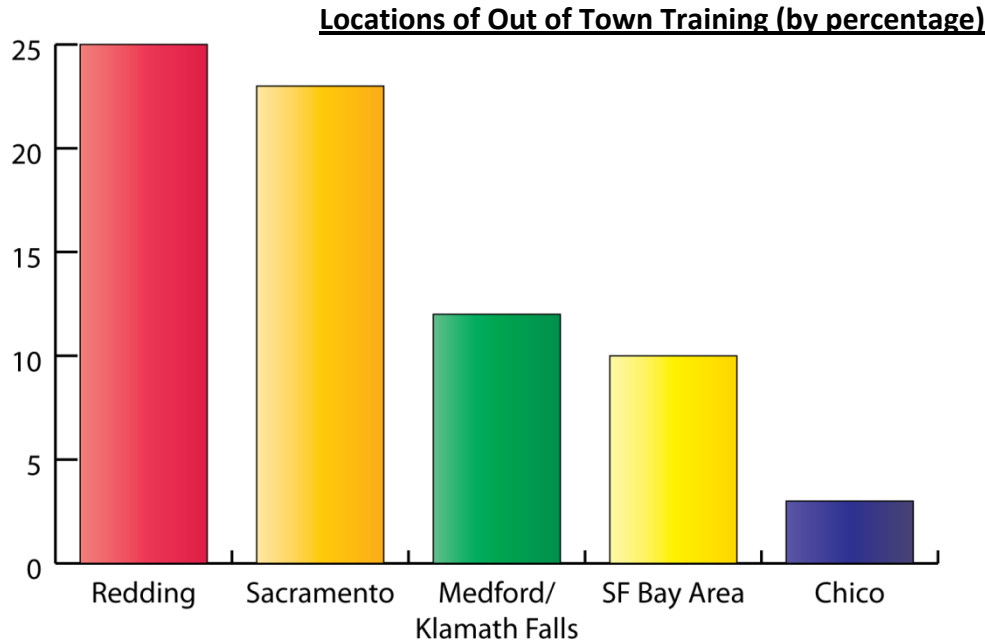
Overall, 57% of respondents reported that their primary source for CE training were professional societies, followed closely by the Internet (53%), but the source of training for healthcare workers varied by age.

- For younger employees aged 18-30, College of the Siskiyous was their primary source of training (59%), followed by the Internet (45%).
- For workers aged 31-50, the Internet was the most prevalent source of training (71%), followed by professional societies at 60%.
- For workers over the age of 51, professional societies were the most cited source (70%) followed by the Internet (45%).



COS was listed as a source for training by 20% of respondents, ranging from a low of 7% for those employed by hospitals, to a high of 29% for those employed by public agencies. Combined with the prevalence of younger workers who use COS as a training resource, this data suggests that the RHSI should expand its content to be relevant to local healthcare employers and employees so that this percentage increases substantially.

About half of the survey respondents indicated that they occasionally travel out-of-county for CE training, with Redding and Sacramento being the most mentioned destinations for training. The following chart shows the location of out-of-town for training for those who respondents who provided this information:



There is a high cost to out-of-county travel, and includes not only the direct costs of travel (mileage, hotel, and meals) but the indirect expenses of lost employee productivity. Employer estimates of direct cost per employee for off-site continuing education and training ranged from \$0 (low) - \$200 (mode) - \$400 (high) per employee. This number is not indicative of who receives employer training support, it is just a range based on expense category divided by employees.

This estimate does not include staff time, including overtime necessary for traveling out-of-county. For example, the employer focus group participants estimated that an average 11% reduction in overtime costs would be possible if more CE could be obtained locally. It is also important to note the variability of whether or not an employer is a union-shop, since union contracts often govern the amount of support an employer provides to employees for continuing education.

With one exception among large employers, **less than 10% of direct expenses for off-site CE are retained within Siskiyou County**. In addition, estimates ranged from 50% - 67% of these continuing education expenses to be for non-tuition items such as travel, lodging, and per diem expense.

66% of the survey respondents indicated that they paid for continuing education themselves, not their employer. This overall statistic varies somewhat by employer, with those working for public agencies or non-profit most often reporting that their employer paid instead of themselves. On average, respondents who specified a dollar amount indicated that they spent \$640 per year on their CE courses, ranging from a low of \$24 to a high of \$3,000. (It is important to note that only 54 of the 163 respondents indicated a specific dollar value for cost of training.)

As noted in the environmental scan, health **information technology will have a major impact on healthcare delivery over the next few years**. Learning how to do online literature searches, as well as training in EHR were the top two areas of HIT training requested by survey respondents. Employees in hospital and physician office settings expressed strong interest in receiving training in electronic health records. The data from the COS Health Workforce Survey suggests both challenges and opportunities for COS in this area.

- MS Office software is used daily by almost 85% of respondents and 30% of respondents expressed an interest in receiving training in Windows/Office applications.
- The use of electronic health records varies widely by place of occupation, but overall, almost half of respondents use EHRs at least weekly. 52% of those employed by clinics and 58% of those employed by non-profit organizations reported that they used EHR daily. 47% of respondents reported they never used EHR in their practice.
- There is a solid base of EHR utilization among 18–30 year old employees. 66% of respondents 18 – 30 years old are already using EHR in their jobs vs. 49% for the older age bands. This condition suggests that development of technology leadership within existing healthcare workforce would be possible. Peer-to-peer user groups could be established by COS to attract young students/employees into EHR coursework.
- COS should consider incorporating basic technology orientation and training as a prerequisite for all health-related curriculum as well as within any customized employer continuing education package.

There are several opportunities to coordinate existing educational resources to optimize program development & minimize duplication. The following resources are available as a starting point for development:

- **Web Content:** CHW hosts free continuing education for their licensed and certified staff online at MyfreeCE.com. In addition, corporate “Webinars” are also a resource.
- **Staff, Video and Content Resources:** One local long term care community provides all continuing education on site for staff using a combination of staff nurses, video and online learning. Many other subjects are available on CD and through webinar. Pairing local education “hosts” with existing content is a strategy that is working for some settings.
- **Rural specific content partnerships, coordination and delivery:** As mentioned in the environmental scan, much of the content available out-of county has marginal application in the rural setting. Some content sources are available and may include online, CD and Webinars offered through 2 year and 4 year colleges and commercial vendors.
- A Siskiyou County healthcare employer **inter-organizational committee called Med-Ed** exists to address opportunities to coordinate continuing education efforts and share resources. This committee could become a vehicle to assist the RHSI in developing stronger partnerships with Siskiyou County’s healthcare employers.

Another suggestion is to take advantage of and promote reported positive attitudes toward COS and local healthcare continuing education learning opportunities. A theme that ran through all of the data collected through this effort is the perception that COS is a valuable professional and community resource. COS can build on this good-will in the following ways:

- **Expand its ability to be a local training resource.** The local hospice agency maintains a focus on employer-provided education and would like to be able to offer more by partnering with COS. Similarly, the local community hospital is interested in developing custom workplace trainings to be delivered at their location. Practice managers in the focus groups agreed that COS is a very appropriate setting for the continuing education they need.
- **Build on existing employer training capacity.** In-house training is a strength reported by most large employers during the key informant interviews. Employers provide job related training at the worksite for 71% of respondents in a variety of clinical and technical fields. In light of the lack of rural specific content, the in-house training developed at Siskiyou County workplaces is an asset to developing community college level-rural environment content.
- **Utilize local healthcare providers as teachers.** Local healthcare providers bring a unique and practical perspective to course and curriculum development. In addition, they are most likely to travel to courses outside the area and be able to provide updates within a rural context to the local education and practicing communities.
- **Use more effective promotion of classes through the use of local media resources.** Hospital employee identified that better use of local media resources may help attract more attendees to programs that are already in place.

There is a strong desire for more locally available CE opportunities. Survey respondents listed a number of classes they were wished were available locally ranging from administrative courses in billing and coding to clinical classes targeted to specific health occupations such as physical therapy and nursing. COS could consider working with other Siskiyou County healthcare entities to develop, deliver, evaluate, package and sell *rural-specific* healthcare *clinical and administrative* continuing education course content and employer policies. Such an offering could attract early to mid-career healthcare workers and students from outside of Siskiyou County.

- Administrative training is greatly needed by all employer settings. It is anticipated that this condition is the same in other rural communities: Of the top eight needed subject areas cited most often by respondents at all levels of research, six are administrative in nature:

1. Basic computer skills	4. Healthcare informatics
2. Staff supervision	5. Management (Department, Private Practice, Clinic)
3. Online clinical literature research for best practices	6. Electronic medical records

A complete list of these classes is included in Appendix E.

SECTION FOUR – CONCLUSIONS AND NEXT STEPS

CONCLUSIONS

Based on the information gathered from the community and healthcare workforce surveys, as well as conversations with dozens of local residents and the review of relevant historical documents, the following recommendations are provided to COS to assist the College in developing a business plan for the RHSI:

- **Become a “local trusted source” for healthcare information.** Siskiyou County residents prefer to get their healthcare information from local trusted sources – their local healthcare provider or their friends and families, followed closely by the local newspapers. The RHSI could become an additional local trusted source for healthcare information by offering opportunities for local healthcare providers or local wellness-oriented businesses to provide information via the RHSI. These local experts could offer health-related classes via the RHSI or the COS existing community learning infrastructure.

Business Plan Considerations

- ✓ What incentives need to be provided to local healthcare providers or businesses to encourage their participation in the RHSI Community Education Program?
- ✓ How can the RHSI partner with the local newspapers to expand the delivery of local healthcare content via the newspaper?

- **Develop or distribute community education classes of demonstrated interest to residents.** As indicated in the survey responses, residents are most interested in nutrition, healthy lifestyle, and information on specific health conditions. Either through linkage with local instructors, or through distributing course content already available through other sources, RHSI should begin its programs focusing on these three areas of content.

Business Plan Considerations

- ✓ How much will local residents pay for community classes and will this cover the cost of offering these classes?
- ✓ Are there opportunities for creative partnerships between local businesses and healthcare providers to “sponsor” courses offered by RHSI to reduce fees?

- **Expand community service learning opportunities for COS/RHSI students.** Currently, the College offers a small number of opportunities for COS students to volunteer in the community for college credit. The RHSI could become a vehicle to expand the ability of students to engage more deeply with the local community and thus, strengthen the collaboration between the college and community service organizations. This increased collaboration, in turn, can foster other ideas of how the RHSI can become a community educational resource.

Business Plan Considerations

- ✓ How can student community service opportunities link with job training and career prep?
- ✓ Can student volunteers help fill the gap that might be experienced by local non-profit organizations during these difficult economic times?

- **Develop a community health resource Web portal.** The RHSI could distribute Web-based information from outside sources that have been reviewed by local healthcare providers, RHSI clinical staff or students and deemed of interest and appropriate for community use. Thus, the RHSI would serve as a Web portal providing health information to the community that has been reviewed by trusted local sources and would be of interest to the local community. This Web portal could also be used as forum for sharing health information via local “blogs” or other social networking tools.

Business Plan Considerations

- ✓ Does this Web portal duplicate any existing health resource websites in the community?
- ✓ Are their opportunities for collaboration or partnership in developing/hosting this Web portal?

- **Promote videoconferencing capability.** While most persons prefer to take classes in-person, travel time and costs are significant barriers to in-person meetings, especially in the winter months, and for the County’s outlying communities. Although COS has made substantial investments in its videoconferencing infrastructure, there is much work to be done to convince local residents that video is “as good as” in-person classes. To the extent that the RHSI wishes to use videoconferencing as a tool for delivering community education, and not just college courses, COS needs to embark on a wide-ranging community education and publicity effort to promote its videoconferencing capacity, including improving signage at its community-based facilities, gathering testimonials from students successfully using the system, allowing other entities to use its system, and hosting more frequent community classes at outlying areas.

Business Plan Considerations

- ✓ Does the College have the capacity to expand the use of its videoconferencing infrastructure for both community education and potentially for outside users?
- ✓ If the College determines it is appropriate for outside entities to use its videoconferencing system, how much should the College charge for this use?

- **Support regional and local efforts to expand broadband and Internet access.** A number of efforts are currently underway to expand broadband into California’s most remote communities, including the demand aggregation project coordinated by the California Emerging Technology Fund. COS should continue to be a partner in these efforts. Until broadband connectivity becomes widespread in Siskiyou County, Internet access for many residents may be limited to public spaces such as the Family Resource Centers and local

libraries. To the extent that RHSI delivers courses via the Internet, it can expand the number of potential students by ensuring that these public access points remain viable. Ways to support these centers include providing access to COS technical support, access to reduced fees for software licensing through affiliation with the College, and access to computer instruction offered by college students to the community.

Business Plan Considerations

- ✓ Could community Internet access points be used as locations for expanded COS community service learning sites?
 - ✓ Funding through ARRA could be used to support/expand community Internet access points – would a partnership with COS strengthen community applications?
- **Strengthen partnerships between COS and local healthcare employers in order to better understand local needs for training.** As indicated by the healthcare worker survey and confirmed by the key informant interviews and the focus groups, both employers and employees would prefer to have more locally available CE courses. But for these to be meaningful, they must meet the needs of both employers and employees in terms of content, scheduling, delivery method, and cost. COS should consider joining the Med-Ed committee, which exists to promote collaboration among Siskiyou County healthcare employers in the area of employee training.

Business Plan Considerations

- COS should position itself as a partner with local healthcare employers in developing and distributing CE programs customized for their employees. As part of the business plan process, COS should have more in-depth conversations with local healthcare employers regarding these partnership opportunities.
- COS must demonstrate the financial value to both employers and employees to encouraging employees to take locally-offered training, rather than leaving the community. This value will be a combination of direct cost savings as a result of less out-of-town travel, and a perception that high-quality training can be obtained within Siskiyou County.
- The new California Telehealth Network, which will provide high-speed, secure connectivity between healthcare providers and educational institutions will support the ability of COS to provide training via video directly into the local healthcare facilities. It will also facilitate the ability of local healthcare professionals to provide training directly from their healthcare facilities to students and community residents via the existing COS videoconferencing network.

- **Strengthen relationships with external partners who offer value to Siskiyou County healthcare workers and employers.** Clearly COS, in isolation, cannot provide the wide range of training required by healthcare workers in Siskiyou County. However, the RHSI can serve as a broker of services offered by other organizations such as those listed in the environmental scan. Through a deeper understanding of what local employers and healthcare workers need in terms of training, and an analysis of what services are available externally, the RHSI could expand access to courses that local healthcare employees desire and need.

Business Plan Consideration

- ✓ Through the business plan process, more information will need to be obtained about how educational fees and revenues could be allocated between COS and external partners.
- **Leverage existing investments and partnerships in health information technology to expand locally available HIT training opportunities for two key audiences: new HIT workers and existing healthcare workers who require HIT training.** The RHSI, along with COS existing technology infrastructure, will provide state-of-the art technology that could be used to train new HIT workers, and provide opportunities for healthcare workers to upgrade their technology skills. COS is perfectly positioned to help local employers meet the increased need for HIT training for their existing workforce, as well as offer training for students and local residents in this field. In addition, COS can help leverage the HIT expertise that exists within the local workforce that have experience with EHR installations and use them as “local champions” to train others in this field.

Business Plan Considerations

- ✓ Currently, COS/RHSI does not have a medical informatics program, although this is being considered for development as part the RHSI student curriculum. Through partnerships with existing medical informatics/HIT programs at Oregon Institute of Technology, UC Davis, and Cosumnes River College in Sacramento, COS should consider “fast-tracking” acquiring expertise in this arena in order to take advantage of ARRA funding opportunities associated with developing an HIT workforce.
- ✓ COS should explore developing a partnership with General Electric, the company that owns Centricity, which is the EHR product most prevalent among those Siskiyou County healthcare providers who are using electronic health records. GE just announced a major new initiative designed to expand the use of EHR in rural and underserved communities which could be used to bring these resources to Siskiyou County, supported by HIT staff trained at COS.
- **Create synergy between community health education efforts and professional education programs in order to improve community health.** As demonstrated by the community survey results, Siskiyou County residents prefer to get their healthcare information from local trusted sources – their healthcare providers or their friends and family. The RHSI offers a vehicle that can be used to address community health issues on a broader scale by actively engaging with the community to understand their healthcare needs, and then work

with local healthcare professionals to develop local training programs for healthcare professionals to address these local needs. This “train-the-trainer” approach could be a powerful tool to address community health issues such as obesity, smoking, etc., where the changes needed to improve health rely on individual behavior change that should be supported by community norms. If the local healthcare community were all sending the same message to their patients regarding specific healthy behaviors, *just imagine how that could positively impact the health of Siskiyou County residents.*

Business Plan Considerations

- ✓ This type of community health effort requires sustained administrative support to conduct community outreach and needs assessments, develop training programs, and evaluate impact. It is best done through a collaborative organization whose primary mission is community mobilization for health. COS should consider how to be a strong partner in one or more community collaborations that already exist in Siskiyou County, such as the Siskiyou County Health Partnership, in order to facilitate the use of RHSI as a community health resource.²¹

- **Leverage the convergence of Siskiyou County’s natural beauty and abundance of alternative and complementary health providers to develop wilderness medicine and holistic healing seminars designed to attract out-of-town students.** Siskiyou County is blessed with world-class natural resources and a concentration of alternative and complementary health providers. The RHSI should consider how to partner with the County’s already developed tourism infrastructure to expand the area’s ability to host classes and seminars designed to be held in the County.

Business Plan Considerations

- ✓ COS should strengthen its partnerships with the local tourism and business community to provide a forum for the planning and development of these types of programs.

- ✓ In addition to in-person meetings, the advanced technology in place at COS could help local business owners develop content that could be exported via the Internet and video streaming media as an adjunct to in-person events.

NEXT STEPS

The findings from this report will be used by COS to complete a business plan that will guide the development of specific community and professional education programs for the RHSI. The RHSI opened in August 2009, and the Business Plan will be completed by the end of 2009, with the first external programs scheduled to begin during 2010.

²¹ GE Healthymagination: <http://www.healthymagination.com/>



Appendix A

Siskiyou County – Demographics

Siskiyou County is located in inland northern California, adjacent to the Oregon border. As the fifth largest county in California by area, Siskiyou County features spectacular natural beauty and scenic cities and towns including Yreka, Mt. Shasta, Weed, Dunsmuir, McCloud, & Tulelake as well as Butte Valley, Scott Valley, Shasta Valley, & the Klamath River Corridor.

Siskiyou County is geographically widely diverse. From towering Mount Shasta (elev. 14,179 ft/4,322 m) near the center of the county, to lakes and dense forests, as well as desert, chaparral, and memorable waterfalls, the county is home to world-famous trout-fishing rivers and streams, such as the Sacramento and McCloud Rivers. Mount Shasta itself has a winter sports center. Pastoral Scott Valley in the western part of the county has many wide, tree-lined meadows, supporting large cattle ranches. The county’s water is viewed as sufficiently pure and abundant that the county is a source of significant amounts of bottled water, distributed throughout the country.

Siskiyou County Fast Facts:

Population – 47,500 ~

Elevation - 2938 ft. ~

Size - 6347 square miles

	2006	2000	1990
Population	45,091	44,301	43,531

Source: U.S. Census Bureau, 2006 Population Estimates, Census 2000, 1990 Census

General Characteristics -	Number	Percent	U.S.
Total population	44,301		
Male	21,752	49.1	49.1%
Female	22,549	50.9	50.9%
Population by Age			
Median age (years)	43.0		35.3
Under 5 years	2,260	5.1	6.8%
18 years and over	33,681	76.0	74.3%
65 years and over	8,040	18.1	12.4%
One race	42,686	96.4	97.6%
White	38,573	87.1	75.1%
Black or African American	580	1.3	12.3%
American Indian and Alaska Native	1,726	3.9	0.9%
Asian	526	1.2	3.6%
Native Hawaiian and Other Pacific Islander	57	0.1	0.1%
Some other race	1,224	2.8	5.5%
Two or more races	1,615	3.6	2.4%
Hispanic or Latino (of any race)	3,354	7.6	12.5%
Household population	43,611	98.4	97.2%
Group quarters population	690	1.6	2.8%
Average household size	2.35		2.59
Average family size	2.87		3.14

Total housing units	21,947		
Occupied housing units	18,556	84.5	91.0%
Owner-occupied housing units	12,472	67.2	66.2%
Renter-occupied housing units	6,084	32.8	33.8%
Vacant housing units	3,391	15.5	9.0%
Social Characteristics -	Number	Percent	U.S.
Population 25 years and over	30,682		
High school graduate or higher	25,704	83.8	80.4%
Bachelor's degree or higher	5,445	17.7	24.4%
Civilian veterans (civilian population 18 years and over)	6,142	18.2	12.7%
Disability status (population 5 years and over)	9,154	22.0	19.3%
Foreign born	2,382	5.4	11.1%
Male, Now married, except separated (population 15 years and over)	10,405	59.7	56.7%
Female, Now married, except separated (population 15 years and over)	10,400	56.3	52.1%
Speak a language other than English at home (population 5 years and over)	3,763	9.0	17.9%
Economic Characteristics -	Number	Percent	U.S.
In labor force (population 16 years and over)	19,102	54.3	63.9%
Mean travel time to work in minutes (workers 16 years and over)	18.2		25.5
Median household income in 1999 (dollars)	29,530		41,994
Median family income in 1999 (dollars)	36,890		50,046
Per capita income in 1999 (dollars)	17,570		21,587
Families below poverty level	1,726	14.0	9.2%
Individuals below poverty level	8,109	18.6	12.4%
Housing Characteristics -	Number	Percent	U.S.
Single-family owner-occupied homes	8,305		
Median value (dollars)	100,300		119,600
Median of selected monthly owner costs	(X)		
With a mortgage (dollars)	812		1,088
Not mortgaged (dollars)	237		295

(X) Not applicable.

Source: U.S. Census Bureau, Summary File 1 (SF 1) and Summary File 3 (SF 3)

Siskiyou County Industry Analysis, 1998



By Permission of Center for Economic Development, California State University, Chico





Industry Sector	# of Establishments	% of Total	Total Employees	% of Total	Total Sales (\$1,000,000s)	% of Total
Agriculture, Forestry, Fishing	164	6.7%	948	6.3	66.0	8.8%
Mining	6	0.2%	21	0.1%	1.1	0.1%
Construction	206	8.4%	595	3.9%	56.2	7.5%
Manufacturing	115	4.7%	1,192	7.9%	88.8	11.8%
Transportation, Public Utilities	138	5.6%	868	5.8%	48.4	6.4%
Wholesale Trade	83	3.4%	513	3.4%	77.4	10.3%
Retail Trade	553	22.6%	2,949	19.6%	149.6	19.8%
Finance, Insurance, Real Estate	169	6.9%	634	4.2%	61.6	8.2%
Services	941	38.4%	5,140	34.1%	204.8	27.2%
Public Administration	77	3.1%	2,221	14.7%	0.0	0.0%
Total/Gross County Product	2,452	100.0%	15,081	100.0%	753.9	100.0%

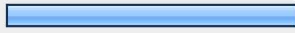
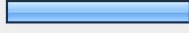

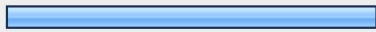


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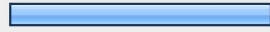
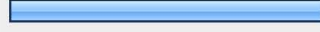

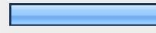
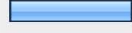
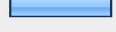


COS Rural Health Community Survey

1. Home ZIP Code		
		Response Count
		633
	<i>answered question</i>	633
	<i>skipped question</i>	33





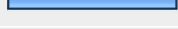
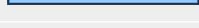
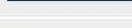
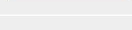
2. Gender			
		Response Percent	Response Count
Male		30.8%	197
Female		69.2%	443
	<i>answered question</i>		640
	<i>skipped question</i>		26

3. Age:			
		Response Percent	Response Count
14 - 17		16.4%	107
18 - 30		16.3%	106
31 - 50		25.8%	168
51+		41.6%	271
	<i>answered question</i>		652
	<i>skipped question</i>		14



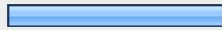

4. Where do you get information about healthcare and health services? (check all that apply):			
		Response Percent	Response Count
Friends and Family		57.9%	376
Internet		36.5%	237
"Ask a Nurse"		13.3%	86
Your Doctor, Nurse Practitioner or Physician's Assistant		73.8%	479
Media (newspaper, magazine, radio, TV)		26.5%	172
Other		11.9%	77
	Other (please specify)		76
		answered question	649
		skipped question	17

5. What kinds of health information do you look for? (check all that apply):			
		Response Percent	Response Count
Medications information		52.1%	286
Wellness and healthy lifestyle		62.7%	344
Emergency response (e.g. poison control)		14.8%	81
Health insurance		30.1%	165
Health services cost and quality		23.9%	131
Finding a healthcare provider		19.7%	108
Health careers		8.6%	47
Other		7.7%	42
	Other (please specify)		50
		answered question	549
		skipped question	117

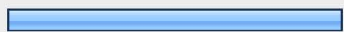
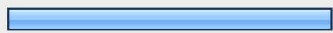


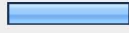
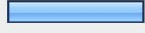
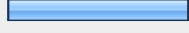




6. If you look for information about specific health conditions, which ones? (check all that apply):

	Response Percent	Response Count
Heart condition 	38.9%	195
Stroke 	16.6%	83
Diabetes 	32.3%	162
Substance abuse 	12.4%	62
Cancer 	33.3%	167
Allergies 	38.1%	191
Mental Health 	24.8%	124
Other specific conditions 	24.8%	124
Other (please specify)		143
answered question		501
skipped question		165

7. How would you prefer to take a community class? (check all that apply):

	Response Percent	Response Count
In person (Classroom) 	64.9%	396
By videoconference to a place in my community 	18.4%	112
Online (Internet) 	43.1%	263
Other 	4.4%	27
Other (please specify)		36
answered question		610
skipped question		56

8. What health-related topics would be of the greatest interest to you?		
		Response Count
		442
	<i>answered question</i>	442
	<i>skipped question</i>	224

9. What are your main sources for community news and information? (check all that apply):			
		Response Percent	Response Count
Friends and family		66.8%	435
Local newspapers		65.0%	423
MCTV Channel 15		5.7%	37
Community Channel 4		4.6%	30
Other TV		24.1%	157
Local radio		27.0%	176
Internet		35.8%	233
Community organizations		16.0%	104
Library		12.1%	79
Bookstore		3.8%	25
Other		7.5%	49
	Other (please specify)		64
	<i>answered question</i>		651
	<i>skipped question</i>		15

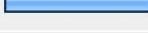
10. What kind of Internet connection do you have at home?			
		Response Percent	Response Count
I don't have an Internet connection at home		26.1%	168
Slow connection (dialup)		19.1%	123
Pretty fast connection (DSL, satellite)		41.2%	265
Fast connection (wireless microwave)		7.6%	49
Really fast connection (cable, fiber optic)		5.9%	38
	Other (please specify)		0
	answered question		643
	skipped question		23

Appendix C

COS Healthcare Workers Survey


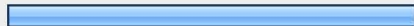
1. Work ZIP Code		
		Response Count
		162
	<i>answered question</i>	162
	<i>skipped question</i>	1


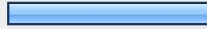

2. Current Job Title		
		Response Count
		162
	<i>answered question</i>	162
	<i>skipped question</i>	1

3. Employer Type			
		Response Percent	Response Count
Hospital		22.4%	34
Clinic		28.9%	44
Public agency		4.6%	7
Nonprofit organization		9.9%	15
Physician office		28.3%	43
Self-employed		4.6%	7
Not currently employed		1.3%	2
	<i>answered question</i>		152
	<i>skipped question</i>		11

4. Years employed in healthcare		
		Response Count
		153
<i>answered question</i>		153
<i>skipped question</i>		10


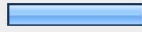
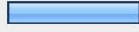

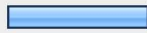



5. Types of Licenses/Certificates		
		Response Count
		123
<i>answered question</i>		123
<i>skipped question</i>		40

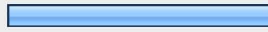
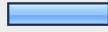



6. Gender			
		Response Percent	Response Count
Male		18.0%	29
Female		82.0%	132
<i>answered question</i>			161
<i>skipped question</i>			2

7. Age			Response Percent	Response Count
18-30			22.5%	36
31-50			40.0%	64
51+			37.5%	60
			<i>answered question</i>	160
			<i>skipped question</i>	3



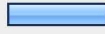
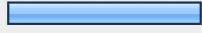
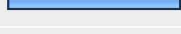
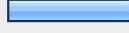



8. How many credit hours do you need per year to maintain all of your healthcare certificates and licenses?			Response Count	
			105	
			<i>answered question</i>	105
			<i>skipped question</i>	58

9. How do you currently receive you continuing education and training? (check all that apply):			Response Percent	Response Count
At work		71.0%	93	
College of the Siskiyou (on campus)		13.0%	17	
College of the Siskiyou (online)		4.6%	6	
In-county classes in Mt.Shasta		9.9%	13	
In-county classes in Weed		5.3%	7	
In-county classes in Yreka		13.0%	17	
Out-of-county classes in Medford/Klamath Falls		11.5%	15	
Out-of-county classes in Redding		25.2%	33	
Out-of-county classes in Red Bluff		0.8%	1	
Out-of-county classes in Chico		3.1%	4	
Out-of-county classes in Sacramento		22.9%	30	
Out-of-county classes in Bay Area		9.9%	13	
Other (live or online)		42.7%	56	
	Other (please specify)		27	
	answered question		131	
	skipped question		32	

11. If you go somewhere else to access the Internet, where do you go? (check all that apply):			
		Response Percent	Response Count
I don't access the Internet anywhere.		19.6%	102
At work		26.7%	139
Library		26.2%	136
Internet cafe		6.9%	36
A friend or family member's home		27.5%	143
College of the Siskiyous		11.2%	58
Family Resource Center		12.5%	65
Other		7.5%	39
	Other (please specify)		47
	answered question		520
	skipped question		146

14. In the next two years, do you anticipate taking any training or education classes for the following reasons? (check all that apply):			
		Response Percent	Response Count
Upgrade your skills for a promotion in your same job category		52.3%	68
Upgrade your skills for a different healthcare job		20.0%	26
Acquire new skills to obtain a job outside the healthcare field.		6.9%	9
Acquire new skills to start a business.		4.6%	6
I don't plan on taking classes.		30.8%	40
	answered question		130
	skipped question		33

15. How much do you use each of the following technologies in your work?						
	Daily	Weekly	Monthly	Rarely	Never	Response Count
Microsoft Windows and Office Applications	84.7% (127)	5.3% (8)	1.3% (2)	4.0% (6)	4.7% (7)	150
Diagnostic Technologies (like MRI)	16.4% (18)	10.9% (12)	0.0% (0)	7.3% (8)	65.5% (72)	110
Videoconferencing/Telemedicine	0.9% (1)	8.6% (10)	15.5% (18)	31.9% (37)	43.1% (50)	116
Practice Management System/Billing	35.8% (43)	6.7% (8)	6.7% (8)	11.7% (14)	39.2% (47)	120
Physician Order Entry	32.4% (36)	1.8% (2)	0.0% (0)	8.1% (9)	57.7% (64)	111
E-Prescribing	16.7% (18)	2.8% (3)	0.0% (0)	4.6% (5)	75.9% (82)	108
Electronic Health Records	41.5% (49)	5.1% (6)	1.7% (2)	4.2% (5)	47.5% (56)	118
Website Management	6.4% (7)	7.3% (8)	3.7% (4)	11.0% (12)	71.6% (78)	109
Online Clinical Literature Review	12.5% (14)	16.1% (18)	19.6% (22)	8.9% (10)	42.9% (48)	112
Other	27.8% (5)	5.6% (1)	0.0% (0)	0.0% (0)	66.7% (12)	18
	Other (please specify)					9
	answered question					152
	skipped question					11

16. In which of the following Health Information Technologies are you interested in obtaining training? (check all that apply):				
			Response Percent	Response Count
Basic computer literacy (keyboarding, concepts)			14.7%	15
Microsoft Windows and Office applications			30.4%	31
Advanced business applications (accounting, etc.)			19.6%	20
Online clinical research literature for best practices			38.2%	39
Health informatics			34.3%	35
Diagnostic technologies (MRI, etc.)			24.5%	25
Videoconferencing			26.5%	27
Electronic Health Records			42.2%	43
Other			10.8%	11
		Other (please specify)		12
		<i>answered question</i>		102
		<i>skipped question</i>		61

APPENDIX D: WORKFORCE STATED CURRICULUM/CONTENT NEEDS

Administrative

Billing

Coding

Computer skills (Basic Operating System and Common Healthcare Applications)

Customer Service (Dealing w/ difficult people, Communicating w/ MDs, Conflict Management, Assertiveness Training, Medical & Social needs of seniors, Generational)

Electronic Medical Records (introductory)

Generational Workforce Characteristics

HIPPA

Keyboarding

Labor law

Rural Healthcare Management Training (Acute Depts, Clinic, Practice, Community Health)

Leadership Skills

Medical Assisting

Medicare

Medical Records

MS Office applications

QA/QI/PI

Supervisory skills

Use of media

Clinical/Skilled

Body Mechanics/proper lifting techniques

BSN via Distance Learning

Cardiology (Invasive)

C.N.A.

CPR training

COS/RHSI Research Report

Clinical nurse refresher for re-entry nurses

Critical Care Education

Diabetes equipment

End-of-life care options

Fetal Monitoring

First Aid

Generational care issues

Gerontology

Hospice Certification, neurology

N95 Fit Testing Certification

OB Classes

Parish nursing

Pastoral clinical care

Pharmacy Review

Phlebotomy

Physical Therapy (licensed)

Physical Therapy Assisting

POLST

Radiology/imaging 2-year tech program

TLC standard prior to statin use

Ultrasound Tech Program

Wound Care

Technical Courses

Computer hardware and operating system training

Electronic/IS capability

In-home "remote monitoring"

Telemedicine Hardware 101